

# Reflections

## 2018-19



Charutar Vidya Mandal's  
**V.P. & R.P.T.P. Science College**

Vallabh Vidyanagar - 388 120



# V.P. & R.P.T.P. SCIENCE COLLEGE

VALLABH VIDYANAGAR

## Reflections

2018-2019

(Annual College Magazine)

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## V. P. & R. P. T. P. SCIENCE COLLEGE

Vallabh Vidyanagar - 388 120

Re - Accredited "A" Grade by NAAC and "A+" Grade KCG

Four-star rating by GSIRF (Gujarat State Institutional Ranking Framework)

Recognized By UGC As College With Potential For Excellence

(CPE Phase - II Up to 2019 )

Managed By Charutar Vidya Mandal

Website : [www.vpscience.org](http://www.vpscience.org)

The Editorial Board is not responsible for the accuracy or otherwise for the opinions expressed by the contributors.



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## MESSAGE FROM THE CHAIRMAN

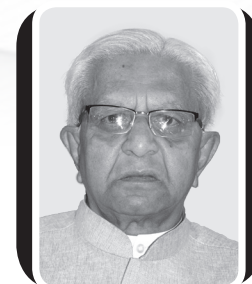
It's good to see that Vallabh Vidyanagar's first college has been publishing its college magazine since the very first year of its establishment in 1947. The students are fortunate to study in this prestigious college which has consistently performed well in all spheres and has set benchmarks for other institutes.

The college magazine is a good platform for the students to showcase their interest through writing. I hope this skill improves more as you all advance in education because you will be publishing papers in National and international journals. Therefore, students must make efforts to constantly keep their knowledge updated and seek guidance from the teachers of your college to make the right choices about your career.

I congratulate the Principal, the magazine committee and the faculty members for this issue.

My best wishes to all.

**Er. Bhikhubhai Patel**  
Chairman  
Charutar Vidya Mandal



## MESSAGE FROM THE HON. SECRETARY

The fact that, I am an alumnus of this great college gives me great satisfaction and fills my heart with the sense of pride when the college achieves new milestones. The practice of publishing the college magazine is a very useful one and I am very happy with the variety of articles. I congratulate Dr. Bhavesh Patel and his wonderful team in bringing out this magazine and I hope that in the years to come students will come out with even better articles.

My best wishes to all.

**Dr. S. G. Patel**  
Hon. Secretary  
Charutar Vidya Mandal



## MESSAGE FROM THE HON. JT. SECRETARY

I feel privileged and happy to write this message on the auspicious occasion of your college going to publish the Annual College Magazine. It won't be an exaggeration if I say that V.P. Science College is lucky to have a principal like Dr. Bhavesh Patel whose dynamic and active leadership has enabled the college to achieve new heights of achievement. It has been my observation that his energetic and enthusiastic team of Professors remains ready round the clock for any new academic pursuit. The team deserves equal appreciation because it is the fatigueless work of the team that makes impossible possible.

Annual College Magazine holds a mirror of the college and its students, reflecting the academic co-curricular, extra-curricular activities and creative genius of the students. I am confident that the students and staff would use this platform to share their knowledge through their articles and creative writing. It would ignite a spark in the young mind of young India to prove their talent.

I congratulate Dr. Bhavesh Patel and his team and express my best wishes for the brilliant issue of their college magazine

Sincerely yours,

**Shri Ramesh Talati**  
Hon. Jt. Secretary  
Charutar Vidya Mandal



## MESSAGE FROM THE PRINCIPAL

Dear Students,

I am very happy to see the rich variety of articles contributed by students. I always wished that my students should be happy and satisfied when they are in college. We have always tried to give you different platforms and opportunities to help you grow not just academically but also in other life skills. We really wish that even after leaving the college wherever you study and settle down you must keep your bonding and affinity with the college. It would be very good if you could mentor your juniors through training and placement.

Wish you all the best for your future.

**Dr. Bhavesh Patel**  
Principal



## MESSAGE FROM THE VICE PRESIDENT

It has been really an honor and privilege to be the Vice President of the College Central Committee. Students studying here are indeed blessed to find an opportunity to get education at one of the best colleges which has a healthy, harmonious ambience and rich values which have played pivotal role in shaping the future of innumerable students.

"The mind is not a vessel to be filled, but a fire to be kindled." Reflections, our College Magazine kindles the imagination of our learners. I congratulate the staff and students of all committees who used various mediums of expression to present their ideas. As long as our ideas are expressed and thoughts kindled, we can be sure of learning, as everything begins with an idea. I appreciate every student who experienced the joy of participation in co-curricular and extracurricular activities along with their commitment to academics. That little extra we do, is the icing on the cake. They say,

'Do more than belong – participate.

Do more than care – help.

Do more than believe – practice.

Do more than be fair – be kind.

Do more than forgive – forget.

Do more than dream – work.'

I take this opportunity to thank the Principal, the central committee, ex officios, student secretaries, members and all the staff and students for their support and cooperation throughout the year.

Dreams are free as are ideas... So do not be afraid to dream... and work hard to attain them, be happy and be successful my dear students.

☺**Good luck**☺

**Dr. J. P. Patel**  
Vice-President  
Students' Central Committee



## MESSAGE FROM THE EDITORS

The college has been publishing Annual Magazine since 1947 since the very first year of our college. The Editorial Board of the Institute proudly presents its unique creation in the form of the Annual Magazine 'Reflections 2018–2019'. This serves as a platform to highlight the literary activities and also highlights the educational, cultural and sports activities of the college.

Albert Einstein had said "Education is what remains after one has forgotten what one has learnt in school". To take this thought forward by involvement, students absorb a lot through participation and organizing various activities – experiencing triumphs and failures, successes and disappointments, moments of excitement... are all part of education that no text book can teach but will always be a part of their consciousnesses.

The College Magazine team working under the umbrella of Literary Club works to bring out the annual official student publication of the College. The editorial member team not only inspired the students to write articles but also suggest topics to students according to their inclinations and guide the students how to write on the topic, how to revise and finalize the article. Every year, the contribution of the students is increasing. This year about 130 students submitted their articles. We have selected about 90 articles. We are very pleased with the diversity in contributions.

Apart from the collection of articles on various topics Literary club organised many activities throughout the year like reading club, poetry recitation competition etc. And hope to conduct more activities under this banner.

At last, on behalf of Magazine Committee, we thank Dr Bhavesh Patel, Principal of our college for constantly inspiring us to publish this Magazine. We thank Dr J. P. Patel, Vice President of the Students' Central Committee and we also appreciate the efforts of Student Secretaries Manpreet Kaur and Danish Hirpara, other members of editorial board and many others for this magazine.

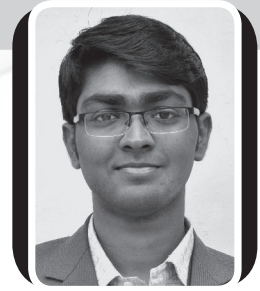
We extend warm wishes to all our readers. We need your feedbacks to improve the quality of the magazine.

We would like to take this opportunity to wish all the students the very best for all their pursuits in future.

**Dr. Anil R. Jivani**  
**Dr. Charudutt R. Gurjar**  
Editors



## MESSAGE FROM THE GENERAL SECRETARY



"Leadership is the capacity to translate vision into reality."

I am proud to be the General Secretary of V.P. & R.P.T.P. Science College, an esteemed and a highly prestigious college of Gujarat. Under the visionary of our respected Vitthalbhai Patel, our college has very successfully completed 72 glorious years spreading the light of knowledge and information in all directions. After seven decades we can proudly look back at the stupendous achievements.

It give me great pleasure to see my college, steadily achieving greater heights. This has been possible largely due the dynamic leadership of Dr. Bhavesh Patel, the college principal and my teachers.

I have been privileged to study here and be the G.S. of I thank the entire Central Committee and the Principal for this opportunity. All the best to all my friends.

**Jaykumar I. Prajapati**  
General Secretary

## MESSAGE FROM THE STUDENT SECRETARIES



This has been a year of self-discovery for us. Working as Magazine Secretaries have been a very good opportunity for us to grow and discover our hidden abilities. This has been the best experience of our college years.



Initiating the Reading Club has brought together students from different semesters and subjects, forming a community of like-minded students. Their bonding resulted in contributions in enriching the articles and other activities too. We are looking forward to seeing the club become more active and stronger in the future.

We are grateful to our Principal Sir, Dr. Bhavesh Patel, Dr. Charudutt Gurjar, Dr. A. R. Jivani, and all members of the Literary and Reading Club. Thank you all for making this a very satisfying year.

**Ms. Manpreet Kaur A. Pabla**  
Student Secretary  
Literary Club  
Students' Central Committee

**Mr. Denish Hirapara**  
Student Secretary

## 72<sup>nd</sup> Annual Report of the College Year 2018-2019

VP & RPTP Science College is the first Institute to be set up in this great township and is today one of the premier institutes run by Charutar Vidya Mandal. This college is one of the prestigious Science Colleges of state of Gujarat, inaugurated by Sardar Vallabhbhai Patel in 1947. It is aesthetically located with a beautiful architecture and lush gardens. The College has the unique honour of being adjudged as the best science college three times by the state government under the leadership of Shri R. P. Patel.

The College is also recognized as College with Potential for Excellence (CPE) twice by UGC. We have applied for the 3<sup>rd</sup> Cycle of NAAC Re-accreditation and the process is underway. AAA, KCG has reaccredited the college A+ with a CGPA of 3.28, which is a matter of pride for us.

The college is affiliated to Sardar Patel University and offers under-graduate courses in Pure and Applied Sciences. We also run vocational courses like Industrial Chemistry, Instrumentation and around ten add-on certificate courses. The college is a recognized research centre for Microbiology, Chemistry, Industrial Chemistry, Physics and Biology.

A total of 51 teaching faculties are working in different disciplines, out of this 33 have Ph.D. as highest qualification and 16 have M Phil as highest qualification.

The college is recognized for its well equipped laboratories, regular teaching, Wi-Fi campus, ICT enabled classrooms, library infrastructure, Canteen, hostels for boys and girls, play grounds, Gymnasium and above all an environment for overall growth and development of its students. The current academic year started on 12th June 2018. A total of 596 students were enrolled which included 313 boys and girls 425 boys and 264 girls are accommodated in our hostel this year.

An orientation programme on the first of the college has become a regular feature which is attended by all the new students and their parents. The programme gives the first year students all the necessary information about rules and regulations of College, so that they understand the system and perform better from very beginning of the session. This was followed by a counseling meeting with the students and their parents. Separate orientation was conducted for the weaker section students by Equal opportunity cell of College.

### Enrollment Date

FYBSc	SC	ST	OBC	EBC	Muslim	Phy.handi	Gen	Total	Drop.out
Boys	29	33	173	0	10	1	350	596	125
Girls	18	32	87	0	7	1	168	313	50
SYBSc	SC	ST	OBC	EBC	Muslim	Phy.handi	Gen	Total	Drop.out
Boys	16	7	102	0	5	0	244	374	
Girls	11	11	61	0	3	0	112	198	
TYBSc	SC	ST	OBC	EBC	Muslim	Phy.handi	Gen	Total	Drop.out
Boys	14	8	12	7	7	0	229	277	
Girls	9	13	14	1	2	0	133	202	

### GOLD MEDAL WINNERS AT UNIVERSITY LEVEL

I am proud to announce that this year the college students won 8 Gold medals. The winners are:

	Name	Subject
i	Mihir Sunilbhai Patel	Chemistry (3)
ii	Ushaben Rameshbhai Baraiya	Electronics
iii	Mohammad Shahnawaz	Botany
iv	Neelu Dharendra Rai	Instrumentation
v	Bhaktika M Sonagara	Physics

### Activities OF IQAC

The following are the activities of the IQAC

- Made preparations for NAAC Reaccreditation 3<sup>rd</sup> Cycle and applied for the same. Awaiting dates form NAAC for Peer team Visit.



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- Applied for AAA and got A+ Grade with a CGPA of 3.28.
- Signed an MOU with Holkar Science College, Indore, Madhya Pradesh.
- IQAC developing and maintaining institutional database for AISHE database and submitting in time to MHRD Gov. of India.
- Parents' and Teachers' feedback started,
- IQAC acting as a nodal agency of the Institution for coordinating quality-related activities, created Syllabi review committee to look over present syllabi to enrich with current academic innovations.
- Organized Exit meeting with T Y B Sc Students for personal feedback as well as to provide them opportunity to express their view about the College
- This year MHRD has invited applications for National Institutional Ranking Framework [NIRF], our college has applied for it by online data submission.

## Students' Achievements

No	Student's Name	Dept	Position	Event	level	Organized by
1	Mr. Vandan K Patel	Physics	Participant	Advanced B.Sc. (Physics) Summer programme	State	GSA Vikram Sarabhai Community Science Center & St. Xavier's College, A'Bad 12th May 2018 to 1 <sup>st</sup> June, 2018 (Three weeks)
2	Ms. Vrutika Patel & Ms. Vishva Shah	Physics	2 <sup>nd</sup>	Poster Presentation in "Science Manthan 2019"	State	P. D. Patel Institute of Applied Science, CHARUSAT, Changa on 5th January, 2019
3	Mahesh M Kurup	Ind. Chem (Voc)	2 <sup>nd</sup>	IC-Fest 2019 (Oral Presentation)	University	NVPAS IC-MEET
4	Kartik D. Mistry, Chhayan L. Savaliya Aishwarya B. Patel		2 <sup>nd</sup>	IC-Fest 2019 (Quiz)	University	
5	Kartik D. Mistry, Chhayan L. Savaliya Mahesh M Kurup		3 <sup>rd</sup>	IC-Fest 2019 (Poster Presentation)	University	
6	Divyesh Patel	BCA	1 <sup>st</sup>	Compu Carnival-2019	Inter College	VP & RPTP Science College
7	Kamaljit Baljitsingh Kour Chahat Surjeetkumar Sharma		2 <sup>nd</sup>		Inter College	
8	Harshil Hareshbhai Kakadiya	CS	2 <sup>nd</sup>	Compu Carnival-2019 Quiz Competition	Inter College	

## INDUSTRIAL EDUCATIONAL TOURS / TRAINING FOR STUDENTS / FIELD PROJECTS:

S No	Venue/Industry / Firm / Institute & Relevant Details	Department	Total Participants	Dates/Duration
1	A One Day Workshop At ARIBAS	Micro-Biology	60	7.9.18
2	Visited ISTAR		73	23.1.18
3	Two Day Workshop at SICART		73	6.2.19 & 7.2.19
4	College has sponsored training programme for TY B Sc. students at SICART.	Physics	58	8 <sup>th</sup> & 9 <sup>th</sup> Feb 2019
5	Mundra SEZ & Adani ports Ltd., Adani Power Ltd., Adani Wilmar Ltd., Mundra	Ind.Chem	38 students + 2 Faculty	3 - 4 Aug 2018
6	Alidhara Pharmaceuticals Pvt.	Ind.Chem	38 students + 3 Faculty	14 Sept 2018
7	S. Y. B.Sc Industrial Chemistry students under goes six week in-plant training at various chemical industries of Gujarat State.	Ind.Chem	60	1/5/2018 to 13/6/2018



8	Adani Foundation, Mundra – Gujarat	Chemistry	60	03/08/2018 (2 Days)
9	ARIBAS, NEW V V NAGAR	Chemistry	08	
10	SICART, V V NAGAR	Chemistry	110	
11	SICART, V V Nagar	Biology	14	1 day
12	Aromatic Plants Research Centre	Biology	14	1 day
12	Tops Technology, Ahmedabad	BCA	32	05-02-2019
14	Neurobytes, Udaipur	Comp. Sci.	29	16-02-2019

## Placement Cell

### Activities Conducted

S No	Activity/Title	No. of Students	For	Organized by	Dates/Duration
1	Guest talk on Employability Skills Training By. ROOPALI SAXENA	165	TYBSc Students	Placement Cell	2 HOURS
2	Guest Talk on A LATK ON Recent trend in Innovation, Debasis Chatterji	200	TYBSc Students	Founder and CEO, Priceeagle. in, Hybrid Mind India Pvt.Ltd. Hyderabad,	21 JANUARY, 2018

**Job Placements:** 165 Interested Students had applied for Job Placement. Out of which the 19 have been selected

S No	Student	Dept	Firm/Company	Post Offered	Month & Year	Remark	Package
1	Yadav R Balvant	MICRO	Genibag Solutions Ahmedabad	Marketing	05/02/2019	Short listed In Mega Job Fair	Not declared
2	Patel Keyuri Nishit	MICRO	Genibag solutions Ahmedabad	Marketing	05/02/2019	Short listed In Mega Job Fair	Not declared
3	Rayat Dinkalkaur Harjindersingh	MICRO	Genibag Solutions Ahmedabad	Marketing	05/02/2019	Short listed In Mega Job Fair	Not declared
4	Chitara Dimple Rajeshkumar	MICRO	Genibag Solutions Ahmedabad	Marketing	05/02/2019	Short listed In Mega Job Fair	Not declared
5	Raval Yamini Rameshbhai	MICRO	Genibag Solutions Ahmedabad	Marketing	05/02/2019	Short listed In Mega Job Fair	Not declared
6	Ramnani Juhi Deepak	MICRO	Genibag Solutions Ahmedabad	Marketing	05/02/2019	Short listed In Mega Job Fair	Not declared
7	Brahmbhatt Nilkumar Ghanshyambhai	Chem.	Trokia Pharmaceutical. Vadodara	Medical Representative	05/02/2019	Short listed In Mega Job Fair	Not declared
8	Sharma Ketulkumar Bharatbhai	Chem.	Trokia Pharmaceutical. Vadodara	Med. Representative	05/02/2019	Short listed In Mega Job Fair	Not declared
9	Parmar Jignesh Alpeshbhai	Chem.	Trokia Pharmaceutical. VADODARA	Medical Representative	05/02/2019	Short listed In Mega Job Fair	Not declared
10	Thakor Jaydeep Ranjitsinh	Chemistry	Trokia Pharmaceutical. VADODARA	Medical Representative	05/02/2019	Pre selection In Mega Job Fair	Not declared
11	4 Students	Chem.	Praksh Inter. Chemicals Ltd., Vadodara		29/01/2019	shortlisted.	shortlisted. Package 1.8/pa
12	Tapan Manharbhai Fefar	Chem.	Reliance Industry Ltd., Jamnagar		30/01/2019.	shortlisted.	shortlisted. Package 1.8/pa
13	4 Students	Chem.	Alembic Chemical Ltd, Vadodara		12/02/2019	shortlisted.	2.4 Lacs

### Appointments / Selection/ Nominations

S No	Faculty	Department	Appointment/Selection/ Election	Organization
1	Dr Bhavesh Patel	Principal	Syndicate Member (2018-21)	Sardar Patel University
			Dean, Faculty of Science (2018-21)	Sardar Patel University



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2	Dr Nikunj Bhatt	Biology	Selected for Prestigious IUCN –CEC	The International Union for Conservation of Nature
		Biology	External Referee	Veer Narmad south Gujarat University and
		Biology	External Referee	M K Bhavnagar University
		Biology	Mentor Trainer for Government college	AAA, KCG, Gandhinagar
		Biology	Reviewer	Elsevier
3	Dr C R Gurjar	English	External Expert Member in Communication Skills BoS	BVM Engg. College, V V Nagar
4	Dr. B. C. Dixit	Chemistry	Appointed as an External Expert in the Member of Board of Studies	Faculty of science-(UG & PG), Ganpat University, Ganpat Vidyanagar

## Achievements of Faculty

S No	Name	Dept	Award Name / Appointments/ Selection	Level	Agency	Month & Year
1	Dr. Minaxi Vkumar	Electronics	Awarded Dolarrai Mankand Award for "Excellence in Research" by Saurashtra University	State	IQAC of Saurashtra University	2018
2	Dr.N.B.Bhatt	Biology	CVM Gaurav Purskar	-	CVM	3 <sup>rd</sup> March 2018
3	Dr C R Gurjar	English	Was among the 30 faculties of Gujarat selected to visit UK for a 10 day International FDP	International	UK & College	28 <sup>th</sup> Nov – 8 <sup>th</sup> Dec 2018

## PhDs Awarded

S No	Student	Title	Department	Guide
1	Keyurkumar A. Kamani	Design, Synthesis and Pharmacological Evaluation of Nitrogen and Oxygen Containing Hybrid Heterocyclic Compounds	Chemistry	Dr. K. D. Patel

## PhD Students Registered by the Faculty

S No	Student	Department	Guide	Registration No & Date
1	Mr. Mo. Abrar H. Malek	Ind. Chemistry	Dr. P. M. Patel	1597/ 7-3-2018
2	Vivek Makavana	Chemistry	B C Dixit	25/02/2018
3	Divyangi Thaker	Biology	Dr.N.B.Bhatt	181073 3/10/2018
4	Mr Bhavin Mahida	ELT	Dr C R Gurjar	1591 - 8/3/2018
5	Miss Shabnam Lohani	ELT	Dr C R Gurjar	1626 12/3/2018
6	Miss Twinkle Barot	ELT	Dr C R Gurjar	1588 15/3/2018

## Publication In UGC approved Journals

Faculty	Department	Title of paper	Journal Name with ISSN No	Year	H Index
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Dr. Minaxi VKumar	Electronics	"Study of electron impact inelastic scattering of chlorine molecule (Cl <sub>2</sub> )" (2018)	J. Phys. B: At. Mol. Opt. Phys. 51(045201) ISSN: 09534075	2018	23 Citations:1208 (Google Scholar) 1011 (Research Gate)
		"Electron impact scattering study of hypohalous acids HOX (X = F, Cl, Br, I)" (2018)	AIP Conference Proceedings 1953, 140106 ISSN: 0094243X	2018	
		"Computation of Electron Impact Scattering Studies on Benzene" 2018.	Eur. J. Phys. D 72, 210 ISSN: 14346060	2018	
		"Women's participation in sustainable development of India through higher education"	JETIR, 8(11)149 ISSN: 2349-5162	2018	
		"Women and Physics"	JETIR, 5(11)169 ISSN :2349-5162	2018	
Dr Pravin M Patel	Ind. Chemistry	Role Of Dendrimer In Drug Solubilisation – A Review	Drug Delivery Letters 2210-3031	2019	3
Dr J P Patel	Biology	Isolation of region specific bacteria and its application on some important crop plants in Kumbhalmer (NG)	International Journal of Agricultural Science 0975-9107	2018	
Mr. Ashish Joshi	BCA	Comparative Study of Different Classification Algorithms for Stream Data Mining Using MOA	International Journal of Computer Sciences and Engineering, Vol.-6, Issue-11, Nov 2018 E-ISSN: 2347-2693	2018	

## Books Published

S No	Faculty	Dept	Title	ISBN/ISSN No.	National /International	Academic year
1	All Faculty	Physics	College Physics Semester-1	978-93-85138-15-7	National	2018-19
2	All Faculty	Physics	College Physics Semester-2	978-93-85173-62-2	National	2018-19
3	All Faculty	Biology	Genetics, tissue culture and General biology	978-93-85173-65-3	National	2018-19
4	All Faculty	Biology	Cell biology and Biodiversity	978-93-85173-45-5	National	2018-19

## Chapters Published

S No	Faculty	Title	Title of the Book/ Course	ISBN/ISSN no	Publisher	National / International
1	Dr. B. C. Dixit & Dr M K Valand	Alkyl & Aryl Halide	Gen. Chemistry – 2	978-93-85137-63-9	Atul Prakashan, Ahmedabad	National
2	Dr. B. C. Dixit	Alkane, Alkene & Alkyne	Gen Chemistry – 1	978-93-85138-16-4	Atul Prakashan, Ahmedabad	National
3	Dr. K. D. Patel	Unit 3A: Chemistry of d-Block Elements	Gen. Chemistry – 2	978-93-85137-63-9	Atul Prakashan, Ahmedabad	National
		Unit 3B: Fundamental Concept of Co-ordination Chemistry	Gen Chemistry – 1	978-93-85138-16-4	Atul Prakashan	National
4	Dr. G. M. Patel	Ionic equilibria in aqueous solution	Gen Chemistry – 1	978-93-85138-16-4	Atul Prakashan	National

## Paper/Poster Presentations



# Reflection 20<sup>18</sup><sub>19</sub>

S No	Faculty	Dept	Title with ISBN of proceeding	Event	Level	Organizer & Sponsor	Venue
1	Dr Bhavesh Patel	Principal	"Institutional Development through Students Empowerment Strategies (StEpS) - A case study	National Seminar Rejuvenation of Undergraduate Education in India August 10-11, 2018	National	Centre for Educational and Social Studies (CESS) in collaboration with NAAC, AIU and Karnataka State Higher Education Council (KSHEC)	Bangalore
2	Dr Nikunj Bhatt	Biology	"Improvisation of students' efficiency in learning progression through e-content development in related course structure"	National Seminar, Organised by NAAC	National	IISc ,Banglore	Bangalore
3	Ms. Vanita M. Patel	Micro-Biology	Oral presentation	National Conference on Current Trends in Biological Sciences"	National	Dept. of Bio Sciences, S.P. University. UGC Sponsored	M.P Patel Auditorium, S.P.U
4	Dr Minaxi Vinod Kumar	Electronics	1. Theoretical investigations of electrons impact on perfluoroketone (PFK) molecules CXF <sub>2</sub> XO (X=1-5) – inelastic effects 2. Electron impact scattering study on acetone (C <sub>3</sub> H <sub>6</sub> O) 3. Dissociative electron attachment study with halogen targets 4. Low energy electron impact scattering study on Chlorine molecule (Cl <sub>2</sub> )	13th Asian International Seminar on Atomic and Molecular Physics, Dec. 5-8,2018	National	TIFR, Mumbai IIT Mumbai	TIFR, Mumbai IIT Mumbai
			5. Women and Physics (oral) 6. Women's participation in sustainable development of India through higher education (oral)	2 <sup>nd</sup> International Conference on Women in Science and Technology creating sustainable Career, June 2018	International	CVM	BVM, Vallabh Vidyanagar
			7. Electron driven processes for plasma feed gases 8. Dissociative electron attachment cross sections for Di-Tri atomic molecules (Invited Talk)	Joint ICTP-IAEA School and Workshop on Fundamental Methods for Atomic, Molecular and Material Properties in Plasma	International	organized by ICTP, Trieste, 16-20 April.,2018	ICTP, Italy
			9. Dissociative electron attachment study of di & tri atomic molecules" (Poster)	XXXII Gujarat Science Congress 2018 (GSC-2018)	State	CSIR-CSMCR I / 4-5 February 2018	Bhavnagar University, Bhavnagar



6	Dr. Chirag M Patel	IC	Paddy Straw-Based Polyols Through Liquefaction: Liquefaction Temperature And Catalyst Concentration Optimisation	Poster Presentation 28 <sup>th</sup> January 2019	National	Department of Chem GUJCOST Book of Abstract & Souvenir	V. P. & R. P. T. P. Science College
7	Dr. Jaimin D. Bhatt	IC	Green synthesis of pyrimidines in ionic liquid and their potency as malarial antifolates for dhfr inhibition		National		
8	Mr. Mo. Abrar H. Malek	IC	Dendrimer: A Recent Trend		National		
9	Dr B C Dixit	Chemistry	Stereo selective synthesis of 2,3-disubstituted quinoxaline-4(3H)-ones derived from alanine linked sulfonamide in ionic liquid as potent DHFR inhibitor	Conference (GUJCOST Sponsored National Conference entitled Medicinal Chemistry at the interface of 21 <sup>st</sup> Century: An Indian Perspective)	National		Chem Dept, V. P. & R. P. T. P. Science College, V V Nagar
10	Dr K D Patel		Green Synthesis of Pyrimidines in Ionic Liquid and their Potency as malarial antifolates for DHFR inhibition	Conference (GUJCOST Sponsored National Conference entitled Medicinal Chemistry at the interface of 21 <sup>st</sup> Century: An Indian Perspective)	National	(GUJCOST Sponsor Chemistry Department,	V. P. & R. P. T. P. Science College, V V Nagar
11	Dr T K Darji		Exposure to chemicals in cosmetics and women's health.	Women in science and technology: creating sustainable career.	International	BVM Engineering College .	BVM Engineering College, V.V. Nagar
12	Dr T K Darji		Glass Fiber Reinforced Polymer Composite based on Epoxy Ester of Resacetophenone-Fluorspar	Medicinal plants at the interface of 21 <sup>st</sup> Century: An Indian Pererspective	National	V.P. AND R.P.T.P. SCIENCE COLLEGE	28-01-2019
13	Dr. Vipul Kataria		Green synthesis of pyrano[2,3-c]pyrazole	Conference on inclination of modern science toward environmental protection and sustainable development	National	Indian science congress (Baroda chapter) & Bahauddin science college, Junagadh	Bahauddin science college, Junagadh
14	DR. M. J. Patel		o-amino thiophenol and dicarboxylic acid derived cu(II) complexes havig N2S2 potential donor ligands with their spectral, biological evaluation.	Medicinal plants at the interface of 21 <sup>st</sup> Century: An Indian Pererspective	National	V.P. & R.P.T.P. Science college	28-01-2019
15	Mr A K Patel		Mixed ligand of 3d elements , synthesized and characterization			National	V.P. & R.P.T.P. Science College



# Reflection 20<sup>18</sup><sub>19</sub>

16	Dr C R Gurjar	English	Challenges of teaching English in Govt. Secondary Schools	ELT in India: Multiple Readings	National	National Dept of English	
17	Dr C R Gurjar	English	Relevance of ELP Course for the Students of Law in the Universities of Gujarat	ELT in India: Multiple Readings	National	Veer Narmad South Gujarat University, Surat 12 Feb 2019	
18	Mr. L. M. Katara	Library	Libraries Beyond Borders: Innovative Trends, Issues And Challenges In Knowledge Dissemination. ISBN: 978-81-927390-4-5	34 <sup>th</sup> Library Conference of Gujarat Granthalaya Seva Sangh	National	Gujarat Grathalaya Seva Sangh A'bad	Ambaji 24 - 26, February 2018
19	Mr. Ashish Joshi	BCA	Optimizing Transportation cost using real-time data analytics.	International conference on "Emerging Global Economic Situation: Impact on Trade and Agribusiness in India".	International		Organized by BJVM & Agro-economic research centre. Dt: 28, 29-8-2018 V.V.Nagar
20	Mr. Ashish Joshi	BCA	Real Time Data Mining: Minimizing Transportation Cost Using Resource Availability Constraint.	National Conference on "Emerging Trends in computer science and information technology".	National	Shree K.P. Dholakiya Infotech Mahila College -	IQAC - Saurashtra University. Amreli Dt:30-12-18

## Research Projects:

Faculty	Title	Dept	Type	Amount	Agency	Duration	Status
Dr. Minaxi Kumar	Theoretical investigation of scattering phenomenon for targets of varied interest over an extensive range of energies"	Electrical	Major	19,37,636/-	DST-SERB	Three years [April, 2017 – March, 2020]	On going
Dr V. Kataria	Synthesis & Biological Evaluation of some novel pyridine and pyrimidine related compounds	Chem	Seed Money Grant	72000/-	SPU	2018	Completed
Ms M K Patel	Studies of Morphological & Divergence in Orb weaving Spiders from the Kanewal- The Wetlands of National Importance	Biology	Seed Money Grant	57000/-	SPU	2018-19	Completed
Dr Rajiv Bhatti	Studies of Aian diversity and seasonal adundance at the Pariej and Kanewal - The national importance	Biology	Seed Money Grant	50000/-	SPU	2018-19	Ongoing

## Workshops/Seminars Organized:

Title	Department	Level	Collaboration (If Any)	Sponsored by	Participants
"One Day Workshop on Condensed Matter Physics" on 13/08/2018.	Physics	State	No	V.P. & R.P.T.P.Science College	120
National Conference Entitled Medicinal Chemistry at the interface of 21 <sup>st</sup> Century: An Indian Perspective	Chemistry	State	GUJCOST	V.P. & R.P.T.P. & GUJ-COST	290

## Workshops/ Seminars Attended

(If you have mentioned this in **Paper Presentation**, please don't mention here)

Faculty	Title	Dept	Level	Venue	Conducted by /Collaboration (If Any)	Sponsored	Date
Dr Bhavesh Patel	Principal's Meet	HRDC	Local	SPU	HRDC,SPU	HRDC	25/7/18
Ms. S. K Menon and Ms. V.M.Patel	One day workshop on 'The art and Science of counseling – boon to staff and students'.	Micro Biology		BVM	Women Development Cell, CVM	Women Development Cell, CVM	23/6/18
Ms. S.K.Menon Mr. A. A .Shukla Mr. S. A .Shaikh Ms. V.M.Paatel	Three day faculty development programme on ' what every teacher should know for bringing out the best from their students'.			IRMA	IRMA	V.P. Sci. Coll	19/11/18 to 21.11.18
Mr. S.A. Shaikh & Ms. V.M. Patel	Three day workshop on FT,NMR, GC,MS. FTIR,HPLC,FEG-SEM/TEM &XRD			SICART	SICART.V V Nagar	V P Science College & SICART-VV Nagar	18.12.18 To 20.12.18
Prof L K Chauhan	Workshop on "FT-NMR, GC-MS, FTIR, HPLC, FEG-SEM/TEM & XRD"	Physics	local	SICART-Vallabh Vidy-anagar	V P Science College & SICART-Vallabh Vidy-anagar	V P Science College & SICART-VV Nagar	18/12/2018 to 20/12/2018
Prof L K Chauhan	One day workshop on "Understanding Higher Scale: A Qui Vive Need"	Physics	Uni	S P Uni. Vallabh Vidy-anagar	Sardar Patel Area Teachers' Association (SPUATA) VVN	SPUATA, V V Nagar	17/02/2019
Dr. T. B. Darji	Workshop on The Art and Science of Counselling – Boon to staff and Students		Local	BVM Engineering College, V. V. Nagar	-	WDC-CVM, V.V. Nagar	23-06-2018
Dr. T. B. Darji Dr. Vipul Kataria Dr. G. M. Patel	What Every Teacher should Know for Bringing out the Best from their Students		IRMA, Anand.	-		19-21 Nov-2018	IRMA, Anand.
Dr. T. B. Darji	Symposium on Women and Environment.		BVM Engineering College, V. V. Nagar	-	VNC and CVM-WDC, V.V. Nagar	05-10-2018	BVM Engineering College, V.V. Nagar
Dr. T. B. Darji	Workshop on FT-NMR,GC-MS, FTIR, HPLC, FEG-SEM/TEM & XRD.		SICART	-	SICART, V. V. Nagar	18-20 Dec-2018	SICART, V. V. Vagar
Dr Vipul Kataria	Workshop on FT-NMR,GC-MS, FTIR, HPLC, FEG-SEM/TEM & XRD.		SICART	.....	SICART, V. V. Nagar	18-20 Dec-2018	SICART, V. V. Vagar
Dr. B. C. Dixit	Workshop on FT-NMR,GC-MS, FTIR, HPLC, FEG-SEM/TEM & XRD.		SICART	.....	SICART, V. V. Nagar	18-20 Dec-2018	SICART, V. V. Vagar.
Dr. B. C. Dixit	WORKSHOP FOR FRAMING OF SYLLABUS OF III TO VI SEMESTER		M.B. Patel Science College	BoS in Chem.	CES ,nand	06-08-2018	M.B. PATEL Science College



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Dr R H Parab	International Faculty development program		S P University	UK INDIA education	Coordinated by KCG	3 DAYS	S P University
Dr R H Parab	What every teacher should know for bringing out the best from their students		IRMA, Anand	-	IRMA	19-21 NOVEMBER, 2018	IRMA, Anand
Dr R H Parab	"Medicinal Chemistry at the interface of 21 st century: An Indian perspective"		V P & R P TP SCI. COLL.	-	GUJCOST	28/2/2019	V P & R P TP Science College
Dr. M. J. PATEL	What Every Teacher should Know for Bringing out the Best from their Students		IRMA, Anand.	-		19-21 Nov-2018	IRMA, Anand.
Dr. M. J. PATEL	Workshop on FT-NMR, GC-MS, FTIR, HPLC, FEG-SEM/TEM & XRD.		SICART,	.....	SICART, V.V.Nagar	18-20 Dec-2018	SICART, V V Nagar.
Dr M K Valand	WORKSHOP FOR FRAMING OF SYLLABUS OF III TO VI SEMESTER		M.B. PATEL SCI. COLL	BoS In Chem, S.P.U.	CES, Anand	06-08-2018	M.B. Patel Science College
Dr M K Valand	MEDICINAL CHEMISTRY AT THE INTERFACE OF 21 <sup>st</sup> CENTURY : AN INDIAN PERSPECTIVE		V.P. AND R.P.T.P. Science College	.....	GUJ COST	28-01-2019	V.P. AND R.P.T.P. Science College
L.M. Katara	Faculty Development Programme	Lib	State	Anand D.N.Patel P.G. Studies			
Mr. Aashish Joshi	2 day workshop on "Python"	BCA	State	V.V.N	-	ISTAR	10 & 11-08-2018.
Mr. R H Sadhu	Emerging Global Economic Situation: Impact on Trade and Agribusiness in India	C S	International	V.V.Nr	-	BJVM, VVN	September 28- 29, 2018

## Guest Talks Arranged

Speaker	Department	Topic	Organization	Designation	Date
Mr. Viral Mistry	Mathematics & Statistics	"Mathematics Models"	The Undel High School, Undel	Teacher	22/12/2018
Prof. N. K. Bhatt	Physics	Einstein's Legacy: The LASER-101 Not Out...	Physics Department, V.P. & R.P.T.P. Science College	Professor, Department of Physics, M.K.Bhavnagar University, Bhavnagar	13/08/2018
Prof. K. D. Patel	Physics	Physics at Nano Scale through Electronics	Physics Department, V.P. & R.P.T.P. Science College	Professor, Department of Physics, S. P. University	13/08/2018
Dr. B.Y. Thakore	Physics	Solar Orbits & Basic Astronomy	Phy. Dept, V.P. & R.P.T.P. Sci. College	Director, C.C.Patel Comm. Sci Center & Professor Physics Dept. S. P. University	20/07/2018
Prof Vinodkumar	Physics	Contribution of Sir C V Raman in Physics	Phy. Dept, V.P. & R.P.T.P. Science College	Head, Dept of Physics, S. P. University	26/12/2018



Mr. Hardik Soni		Present Scenario of Polymer Industries	Schulman Plastic India Pvt. Ltd., (US based company)	Executive R&D	26 <sup>th</sup> July 2018
Dr. Chintankumar J Patel		Automotive Coating to Meet the Current and Future Needs of Global Market	BASF India Ltd., Mangalor, India		27 <sup>th</sup> July 2018
Dr. Vishnu A Patel	Ind. Chem.	Flow Properties of Powders	A R College of Pharmacy, V V Nagar	Associate Professor	3 <sup>rd</sup> August 2018
Dr. M S Bhakhar		Fluid Mechanics and Heat transfer	Dept of Chem Engg, GCET, V V Nagar	Professor	15 <sup>th</sup> September 2018
Dr. Rohit H. Dave		Separation Techniques	ISTAR	Associate Professor	26 <sup>th</sup> September 2018
Dr. Mandar K. Karve		Mass transfer Operation	ISTAR	Associate Professor	15 <sup>th</sup> September 2018
Prof. Dharmesh Ka Patel		Basics of Process Control	Dept of Chem Engg, GCET, V V Nagar	Professor	12 <sup>th</sup> January 2019
Dr. J. V. Patel		Present scenario of chemical industries in india.	ISTAR	Head of Department of Industrial Chemistry	8 <sup>th</sup> February 2019
Dr. K. I. Patel		Introduction to Polymers	ISTAR	Head of Dept of Surface Coating Technology	16 <sup>th</sup> February 2018
Dr. M. M. Raj		Ind. Polymers and its App.	ISTAR	Head of Dept of Polymer Science & Technology	15 <sup>th</sup> February 2019
Dr. Niraj Patel		Chemistry	Pericyclic Reaction	Organic Chemistry Department, ISTAR	Assistant Professor
Dr R N Jadeja	Chemistry	158 <sup>th</sup> Birth Anniversary celebration, of Late Acharya Prafull Chandra Ray, an Indian ancient scientist.	Chemistry Department, M S University, Vadodara	Associate Professor	3 <sup>rd</sup> August 2018
Dr. D. I. Brahmhatt	Chemistry	NMR SPECTROSCOPY	Department of Chemistry, SPU	Retd. Professor & Head,	23 & 24 <sup>th</sup> July 2018
Mr. Parag Patel	BCA	RED HAT – LINUX	PRAKSHAL INFOTECH PVT. LTD.	RED HAT TRAINER	09-07-2018
Ms. Kinnari Patel	BCA	Internet Marketing & 3D Animation	ITC – ANUPAM MISSION – MOGRI	Sr. Faculty	17-12-2018
Mr. Parag Patel	Comp. Sci	RED HAT – LINUX	PRAKSHAL INFOTECH PVT. LTD.	RED HAT TRAINER	09-07-2018
Ms. Kinnari Patel	Comp. Sci	Internet Marketing & 3D Animation	ITC – ANUPAM MISSION – MOGRI	Sr. Faculty	17-12-2018

## Events organized by the Department (Other Than Guest Talks)

Event and Date	Department	Level	Organizing agency & or Collaboration (if any)	No of participants students
Prof. A R Rao Mathematics Competition for T Y B Sc students	Mathematics	State	Prof. A R Rao Foundation, Gujarat Ganit Mandal, Ahmedabad	100
Prof. A R Rao Mathematics Competition for S Y B Sc students		State	Prof. A R Rao Foundation, Gujarat Ganit Mandal, Ahmedabad	70
National Mathematics Day Celebration		Local	Dept. Mathematics, V P Sci. College	60
Wetland Day Celebration 2/2/2019	Biology	Local	Biology Dept	59
Zoo Fest 15/02/19	Biology	Local	Biology Dept	
Cyber Security – 2019 (awareness program)	CS & BCA	VP & RPTP Science College	CS & BCA	500
Compu Carnival – 2019	BCA & CS	VP & RPTP Sciebcce College	BCA & CS	176



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## Students 'Participation in various Competitions/ Seminars

Event	Name(s) / Total Students	Dept	Level	Organizer	Venue
Participated in photography competition at Science Manthan,	Mr. DhruvKapdi , Mr. YashGohil and Ms. RoshniYadav	Micro- Biology		CHARUSAT, Changa	Changa
Participated on poster presentation competition at science manthan, Changa	Ms. Juhi Shah and Ms. Keyuri Patel		State	CHARUSAT, Changa	Changa
Participated in article writing competition	Ms. Aquino Alex		State	J & J SCIENCE COLLEGE, Nadiad	Nadiad
Participated in poster presentation competition	Ms.Juhi Shah			J & J SCIENCE COLLEGE	Nadiad
Participated in bio quiz competition	Ms. Anam Vohra and Ms. Trusha			J & J SCIENCE COLLEGE	Nadiad
Prof. A R Rao Mathematics Competition for S Y B.Sc. Students	15 Students	Mathematics & Statistics	State	Prof. A R Rao Foundation, Gujarat Ganit Mandal, Ahmedabad	V P & R P T P Science College
Prof. A R Rao Mathematics Competition for T Y B.Sc. Students	10 students		State	Prof. A R Rao Foundation, Gujarat Ganit Mandal, Ahmedabad	
5 <sup>th</sup> State level workshops on Problem solving & Enrichment in Mathematics	1 student		State	St. Xavier's College, Ahmedabad	St. Xavier's College, Ahmedabad
Madhava Mathematics Competition	5 students		National	Madhva Foundation	N V Patel Pure and applied Sciences, V V Nagar
Spoken tutorial	18		National	IIT, Bombay	V P & R P T P Science College, V V Nagar
Power point Present	6		State	GSA-VVN chapter, V P Sci. and C C Patel Community Science Centre, SPU	
Poster presentation	20	State	GSA-VVN chapter, V P Sci. and C C Patel Community Science Centre, SPU		
Working Model in Mathematics	12	State	GSA-VVN chapter, V P Sci. and C C Patel Community Science Centre, SPU		
National Graduate Physics Examination (NGPE-2019) on 20/01/2019, Sunday	31	Physics	National	Indian Association of Physics Teachers (IAPT)	V.P. & R.P.T.P. Science College, V.V.Nagar
Advanced B.Sc. Physics Summer Programme test on 02/03/2019.	40		State	Gujarat Science Academy, Vikrambhai Sarabhai Community Centre, Ahmedabad	
Conference on 'Medicinal Chemistry at the Interface Of 21 <sup>st</sup> Century: An Indian Perspective'	10	Chemistry	National	"Chemistry Department V. P. & R. P. T. P. Science College on 28 <sup>th</sup> of January 2019.	V.P. & R.P.T.P. Science College, V.V.Nagar
Hands on training of Sophisticated Instrument	120 Students of T. Y. B. Sc[IC]& T. Y. B. Sc. [ICV]		College	V. P. Science College and SICART	SICART, VVN
Working Model	Chirag Patel & Vismit Parmar [F. Y. B. Sc. ICV]		Inter- College	Science and Knowledge Club, V. P. & R. P. T. P. Science College	V.P. & R.P.T.P. Science College, V.V.Nagar



Working Model	Shilp Darji & Maulesh Patel [T. Y. B. Sc. ICV]	Chemistry	Inter-Collegiate	Science and Knowledge Club, V. P. & R. P. T. P. Science College	V.P. & R.P.T.P. Science College, V.V.Nagar
Oral Presentation	Uttam Dixit [T. Y. B. Sc. IC]		Inter-Collegiate		
POSTER COMPETITION	02 STUDENTS PARTICIPATED IN AT SCIENCE MANTHAN-2019				CHARUSET UNIVERSITY, CHANGA
50 students participated	Compu Carnival 2019	BCA	Inter College	VP & RPTP Science College	V.V. Nagar
5 Students Participated	Technokhoj-19	BCA	Inter College	VP & RPTP Science College	V.V. Nagar
12 Students Participated	Ignite (different competitions)	BCA	Inter College	ISTAR	V.V. Nagar
4 students participated	Science Carnival 2019	BCA	State Level	CHARUSAT	Changa
1 students participated	Python workshop	BCA	State Level	VP & RPTP Science College	V.V. Nagar
36 students participated	Compu Carnival 2019	CS	Inter College	VP & RPTP Science College	V.V. Nagar
8 Students Participated	Technokhoj-19	CS	Inter College	ISTAR	V.V. Nagar

## NAAC /AAA PEER TEAM VISITS by Principal Dr Bhavesh Patel

S No	Position	Place	Period
1	NAAC team member coordinator	Kandaswami Kandar's College, Velur Namakkal, Velur, Tamil Nadu	5-6 April, 2018
2	NAAC team member	N B Mehta Valwada Science College, Bordi, Maharashtra	22-23 June, 2018
3	NAAC team member coordinator	Lokmanya Tilak Science and Commerce College, Ujjain, Madhya Pradesh	8-9 October, 2018
4	Member Academic and Administrative Audit	P D Patel Institute of Applied Sciences (PDPIAS), CHARUSAT University, Changa	14th Sept, 2018
5	Member Academic and Administrative Audit	"Department of Electronics and Communications, CHARUSAT University, Changa	14th Sept, 2018

## Faculty as Guest Speakers/Visiting Faculty

S No	Faculty	Topic	Institute	Dates
1	Mr L M Katara (Visiting faculty)	Library Cataloguing	Department of Library and Information Science S.P. University	2018-19
2	Dr. B. C. Dixit		Guest Faculty, M. Tech., Sem I, B V M College, V V Nagar	
3	Dr. B. C. Dixit	Medicinal Chemistry	N V Science College, V V Nagar	25/7/2018
4	Dr. B. C. Dixit	Nucleic acids and their derivatives	A R Parikh Science College, Petlad	20/01/2019
5	Dr Vipul Kataria		Nano science Dept, Saurashtra University, Rajkot	

## Invited Talks/ Resource Person/ chairing a session

S No	Faculty		Dept	Event	Level	Institute / Venue
1	Dr Bhavesh Patel	"Innovation, Best Practices and its impact"	Principal	One Day NAAC sponsored workshop for Non Accredited colleges.	Intra-University	Sardar Patel University, February 20, 2019 VVN



# Reflection 20<sup>18</sup><sub>19</sub>

2	Dr. Minaxi V.kumar	Dissociative electron attachment cross sections for Di-Tri atomic molecules (Invited Talk)	Electronics		International	International Centre for Theoretical Physics, Trieste, ITALY(16-20 April 2018)
		Chaired Session		International workshop on Atomic and Molecular Collisions	International	10-12 Dec., 2018
		Selected as Referee by Indian Society of Atomic and Molecular Physics to evaluate "Best Thesis Award"			International	2019
		Reviewed Research Paper in two International Peer reviewed Journals 1) Journal of Electron Spectroscopy and related phenomenon 2) Plasma Source Science and technology			International	2018
3	Dr Nikunj Bhatt	New Methodology of Accreditation	Biology		Local	B. N. Patel Institute of Paramedical Sciences, Anand
4	Dr Nikunj Bhatt	New Syllabus of Biology	Biology		State	IITE, Gandhinagar
5	Dr Nikunj Bhatt	Documentation for the new methodology for Accreditation by NAAC"	Biology	NAAC Sponsored Seminar on New Accreditation Process	State	C P Patel Commerce College, Anand
6	Dr Nikunj Bhatt	Implementation of New Syllabus of NCERT in toto"	Biology		State	IITE Gandhinagar
7	Dr C R Gurjar	Role of Students as Primary Stake Holders in Quality Assurance	English	NAAC Sponsored Seminar on New Accreditation Process	State	C P Patel Commerce College, Anand

## Add-on Courses

S No	Department	Faculty	Title	Total Students
1	Biology	Dr.N H Brahmbhatt	Science and Spirituality	51

## IAS Coaching for entry in services CLUB

S No	Activity	Topic	Speaker	Organization	Date
1	orientation programme	ABC of UPSC Civil Services Examinations	Ms. Shobhana Menon	faculty CVM IAS Academy	7-8-2018
2	Guest Talk	Motivation	Mr Chaitanya Sanghanai	Deputy Mamlatdar, Anand	01-08-2018
3	Informative Talk	ABC of Banking Examinations	Mr. Chiragbhai Patel	Director of Dhyey Academy	
4	Guest Talk	Overview of UPSC Civil Services Examination	Mr. Amavbhai Dave and Mr. Pradipbhai Solanki	Faculty Members of SPIPA, Ahmadabad	8-2-2019

## Miscellaneous (Any Other not covered earlier)

S No	Faculty	Department	Details
1			RFID Facility started in college Library, the first in SP University
2.	Ms. S.K.Menon	Microbiology	Acted as judge in Mehndi Competition organized by fine arts club, V.P. Science college
3	Ms.V.M.Patel		Acted as judge in Hairstyle Competition organized by fine arts club, V.P. Science college

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4	Dr P M Patel	Physics	Work as a Convener, Syllabi committee of Physics, Sardar Patel University, Vallabh Vidyanagar, (2018-19)
5	Dr P M Patel	Physics	Work as Centre Coordinator, S P University Examination March/April 2018
6	Dr B C Dixit	Chemistry	Appointed as a Judge of the Science Manthan 2019 organized by CHARUSAT in association with GUJCOST at P D Patel Institute of Applied Sciences, CHARUSAT, Changa - 388 421, Gujarat on 5 <sup>th</sup> January 2019.
7	Dr B C Dixit		
7	Dr B C Dixit		
8	Dr K D Patel		
9	Dr C R Gurjar	English	Appointed as an External Expert in the Member of Board of Studies in English, BVM Engg. College, V V Nagar.
10	10 out of 18 Students cleared the Spoken Tutorial in LATEX Offered by IIT Bombay.		
11	Ms J N Batra	Physics	Acted as judge in Rangoli Competition organized by Fine Arts Club, V.P. Science college
12	Dr A R Jivani	Physics	Acted as judge in Rangoli Competition organized by Fine Arts Club, V.P. Science college
13	Dr A R Jivani and Dr H R Mardia	Physics Chemistry	Conducted , Minaxi Lalit Science Award Test- 2019, a state level examination at V.P. Science college
14	Dr. A. R. Jivani	Physics	Conducted , National Graduate Physics Examination 2019, a National level examination at V.P. Science college
15	Dr A R Jivani	Physics	Design and Coordinator of Prospectus Committee
16	9 Students of the College Received Merit Certificates in Minaxi Lalit State Level Science Exam this year. (Math-4, Phy- 4,Bot-3, Micro-2, Biotech-1)		
17	More than 525 students appeared for SCOPE Cambridge Placement Test This year		



## ANNUAL REPORT OF THE STUDENTS' CENTRAL COMMITTEE Year 2018-19

Education is a pretty broad concept that surpasses the four walls of classroom. The core aim of education is to foster all round development of a student. All round development essentially means intellectual, physical, moral, sensible and social development. To fulfill these objectives, there is a prime need of striking balance between syllabus, curriculum, books and co-curricular activities beyond that. One proverb states that: "Teach me and I will forget. Show me and I might remember. Involve me and I never forget."

In order to follow this statement for all round development of students, the student's central committee of the college comprises of 9 clubs that include Cultural club, Fine Art, Debate, Science, Sports, Nature, Literary club, NCC and NSS. Many students participated enthusiastically in all the activities and many won the prizes too. However, the list is too long to elaborate due to constraint of time, so please allow me to highlight the activities and achievements of each club in brief.

### 1. CULTURAL CLUB

**Ex-officio: Mr. Kamlesh Raval**

**Student Secretaries: Ms. Riya Modi (T.Y. B.Sc. (Physics)) and Ms Kishan of T.Y.B.Sc. (Chem.)**

Organized Fresher Party (13<sup>th</sup> August 2018), Independence Day Celebration (15<sup>th</sup> August 2018), Sardar Patel University Youth Festival (3<sup>rd</sup> - 5<sup>th</sup> October- 2018), Dance Competition (4<sup>th</sup> January 2019), Volcano(12<sup>th</sup> February 2019), Talent Hunt Program (27<sup>th</sup> February 2019)

### 2. FINE ART CLUB

**Ex officio: Mr. Lincoln Chauhan**

**Club Secretary: Ms. Damakshi Patel and Jt. Secretary; Mr. Dhruv Satani**

- Fine Art Club organized "VASANTOTSAV – 2019 which had many competitions like Hair style competition, Mahendi competition, Painting competition and Rangoli making competition. Total 19 students were awarded in this event.
- This club is regularly involved in beautifying the college at all events of our college.

### 3. DEBATE CLUB

**Ex Officio: Mr. H. B. Madhvani**

**Student Secretary: Bhakti R. Bhatt & Joint Secretary-Shruti B. Patel**

1. A Group discussion between the entire student's central Committee members and the Principal on "Leadership".
2. Participated in
  - (i) Inter - Collegiate Elocution Competition organized by Waymade College of Education and Ms Bhakti Bhatt secured 2<sup>nd</sup> position.
  - (ii) Inter - Collegiate Creative Story Writing and Presentation Competition Organized by Waymade College of Education and Mr. Dharak Sevak secured 2<sup>nd</sup> position.
  - (iii) Inter - Collegiate Elocution Competition organized by Waymade College of Education and Ms Shruti Patel secured 3<sup>rd</sup> position.

### 4. SCIENCE CLUB

**Ex-officio: Dr. T. H. Patel and Student Secretary Vishwa Shah**

- In order to explore the importance of Basic Sciences in the Modern technologies and to motivate the students the science club organized two mega events "Inter College Science Carnival 2019.



- The Carnival included Power Point Presentations, Poster Completion and working models. 400 students from 9 colleges participated
- In this Carnival 35 students were awarded with prizes and certificates.
- Vishava Shah and Vrutika Patel of Physics participated in Manthan at Change and won 2<sup>nd</sup> prize in poster presentation and Ms Heli Patel Participated at GSA.

## 5. SPORTS CLUB

**Ex officio: Dr. J. K. Chauhan**

**STUDENTS SECRETARIES AND MEMBERS: Ms. Bhumi Yadav and Dhruv Kapdi**

This year, under the PTI Dr J. K. Chauhan, the students enthusiastically took part in various Inter college competition organized by Sardar Patel University, District level, State level, Gujarat State Khel Mahakumbh and National tournament.

### Our College Achievement In Various Tournaments 2018-19

1. Our college boys were The Champions in Sardar Patel University Inter College CHESS Tournament 2018-19.
2. Our college girls were The Champions in Sardar Patel University Inter College CHESS Tournament 2018-19.
3. Our college boys were Champions in CVM Inter College CHESS Tournament 2018-19
4. Our college boys were The Runners Up in Sardar Patel University Inter College Kabaddi Tournament 2018-19.
5. Our college boys were General Runners up (2<sup>nd</sup> position) in Sardar Patel University Inter College Athletics Tournament 2018-19
6. Our college girls were Runners up (2<sup>nd</sup> position) in CVM Inter College Badminton Tournament 2018-19
7. Our college girls were Runners up (2<sup>nd</sup> position) in CVM Inter College CHESS Tournament 2018-19
8. Gujarat Govt. organized college Kabaddi league tournament 2018. Our college's Kabaddi boy's team has won 3<sup>rd</sup> position in all over Gujarat College & got cash prize 3.25 lakhs Rupees by Gujarat Govt.
9. Our college's athlete boy Rathod Divyesh got 1<sup>st</sup> position in Triple jump state level competition of reliance foundation youth festival
10. Our college's athlete boy Bhoi Radhakishan got 3<sup>rd</sup> position in 4x400mtrs relay in state level khel Mahakumbh
11. Our college's 2 girls Bhumi Yadav & Shivangee Machhi got 1<sup>st</sup> position in Kabaddi district level competition of khelmahakumbh.
12. Our college's Kabaddi Senior National player Jay Patel selected in Centre of Excellence scheme of Gujarat Govt. and he receives Rs. 54000 in a year.
13. Total 14 Boys participated in Inter University West Zone Tournament in various games.
14. Total 4 Girls participated in Inter University West Zone Tournament in various Games.
15. Total 117 Boys Participated in Sardar Patel University various Inter Collegiate Tournament 2018-19.
16. Total 50 Girls Participated in Sardar Patel University various Inter Collegiate Tournament 2018-19.
17. 10 Boys and girls participated at State level khelmahakumbh and Senior Kabaddi Tournament 2018-19.
18. 30 Boys and 13 Girls participated Sardar Patel University Athletics meet 2018-19
19. About 260 players Boys and Girls took part in our college Annual Sports Day Celebration 2018-19
20. Our college Boys 20 team and 260 players have participated in inter class (VPCL) cricket tournament 2018-19.
21. Our college's athlete boy Bhoi Radhakishan got individual championship in Sardar Patel University Athletics Meet 2018-19.



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Above all 19 players of our college participated in VARIOUS ALL INDIA /INTER UNIVERSITY WEST ZONE TOURNAMENT 2018-19 in football, kabbadi, athletics, badminton and chess at various places.

## 6. NATURE CLUB

**Ex officio: Ms. M. K. Patel and Student Secretary: Yeshandu Joshi**

These are the various activities done by Nature club – 2018-19.

- On 1<sup>st</sup> August 2018, students were planted around 50 saplings in our college at different locations for green and clean environment.
- On 13<sup>en</sup> August 2018, visited Jambughoda wild life sanctuary and Champaner. 32 students were participated and learned about nature conservation and how to identified different species of flora and fauna in wild. Students were also trekked at Champaner and learned rock climbing.
- On 4<sup>th</sup> January 2019, students of nature club visited Pariej Bird Sanctuary. Many rare species of birds were observed during the visit. The main objective of this trip is to observe the migratory birds, which come here for only two month.
- On 2<sup>nd</sup> February 2019, Nature club organized a guest lecture on eve of World Wetland Day. To aware students about rapid destruction of wetlands on a large scale all over the world to teach them how we can save the remaining wetlands & how all this is affecting the wildlife of that particular area.

## 7. LITERARY CLUB

**Ex-officios: Dr. A. R. Jivani and Dr. C. R. Gurjar**

**Student Secretaries: Ms Manpreet Kaur A. Pabla and Mr. Denish K. Hirpara**

Since 1947 college regularly publishes the Annual College Magazine where the literary skill of our students flourishes. Titles of the College Magazine were 'V' MAIL, 'V' Radiant, 'V' CARE, 'V' VISION, 'V' GYAN, 'V' intage, EXCELLENCE, etc. Since last 3 years, title of the magazine is 'Reflections'. Since 2009, we publish e-Magazine which is uploaded on the web site for Green initiative for circulation of the magazine.

The club is in process of bringing out the College e-Magazine of this year, for that 130 students have submitted their articles on various topics. Apart from articles, we also publish Annual Report of the Academic and Co-curricular Activities of the college and achievements of Students and Faculties.

The club also organized an article writing competition in which more than 40 students took part. The prize winning articles will be published in the college magazine.

The Magazine club is renamed "Literary Club" since last two years. The club organized various literary activities like poetry Poem Recitation competition, reading Club Movies Club etc.

A reading club is a new initiative to encourage reading habit among students. In the club meetings, students discuss any book they have read and share their experience with the book. Presently there are about 60 books (all contributed by members).

### 8a. NCC Boys:

Main Activities: This year 110 boys were registered under NCC

S. No.	CAMP	PLACE	NO. OF NCC CADETS	DURATION
1	TREKKING CAMP	Amarkantak	07	29 May - 05 June, 2018
2	CATC CAMP	Thamna	25	18 – 27 June, 2018
3	ARMY ATTACHMENT CAMP	Ahmedabad	06	16 – 30 July, 2018
4	CATC CAMP	Thamna	15	04 - 13 August, 2018
5	CATC CAMP	Khambhat	02	03 - 12 September, 2018
6	CATC CAMP	Thamna	22	17 – 26 December, 2018
7	EK BHARAT SHRESHTH BHARAT	Rajkot	02	10 -21 January, 2019

NCC officer MAJOR Dr. M. M. MOREKAR attended the following NCC camps.

S. NO.	CAMP	PLACE	DURATION
1	TREKKING CAMP	Amarkantak	29 May - 05 June, 2018
2	CATC CAMP	Thamna	04 - 13 August, 2018

NCC cadets along with NCC officer Maj. Dr. M. M. MOREKAR have celebrated INDEPENDENCE DAY on 15<sup>th</sup> AUGUST 2018 at V.P. & R.P.T.P.SCIENCE COLLEGE, VALLABH VIDYANAGAR.

NCC cadets along with the NCC officer MAJOR Dr. M. M. MOREKAR have participated in GUARD OF HONOUR PARADE in the honour of GOVERNER of GUJARAT on 17<sup>th</sup> December, 2018 at S. P. UNIVERSITY, VALLABH VIDYANAGAR.

NCC cadets along with NCC officer Maj. Dr. M.M.MOREKAR have celebrated REPUBLIC DAY on 26<sup>th</sup> JANUARY, 2019 at SHASTRI MEDAN, VALLABH VIDYANAGAR.

#### NATIONAL LEVAL CAMP

NCC CADET OF V.P. & R. P. T. P. Science College, Vallabh Vidyanagar secured SECOND POSITION in VOLLYBALL COMPETITION IN ALL INDIA TREKKING at AMARKANTAK (29 MAY - 05 JUNE, 2018)

SR. NO.	REGT. NO	RANK	NAME OF THE CADET	B.Sc. SEMESTER	ROLL NO.
1	GJ16SDA407207	SGT	DABHI PARIXIT JAGDISHBHAI	V	178

CDT PATEL MANTHAN SURESHBHAI (B.Sc. Semester III Roll No. 711) awarded as BEST Master of Ceremony in CATC CAMP, THAMNA (18 – 27 JUNE, 2018)

SUO GOHIL PRITESHKUMAR VIJAYBHAI (B.Sc. Semester V Roll No.581) secured FIRST POSITION in BEST CADET COMPETITION in CATC CAMP,THAMNA (04 - 13 AUGUST, 2018)

SUO GOHIL PRITESHKUMAR VIJAYBHAI (B.Sc. Semester V Roll No.581) awarded as BEST PARADE COMMNDER in CATC CAMP, THAMNA (04 - 13 AUGUST, 2018)

SGT VANKAR VISHALKUMAR RANCHHODBHAI (B.Sc. Semester V Roll No.121) and SGT PATEL BHARGAV NARENDRAKUMAR (B.Sc. Semester V Roll No.135) awarded as BEST GUARD OF HONOUR in CATC CAMP, THAMNA (04 - 13 AUGUST, 2018)

NCC CADET OF V.P. & R.P.T.P.Science College, Vallabh Vidyanagar secured FIRST POSITION in VOLLYBALL COMPETITION CATC CAMP, THAMNA (04 - 13 AUGUST, 2018)

#### 8b. NCC Girls: Ms. Aditi amin

This year 62 girl's students enrolled for NCC.

#### Main Activities:

- The NCC Girl cadets have attended 8 camps at various places like Jammu and Kashmir, Rajpipla, Thamna, Assm, Ahmedabad, Rajkot and Diu.
- NCC CDT DISHA KORALI AND CDT MACHHI SHIVANGEEBEN had attended WATER ADVENTURE CAMP IN DIU on 15-16 FEBRUARY 2019.
- NCC cadets along with Care Taker NCC officer Miss Aditi Amin have celebrated INDEPENDENCE DAY on 15<sup>th</sup> AUGUST 2018 at V.P. & R.P.T.P.SCIENCE COLLEGE, VALLABH VIDYANAGAR.
- NCC cadets along with Care Taker NCC officer Ms. Aditi Amin have celebrated REPUBLIC DAY on 26<sup>th</sup> JANUARY, 2019 at SHASTRI MEDAN, VALLABH VIDYANAGAR.
- For the academic year 2018-2019 the following N.C.C. Cadets have been awarded as,
- BEST NCC CADET : SUO SHIVANI KANNAUJIYA (B.Sc. Semester V Roll No. 190)



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## 9. NSS

NSS Programme Officers: Dr. Rajiv Bhatti, Mr. Atul Patel, Ms. Krutuka Thakkar

Students Secretaries: Ms. Bhavika Chauhan Mr. Darshan Sapariya

NO	DATE	ACTIVITY	STRENGTH
1	20-07-18	Registration through online application	596
2	27-07-2018	Orientation For new NSS Volunteers	350
3	27-07-2018	Guru purnima programme	200
4	5-08-2018	Rally against PLASTIC	032
5	01-08-2018	Tree plantation at college campus	045
6	08-08-2018	Blood donation with ROTARY Club -143 bottle	150
7	14-08-2018	One day camp at Ratanmahal (plastic collection)	150
8	15-08-2018 & 26-01-2019	Flag collection	020
9	12-09-2018	Sanskritik Swadhyay Kasauti -Exam	215
10	16-09-2018	Sanskritik Swadhyay Kasauti- one day personality camp	054
11	14-09-2018	Collected fund for Andhjan Mandal	012
12	22-09-2018--24-09-2018	NSS DAY CELEBRATION at STATE LEVEL CAMP at GUJRAT UNIVERSITY, Ahemdabad	002
13	02-10-19	Gandhi Jayanti celebration (online quiz)	030
14	03-11-2018	Distribution of medicines of swine flu at mount abu at STATE YOUTH CONVECTION by YHAI	002
15	02-11-2018—05-11-2018	STATE YOUTH CONVECTION	002
16	25-12-18	one day camp at Pavagadh	123
17	02-01-2019—09-02-2019	7 days - Special camp at PARIEJ Village	075
18		Two student selected in NSS NATIONAL INTEGRATION CAMP(DARSHAN SAPARIYA AND HASMITA PATEL)	002
19	12-01-2019	Swami Vivekanand Jayanti	015
20	Every Thurs day	Swami Vivekanand Study club, 4.30pm to 5.30pm	015

To conclude, I congratulate all the participants and winners in various activities conducted throughout year.

**Dr. J. P. Patel**  
Vice President,  
Student's Central Committee



## Motivation

**M**otivation is the inner power that pushes you towards taking action and towards achievement. Motivation is powered by desire and ambition and therefore, if they are absent, motivation is absent too.

Motivation is often triggered by external factors, such as the example of successful people, a book, a certain event. These factors awaken the desire to do something follow a dream or just carry a certain task. These factors can be strong, motivating and push you forward long enough to accomplish what you set out to do.

Sometimes, you might have the desire to get something done, or to achieve a certain goal, but if the desire and ambition are not strong enough, you lack the push, the initiative and the willingness to take necessary action. In these cases, you lack motivation and inner drive.

When there is motivation, there is initiative and direction, courage, energy and the persistence to follow your goals.

A motivated person takes action and does whatever is needed to achieve his or her goals. Motivation becomes strong, when you have a vision, a clear mental image of what you want to achieve, and also a strong desire to manifest it. In such a situation motivation awakens inner strength and power and pushes you forward toward making your vision a reality.

Motivation can be applied to every action and goal. There can be motivation to study a foreign language, to get good grades in studies, write a poem, make more money, get a better job, buy a new house, own a business, become a doctor, a lawyer. Motivation is present, whenever there is a clear vision, precise knowledge of what you want to do, a strong desire, and faith in your abilities.

Motivation is one of the most important keys to success.

When there is lack of motivation and incentive you either get no results, or only mediocre ones, whereas, when there is motivation you attain greater and better results and achievements.

A motivated person is a happier person, more energetic and sees the positive end result in his or her mind.

**Motivation is the power that activates the engine of success,  
and moves you to act and do things.**

**Dinkalkaur H. Rayat**  
T.Y. B.Sc. (Micro Biology)



## Teacher as a torch bearer for global world.

**M**other gives birth to us but a teacher gives life to us. Guru is a sanskrit word for teacher which means someone who removes the darkness & is a torch bearer who inspires others in working towards a valued goal. Thus, torch bearer is perhaps the most appropriate word for Guru rather than teacher. Now the question arises how teacher acts as torch bearer for the global world? All of us know that the youth is the future of the world & teachers are the one who can mould them. Like clay, youth is ready to be moulded as work of art. They are waiting to soak up each & every experience from teacher's life. Teachers have the power to guide the youth to achieve their goals & the power to stir a wayward youth away from danger. Teachers have the power to inculcate the ideals of patriotism in the minds of young students. They can make or break the future generation, such is the power that rests in the hands of teachers.

Teachers are student's friends who help them steer of clear of musty water, they are student's guide, helping them to find their passion & they must be their philosopher enlightening their young minds. Today internet, artificial intelligence i.e. Robots have become our latest teacher. A teacher who knows each & everything from each & every corner of the world. But sadly its the only teacher who cannot teach us the difference between what's good & what's wrong for us. For that we have our Guru who always shows us the right path. Teachers are the torch bearers. But today most of us just consider teaching occupation as an ordinary occupation. Today, in kindergarten, if teacher asks the students what they want to be in their future & if someone who's extraordinary in study says that I want to be a teacher then student or parents are not satisfied & will say to him/her to be an engineer or a doctor instead because somewhere they or all of us don't know the importance of a teacher. If we think about our future, then all of us want our children to be well educated, well mannered & capable to conquer the world. For that we need teachers who are passionate, who know what our children are doing & what they are passionate about.

This can only happen, if we change our mentality about how we think about schools, how we think about teachers & most importantly how we think about teaching occupation. Teachers are the "Real Makers" of the nation. They are the lighthouses to guide the destiny of the nation & builders of strong moral character of the youth. Always remember, all the great men we know like Dr. Radhakrishnan Sarvapali, the missile man of India Dr. APJ Abdul Kalam and many others, all were teachers first.

**Shruti B. Patel**  
S.Y. B.Sc. (Physics)



## Gautam Gambhir: The Second Inning

**W**ell the day had come, I had thought about this a couple of times. How will i react the day he retires. What will I say? Most importantly: How will i survive without watching him bat? Every single time it brought tears in my eyes. Being Gautam was never easy but even his single inning would bring widest smile on my face. His happiness means so much to me. He has retired & I will probably never see him bat again. This was heart wrenching. I was devastated and cried myself to bed.

Well in the morning he tweeted about pollution in Delhi & in the evening he casually bid adieu from the game. Both which harmed our heart. What a wonderful career ! He is much more than those 2 world cup final innings. His contribution towards India becoming world No.1 in tests was immense, one of the best knocks by an Indian batsman in overseas conditions was his knock in 2009 against New Zealand in Naiper ! 137 (436) ! He batted 643 minutes to save the test for India ! We all know how brave heart he is, but the one time it was during the 2011 test in Cape Town. Where despite having a swollen elbow he came to bat on the 5th day & saved the test ! Gautam Gambhir is the only Indian to score century in 5 consecutive test matches. He has changed the fortunes of KKR, he made them a great side & the team culture was formed under him & won 2 IPL trophies as captain! He has 15,000 runs in first class cricket ! He has been an integral part of Indian Cricket Team & helping youngsters. He said that script writer ran out of ink, but I'm sure there is a new pen to write the script for the next inning of life.

And I can say the second inning of his life started much earlier in his life. As he always says that he will always play for the nation first, whether it be on the cricket field with the bat or off field. He has been amazing towards the nation through his works, firstly he pledged to donate all his organs after death. And when it comes to Indian Army, he is always upfront with it, as in April 2017, he came forward & said that he will bear all the expenses of education of soldiers martyred in the Maoist ambush in Chattishgarh. After that in August 2017 he started community kitchen to help the less privileged by feeding the poor & building a platform that works towards not letting anyone sleep hungry under the Gautam Gambhir Foundation. He said "Compassion in my heart, a plate in my hand & a prayer on my lips, no one should sleep hungry." Not only this, in support of transgender community, he wore a *saree* & a *bindi*, when the supreme court delivered the verdict regarding the controversial section 377 which criminalised the transgenders. He has been regularly raising the public issues on social media, which definitely makes the impact. So as how much I know him, he will be continuing playing for the nation first, unbeaten till the very end, proving his words right, "walk the talk", as he always does what he says.

**Keyurkumar Amin**  
S.Y. B.Sc. (Physics)



## Why we should save the Rivers?

**T**he main source of water in India is rain and other than that is a river. Rivers are the main source for drinking as well as for daily use for villagers, whose villages are on the bank of river. Now let us go to an older era and compare it with our present situation.

Earlier the river water was very sweet. It was like one is having water with dissolved sugar, it is not in that sense but it was really sweet but now, very few rivers are left with such a memorable taste in it. The importance of sweet water is, firstly it is not harmful to our body i.e. immunity system, while the water with no taste in it, is not of any use in our body it is just to quench our thirst.

Now, about the earlier cleanliness of water, the earlier water was very pure and clean. It is only due to our activities that some rivers have now totally disappeared. There is not at all any single evidence to be found in present time about their existence in past.

Why has it happened so? What is the main reason for it? What can be done now after getting aware? What is its importance it?

So, here are some answers and the importance of rivers in our life. Firstly, it is out of existence due to many reasons such as decrease in rainfall, cutting of trees (deforestation), making it dirty by washing cloths, utensils, releasing industrial effluents, dead bodies of human beings and animals, etc. make it unfit for consumption. During the olden days washing of cloths was not making it dirty because of the fishes who eat the foam or dirt of cloth as food but they are also at the verge of extinction.

The sand on the river bank is very useful for the construction of buildings, houses, temples etc. The river flowing through the forests is the only source of water for the wild animals and birds for quenching their thirst. The rivers are responsible for increasing the water table in the surrounding areas.

Because of decrease in water level and the quality of water, many fish living on the upper side are dying and because of which, marine eco-system has been disturbed in a great sense, not only that the fishermen are in great loss due to the decrease in the quality of fish and upper region. There are more than 3,800 fishing villages in our country. What about that?

These are the main issues to be seen due to the decrease in river water. We are missing the essential point that this is our lifeline on the planet. Forest, rivers, mountains, aquifers are being lost at an alarming rate.

Today, India is in the midst of critical water crisis as urban and rural landscapes get parched.



Rivers have been the lifeline of civilizations and have played a major role in the modern world as well. If we do not make sustained and concentrated efforts in cleaning up our rivers, we will not survive.

So for our own sake, let us come and work together to rejuvenate our lifelines called rivers.

**Manali Andariya**  
F.Y. B.Sc.

## New PSEUDO feminism dominant society ?

— by a non pseudo feminist.

**FEMINISM:** Noun.

**Meaning** : The belief that women should have the same rights and opportunities as men.

**Origin** : When women finally started competing men in the real world and asked for equality.

**Feminists:** Person who believes in feminism.

**PSEUDO FEMINISM:** Noun

**Meaning** : The belief that if women are wrong then also men should be punished. Mostly used when men are leading any argument which has nothing to do with male or female.

**Origin** : When it became cool to shower feminism on all men around you.

**Pseudo feminists** : Person who try to be a feminist without knowing the actual meaning of it.

Dear Society,

Here's an update. You would be happy to know that you aren't anymore a male dominant society.

[Wrote this article because didn't wanted to write on men empowerment.]

**Bansari**  
F.Y. B.Sc.



## Problems faced by Teenagers

**T**oday's teenagers are a lot more different from those of old times. When I say old times, I mean the time when parents ruled their kid's lives. Today's teens are much more independent and smart. Their lives are ruled by their own selves. Teenage is the time when a person becomes what he is going to be for the rest of his life. And that is why its very important what he does in his teenage years.

Teenage is the time when we have the opportunity to lay the foundation of our lives – strong or weak, that depends upon us, for those who are confused, foundation here means our character. Character is the most important part of one's personality. Even if a person is intelligent, good-looking and charming but if his character is weak, then the other things in the long run become insignificant.

When we are kids, we wish we soon become teens and when we do become teens we wish we could either go back in time or just skip those few years of teenage. Teenage is a time full of difficulties, struggles and mostly confusion. Some of the problems are well-known by most of us, fights with parents, studies, peer pressure, etc. There are also many other problems such as the stress of finishing education and that too as per parent's expectations, after that there is the worry of getting into a good college or university and even after that there is the tension of getting a good job.

Problems seem never ending, there is no one to confide in or who can console you, and over and above all this, you also have to cope up with the expectations of your so-called friends or otherwise you will be considered 'uncool' and will be out of the cool group. I wrote so-called friends because, that's what friends with whom you hang out seem like, and the ones whom you really consider true friends, they just don't belong to the group and so, you just have to give up on them (that's what happens in most cases).

The biggest problem of teenage are the vivid and frenzied emotions. Emotions which we cannot suppress. Emotions of love, fear, frustration... but most importantly love. During teenage, its almost impossible not to get drawn towards someone else, it may be infatuation, just liking or even love, but the feeling is new and believe me its just overwhelming. You feel like forgetting the rest of the world and just running after that person you are drawn to. It may create lots of problems or it may help you in some way, but its just unescapable. And so are the other problems, there are a hell lot of other problems that teenagers face in today's world. When I say today's world, I mean today's big bad world where teens are being harassed and abused. Many a times they get into the dark world of drugs, crime, sex, violence, etc. There are many contributing factors to it like, wrong company, crime and sex related literature, or just may be curiosity or experimentation.



The only help you can give them would be support and guidance. Mind you when I say guidance, I don't mean lecturing or scolding, that is the wrong method. Teenagers have the tendency to ignore lectures, and scoldings – well it's just going to backfire. If you scold a nine-year old child, he may have some effect, but if you scold a fifteen-year old boy, the child would take offence and think you're against him. You can be his friend and try to find out more about his problems, parents should try to understand the child, try to be genuinely considerate. Apart from this, there is very little parents can do, like I said its because teens rule their own lives, how they do it without screwing it, is upto them.

Priyanka Agrawal  
F.Y. B.Sc.

## Guiding Light

**W**hen life turned gloomy and led to catastrophe, I locked into myself for I had lost all hope. The world around appeared so dark; nothing seemed beautiful, Not even dear nature's spark. Completely lost, retreating from reality day by day a little light in the shadow showed me the way. He held out his hand and pulled me out of the dark, his touch caused my heart to chirp like a lark. He drew my sadness away and breathed happiness in my life, a flame of hope was ignited within by this little light. He taught me to overcome fears and be brave, and face every difficulty coming my way. He made me optimistic and gave my life a new meaning – soon I realised, it was sweet freedom I was breathing. He became my guiding light and dispelled all the darkness; made me cheerful and filled me with glee. He was the reason I looked forward to each day, and counted my blessings each new day. He put the smile back on my face and restored my life – my master spirit had become my guiding light.

Priyanka Agrawal  
F.Y. B.Sc.



## Life at college: The most glorious phase of one's life

One of the most interesting stage in life that gives you an opportunity to explore is the 'college phase'. Life at college is the time when the childhood ends and we all dive deep into the ocean of new beginnings and possibilities. This golden period better equips you for all the challenges you'll face in life and creates a strong foundation of knowledge.

There is one fundamental thing – life is unpredictable. It might be good, it might be bad, it might be weird, and it might not interest you, but expect anything to happen. For example, you might have a wonderful job this moment, and be fired the very next moment. College life prepares you for all of this. It is a perfect blend of joy and hardships. You meet different people, you interact with them, you learn about their cultures and grow as a person. You will understand how to talk to different people, how to judge their behaviour, thus helping you with important life skills.

You learn to sit through a boring lecture; you try to cope up with the surprisingly strenuous syllabus, and you have the opportunity to learn from some great research minds. Academia, as they say, never lets you go free. People might try to motivate you by telling that you need to study only through your school years and chill during the college life, but that isn't true.

Another life lesson to be remembered – learning never ends. You will find campus groups or student groups where one can explore their co-curricular skills along with many other students like you. You share common interest, and thus you share common ideas. There might have been a time where one would have had to give up on their hobbies or passion, for the competitive exam preparation. Trust me, once you get into a good college, you will get an opportunity to be the artist you always wanted to be through probably a fine arts campus group. You could be that director, you could be that vocalist, you could be the dancer of your dreams – college is the Santa Claus that keeps on giving all these wonderful opportunities while you're in it. There are also campus events, which draw in a lot of fun crowd from other colleges and let you show off your skills.

The life at college is a time when you can decide your career. It's a time of dreams and innumerable paths. You can continue to work in the professional field chosen by you or else you can work for a non-profit organization and even gain the satisfaction of being a humanitarian. The point is that you are free to try out these new things and no one is going to forcefully control the decisions you make. In every nook and corner of the college you'd find a peaceful spot full of natural surroundings, who's value you will only realize once you graduate from your campus.

So, remember that there will be moments that carry a lot of sentimental value and you can't help but miss those years later. The friendships you build in college life is the most



important aspect. These people will give you the strength and be your knights in shining armour all your life. The time you spend with your friends, playing around, or arguing about any random topic, your frequent lecture bunking to watch a new movie, etc. will always stay in your heart. Planning road trips, occasional adventure surges, and impulsive journeys – all these things make you more emotional when you bid adieu to the institution.

So, one fine day when you see pictures from the college of you and your friends having a good time, you'll definitely land up smiling silently. That's the beauty of college life. It stays with you long after you've climbed those ladders of success and forgotten the name of that cute crush you used to drool over.

Life at college is a wild mish–mash of experiences, that with all sort of hilarious stuff going down in the hostels !

**Priyanka Agrawal**  
F.Y. B.Sc.

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## Hostel Life – A fun–filled experience

Imagine having a night stay with your friends, that too for at least 3 years, yes, that is hostel life.

It can be great fun if one has the willingness to adopt to new and different situations and get along with people from different backgrounds and mindsets. The first few days could be a little difficult but once one gets comfortable with doing all the chores, and the roommate, it is the best experience one could ever get. Some people, however, cannot sacrifice the comforts of their home and give up easily. But this is their biggest mistake. Hostel life gives an enriching experience. There is this new found freedom, but that shouldn't be misused. There are outings with friends to movie, theatres, restaurants, etc. However, the 'mess' food may take some getting used to. Mom's home made food will any day be better than that. We start to appreciate the home cooked food more. Hostel life is all about adjusting. There is an issue of space and privacy, as usually 2–3 students get to share a room. But once a bond of trust and understanding is established, this can easily be sorted.

It is better if you share your problems and be honest with each other. These are the people on whom you can depend upon in difficult times. They will become like your family.

Hostel life teaches us many valuable lessons of life. Once it is over, you will definitely miss it. What makes hostel life experience fun and crazy is definitely having good roommate. It gives you a jar full of memories to be cherished forever.

**Kirti Chandgothia**  
F.Y. B.Sc.



## Habit

**A** habit is a routine behaviour that is repeated regularly and tends to occur subconsciously.

The American Journal of Psychology defines a habit, from the standpoint of psychology, as a more or less fixed way of thinking, willing, or feeling acquired through previous repetition of a mental experience. Habitual behaviour often goes unnoticed in persons exhibiting it, because a person does not need to engage in self-analysis when undertaking routine tasks. New behaviours can become automatic through the process of habit formation.

Old habits are hard to break. A new habit is hard to form because the behavioural patterns which humans repeat become imprinted in neural pathways, but it is possible to form new habits through repetition.

A bad habit is an undesirable behaviour pattern. Common examples include procrastination, fidgeting, overspending and nail-biting. The sooner one recognizes these bad habits, the easier it is to fix them. Rather than merely attempting to eliminate a bad habit, it may be more productive to seek to replace it with a healthier coping mechanism.

There are a number of habits possessed by individuals that can be classified as nervous habits. These include nail-biting, stammering, sniffing, and banging the head. They are known as symptoms of an emotional state and are generally based upon conditions of tension. These habits are often formed at a young age and may be because of a need for attention.

When trying to overcome a nervous habit it is important to resolve the cause of the nervous feeling rather than the symptom which is a habit itself or as a result one could experience anxiety. Anxiety is a disorder known for excessive and unexpected worry that negatively impacts an individuals daily life and routines.

### Some different types of habits:

- Behavioural addiction
- Self control, Tetris effect.
- Fixation (Psychology)

### Habit modification approaches:

- Behaviour modification
- Cognitive behaviour therapy

### Behaviours with habitual elements:

- Childhood obesity
- Neurodermatitis
- Nail-biting
- Nose-Picking

Prayami D. Suthar  
Micro Biology



## Role of students in our free India

India is a free country. College students in any country constitute a great force. They can certainly make the future of the country. Whenever there have been revolutions students have always stood up. They have unlimited reservoir of energy and enthusiasm, by utilizing. It can do wonders. But if the students are allowed to go astray, they can cause havoc and destruction all around.

In a developing country like India, students just cannot afford to be lazy or lethargic. They owe a great deal to the society to which they belong. Every student should try to become a useful member of the society. In developing country like India, students have a special role to play. They have to be more responsible towards our country. They can take up constructive activities and have villagers to join them in building roads, well, reading-room, hospitals, schools and panchayat ghars. Various student organisations like N.S.S. and N.C.C. and the youth wings of various political and social organisations are already playing a very commendable role in the service of the country. Let the students rise to the occasion and revolutionize the standard of living in the country. Let every student have a sense of confidence in his capacity.. Let him sing joyfully –

"I am the master of my fate.  
I am the captain of my soul."

### Conclusion:

Time has come when students should realize their responsibilities. In other countries, we find the students doing great deeds. There is no reason why our students should lag behind. What is required is a little initiative and enthusiasm and of course, guidance and inspiration from their elders. Guys its time to be responsible. Well a born baby is much to obey and take care of his/her country but the experienced and educated mind can do more for our nation. Our country is having world's largest youth people, so we can more easily empower our nation.

**Pragati M. Rajput**  
F.Y. B.Sc.



## Wanderlust makes the thunder burst.

**S**uccess brings happiness. Is that so? If in your head you said 'Yes' then why are there levels of success? Every time success for us means something different. We aren't happy with 'one' success. After graduating, success for us become finding a job and so on.

Most of us have unhappy thinking that we are not able to do any productive thing in a day, but that's what the bitter truth of life is. Unknowingly, our day to day work somehow makes a difference in our life as well as in the lives of other.

This reminds me of my vacations, 2 years back, we went to a wildlife sanctuary. There was this boy just 6 or 7 yet visiting sanctuary just to see a lion roaring instead lion was sleeping. I was expecting he would cry, that why isn't lion roaring but he was happy to just have a look at the lion.

Basically, when we visit a wildlife sanctuary, our only aim is to enjoy, look what these creatures are upto. But little do we know, these animals are upto their daily routine. And yet making a difference in our life. We feel joy when we see a panda sleeping, kangaroo jumping & a dog simply wagging his tail. So, concluding that success doesn't bring happiness. But but but, Happiness surely brings success. Yes it does !

All we have to do is accept our flaws, maintain our daily routine, it surely will add up to something beyond our expectations, learn from your past mistakes, head towards future with a positive mindset. This is where success stays. We can't plan success. It just eventually happens to us.

So its ok to have failures at times. Its totally cool to "not have a strategized life." Believing in ourselves and catching the opportunities is surely the key. At last adding a few lines form "The luster of lost things" written by Sophie Chen Keller – "It can be hard to see the important parts of your own story. It helps when someone listens and can see those parts for you."

Whatever you do daily is part of the game, its your job.

So do your job gracefully – like the sun rising, wind blowing making a difference all over.

**Bansari**  
F.Y. B.Sc.



## Is Positive Attitude a necessity in today's world?

In today's world many things are happening regularly which bore us and make us feel sad and irritated towards life and the circumstances. We always pre-set our mind that things will go on the wrong track. We think that if we do a particular thing then the results will put me in an embarrassing situation. Yes, this type of attitude is called as 'Negative Attitude'.

According to one thesis Positive Attitude has a vital role in your success. According to Howard University's one article, when a person gets a job, the 85% of the part depends upon the attitude of the person and only 15% part is due to the person's intelligence and general knowledge.

Attitude is a important word of English literature in both ways personal as well as at professional level. In every moment of life attitude plays an important role.

If attitude plays this much importance in your life and in your success than don't you think that once you have to rethink about your attitude towards things?

Just remember on thing in your life that "Once you replace your negative thoughts by positive ones, you'll start having positive results."

Once Steffon Diggs (American footballer) had said that "Each day, I came in with a positive attitude, trying to get better." And how can we forget that our Indian author Shiv Khera had once told that "Your positive action combined with positive thinking results in success."

So guys think positive.

**Dhwani P. Soni**  
F.Y. B.Sc.



## GIFT

**W**e cannot define 'India' in one word. It's a mixture of variety of languages, cultures, etc.

So, I have a question for our youth and people of every age group that, why are we rushing to Canada, America & foreign countries? We have a country which has so many languages, religions etc, which others don't have. Our Prime Minister, Shri Narendra Modi has implemented a project in Gujarat which will make each and every person proud and make the people ashamed who has underestimated our India. And it is the best "GIFT" ever which our honourable PM could give — "a gift city". He only wants our India to be a developed country.

Gujarat International Finance Tech City or GIFT is an under—construction central business district between Ahmedabad and Gandhinagar in the Indian state of Gujarat. It will be built on 359 hectares of land. Its main purpose is to provide high quality physical infrastructure so that finance and technology firms can relocate their operation there from Mumbai, Bangalore, Gurgaon etc, where infrastructure is either inadequate or expensive. It has everything that people need and no one has to go to foreign countries for employment. It will provide:

**Utilities:** The idea of GIFT was developed during the vibrant Gujarat Global Investor Summit 2007 & is being planned by East China Architectural Design and Research Institute.

**Electricity:** The 1000 MW electricity supply is planned to be 99.99% reliable.

On 15 December, 2011, The Economic Times reported that city officials in GIFT are inviting companies from Singapore who wish to expand but cannot do so due to lack of land in Singapore to open business.

If we say about GIFT infrastructure, then it is going to be incredible ! For example, roads will be of International class and it is planned in a manner which will make GIFT a zero accident zone in the city.

GIFT will be an inspiration and a point of reference for many such initiatives coming up in the future!!

Our CM has said that "PEOPLE TALK OF GREEN TECHNOLOGY, WE HAVE GIVEN IT IMPORTANCE IN GIFT. WE ARE WORKING TOWARDS CREATING AN ENVIRONMENT FRIENDLY CITY."

It's a matter of great joy that such work has been completed in record time of 14 months. Our youth is very talented and with the right opportunity and infrastructure they will never lag behind. PM shared that as far as GIFT city is concerned the government is working with a long—term vision in mind. He said, "We are with a long—term thought, and have primary



schools for those who will work here. We are working for the future of those who will make bright India."

Shri Narendra Modi has inaugurated the tallest tower in Gujarat, in GIFT city. He has stated a wonderful line, "GIFT IS PROJECT WHICH IS BLESSED BY BOTH GODDESS LAKSHMI AND GODDESS SARASWATI." Different people are seeing GIFT with a different perspective but as one goes into the depth of things, he or she will see that through projects such as GIFT, the government is aspiring to scale new heights in services sector. GIFT is not only a building, there is not only currency in this, it will be a hub for commerce worth millions and that too on the click of a mouse.

The facilities of GIFT are for everyone. A person from any part of Gujarat can join the fast pace development taking place in the world.

Finally, Gujarat is changing, world is changing. Earlier to dig a canal or to put small pipes it took years. Now there is such good technology in construction and that is why in 14 months such work is ready. The second tower will be ready soon. I must say that "INDIA IS BLESSED WITH A LEADER WHOSE UNIQUE LEADERSHIP QUALITY IS THAT, HE DREAMS & HE DOES AND MOTIVATES A BILLION INDIANS... I THINK DEFINITION OF FDI IS FIRST DEVELOP INDIA".

We want to make India a global destination for manufacturing, it has a huge potential to be so. We all should be very inspired by our PM's vision for "MAKE IN INDIA". This will be the next growth driver for India. We believe India is an epicentre of "innovation".

Creating job opportunities through the "Make in India" campaign, Narendra Modi said that, we have to create opportunities of employment. If the poor have jobs, the purchasing power of family will increase, while inviting world-class companies to India, will also request Indian manufacturers not to leave the country. We want our companies to shine as multi-national companies. "THE DUTY OF YOUTH IS TO CHALLENGE CORRUPTION, NOT TO LEAVE INDIA AND RUSH TO FOREIGN."

Lastly, I just want to say one line, "Success is about having vision and direction, and not just making money."

**Urja V. Chauhan**  
S.Y. B.Sc. (Micro)



## Steps Towards Green City – Clean City.

As we already know that we are living in the modern era but in this modern generation there is development of new technology day by day and due to this technology there are many disadvantages. We can also say that new technology is for Industrial & Factory technologies which give us many good products but on the other hand there are many disadvantages like air pollution and waste water (contains dye, colour etc.) etc. from industries and factories, that make our cities polluted, damage greenery, pollute water and many more. Therefore there are some frequently asked questions i.e. How to conserve environment? How to make our city clean? How to make our city green? Can we live a healthy life? Can we conserve our environment for next generation or not? etc., we raise lot of questions in mind and the answer is uniquely described below.

We accept that there are many people who makes their own city dirty by throwing plastics on the road and spitting tobacco from mouth or by vehicle or by cutting trees or making railways track in forest or making buildings in farm etc. There are many causes of these activities in nature. By using bad conditioned vehicles, there is air pollution which damages our body and people have to suffer from many disease like asthma, emphysema etc. & also by cutting trees we are damaging out nature. As a result, every year there is less rainfall. By cutting trees in forest the animals are affected. By honking of vehicles there is noise pollution. So to overcome this problem we have to make city clean. There are few points described below to overcome this problem.

- (a) grow more trees – mostly on dry land, in city, where there is more pollution.
- (b) try to reduce use of vehicles, to reduce noise pollution and air pollution.
- (c) use government buses and trains to travel long distance.
- (d) try to solve environmental issues every month, by making several communities or groups in particular city.
- (e) use less water in every activities
- (f) make groups and conduct seminars in different colleges, school, urban and rural areas etc.
- (g) ambitious, well defined goals and regular reporting of progress.
- (h) electricity generation using renewable resources
- (i) use of solar energy as much as possible



As we discussed few points above, we have to follow them and encourage people to follow those rules. Also by taking help of government officers, we can do *abhiyans* to clean our city and grow more trees day by day, thereby making people aware and actively participate in these *abhiyans*. Our present situation is much worst than past situation because there is less percentage of oxygen in highly polluted places. People suffer from fatigue diseases like cancer, heart attack, etc. Using industrial products without knowing its disadvantages and pollution in nature. Also there are many countries which are developing like India, Pakistan, Myanmar etc. which have to face such issues in their country. But by taking examples of developed countries there should be inspiration in the developing countries to make their country clean and make comparable to other developed countries.

If we are talking about our country then there are many towns, cities who are in shortage of water, land, cloth and suffering from many diseases without medicines or treatment which results in low ratio of healthy people v/s unhealthy people. To overcome that problem, particular towns or cities should be aware group of people who are arranging seminars in developing cities.

So to overcome this problem there is only one answer and that is to grow as much as possible trees and clean waste from your area, everyday aware your surrounding people about effects of pollution on environment and its effects affect to human body. By growing trees many problems are solved and also greenery attracts people. Every people of our country, city or town have to make a motto for their life, that is "GREEN CITY, CLEAN CITY".

**Hariom Pate**  
F.Y. B.Sc.

## Unethical Wildlife Photography.

**A** small careless of us can cause a big damage to wild.

Photography, we often get excited by just hearing about it. The, passion, career, dream & the coolest job in eyes of today's young generation. But this bright & cool passion too has its ugly darker shade when it is done carelessly. Out of all wildlife photography has attracted too many that, that "too many" has become life threatening disaster for the wildlife. Animals & their habitat is facing a new threat from this new breed of photographers. Their unethical method of taking perfect shot has made them uncomfortable in their own habitat. They chase them, bait them & many of them even aren't aware of their behaviour. The great Indian Bustard (*Ardeotis*



nigriceps) the state bird of Rajasthan. This bird is very cautious one & it senses the intruder very easily in its area. They keep an eye on intruder until the intruder leave the place. Until then they stop their activity like mating, feeding, counting etc. This threatens the survival of the species. This This matter become so common that the Ministry of Forest and Environment was forced to curtail photography during its mating season. Nesting or Den photography also attracts a lots of photographers. The photographer often harm garden their nest & shoot their Nesting activity. But after the work is done they leave the things unfinished & due to this predators easily find the nest. The photographer tends to come near the wild & this careless behaviour stress out the animal & its forced to leave that place. Sometimes the race of getting the picture of the rare species they overcrowd the animal & mass photograph them. Animal gets stressed out & become aggressive towards them. The baiting tactics are more often used by the photographers. Baiting is about offering free meal to the animals. Baiting is strictly illegal as per wildlife protection Act 1972 & could invite penalties as hunting. But still photographers use this method & sometimes in return gets attacked by the animal. To get themselves free from the animal they try to injure the animal badly. The photographer may get the award for this but wild has to pay for this & the price paid is their life.

Earth provider enough to satisfy every man's needs, but not every man's greed.

— Mahatma Gandhi

Sometimes, its heart ache that greed of becoming successful, to stand unique, to win the attention, to become popular the photographer harm this innocent creatures.

There is nothing wrong in taking pictures of the wild, even they are helpful to us but when it's done without harming or disturbing the wild. Unique shots can be clicked with a distance too, without manipulating their nests, desisting the practises like playback of bird—calls. Take the photos of amphibians and snakes in their Natural habitat instead of refrigerating them & without chasing them. This would be the best recipe to get the satisfying and helpful photographs.

Photograph them but don't disturb them.

Click them but don't stress out them.

Be the survival chance for them.

Not the threat disaster.

**Hasmita G. Patel**

F.Y. B.Sc.



## Let's Listen...

Listening, we spend roughly 60% of our communication time listening, but are we good at it? We only retain 25% of what we hear according to researchers. Listening it's a mental process – a process of extraction to make meaning from sounds. We always use some pretty cool techniques to listen, we recognise patterns to distinguish noise and especially our name.

"Differencing" is a technique which we use due to which we cease to listen to sounds that remains the same like the noise of a fan or the noise of a washing machine in our house. This is also a kind of filter but many people never pay attention to these filters.

Sound places us in space and time; by closing your eyes you will feel the size of the room by reverberation and listening is the main way that we experience the flow of time.

But we are losing our listening, first we invented ways of recording starting with writing then audio recording and now video recording. Secondly, the world is now so noisy it's just hard to listen and due to that many people take refuge in headphones. But due to that people are creating tiny little sound bubbles where nobody is paying attention to anybody. We're becoming impatient at listening. This is a serious problem as conscious listening always creates understanding and without that nothing can happen.

5 tips to improve your listening are:

The first one is silence, just some 3 minutes of silence for a day or quiet is wonderful. According to ENT's silence or even quiet resets your ears to listen to more stuff.

Second is called mixer, listen and identify how many of them you can hear.

Third is what people call savouring, just enjoy those mundane sounds around you like ticking of clock, fan spinning, whistles of pressure cooker, humming of a dryer. So pay attention as sounds are really interesting.

Fourth is the play with filters try switching your attention from one sound to another.

Finally, we have an acronym

**RASA** (Sanskrit word for essence) it stands for

**R**ecieve – pay attention to whatever you're listening.

**A**ppreciate – just make little noises like 'ok', 'oh', 'hmm' or even nod your head to keep the conversation going.

**S**ummarize – sum up all that you've listened.

**A**sk – always ask questions as it'll help you to understand better.

So, let's start listening and turn this word into a conscious listening world – a world of connection and a world of understanding.

**Prakash Y. Prajapati**  
F.Y. B.Sc.



## "It is not the mountain we conquer but ourselves"

– Sir Edmund Hillary

**A**s per my experiences, Trekking is one of the best adventure activity in many terms. trekking is a physical exercise and also unique learning experience as mountains teach you a lot about life. By being open and accepting new experiences, you allow yourselves to enhance your knowledge, understanding of the world and yourself.

I had a great time few months ago in November, I visited the hill station of Dharamsala in Himachal Pradesh which is known for McLeod Ganj, the abode of Dalai Lama. Our cottage was in McLeod Ganj and our Trekking site was 11 km from the McLeod Ganj city. I went with my family and cousins, where five of us were trackers and had done many treks earlier. Yes! I can say I have my adventurous and an enthusiastic group of my family so, in spite of competing and trekking with any other group I choose my family as a group as we always had a great company together.

Now my trek begins... all five of us reached the starting point from cottage with trekking pole in our hands, dry fit pants, down jackets, and a back pack which contained other woollen cloths, a tent, some breakfast and electronic gadgets like mobiles, power-bank, camera etc.

The hardest part was, the last day. Weather was comparatively bad and same was this day, due to the month of November, we were lucky that there was no snow, and this results in moderate temperature i.e. between  $-3^{\circ}\text{C}$  to  $8^{\circ}\text{C}$ . We took a deep breathe and started walking.

At about 2800m above sea level, our destination 'TRIUND' a part of the Dhauladhar range of Himalayas and lies 18 km away from McLeod Gunj. It is considered to be one of the most accessible trek in the entire Himalayan range. About four hours of walking and climbing, peering at the path ahead of us through raindrops, admiring the beauty of the misty valley below.

It is truly said living in the mountains demands sweat & blood, we took 30 min. break after 4 hours of trekking and I was not in the position to stand for a while too. Our heartbeat was fastening. Our legs were carving. I was sweating internally as it was cold our faces and noses were turning reddish. I said to my dad, "No! Now I can't, may I return back please, I can't walk further any more", and my Dad said, "All delightful sights came after amazing efforts. And yes I want to reach there for an amazing view that I had only seen in Google Images. While I was taking a look about Triund trek and finally I plugged my earphones, took trekking pole in my hand and started walking for that amazing view on top.

After 2 more hours of walking and climbing we reached, and a long breathe out... we thought it was the last step climb that took our breath away, but no, it was the invitingly beautiful green plateau surrounded by magnificent peaks that had made us breathless. We spent



a night in tents, and it was very cold about  $-4^{\circ}\text{C}$ , but an amazing view of stars, plenty of stars within us. The night view as amazing.

On the way back, we saw people going up, possibly to camp overnight. At the end of the day, we had sore muscles, numb feet, but an exhilarated mind !

An amazing Journey !!!

While returning home I had a big bunch of memories along with my woolen cloths in my bag pack. A new hope for an another trek within next year like Triund.

**Sachi N. Gothi**  
F.Y. B.Sc.

## Biodegradable Polymers

**M**ahatma Gandhi said that, "Sanitation is more important than independence." All type of cleanliness is necessary for our good health whether it is surrounding cleanliness, environment cleanliness, work place cleanliness, etc. Everyone should understand that cleanliness is as necessary as food and water. We should encourage the people to recycle and reuse the waste. This can be done by telling the people about the benefits. Here I will discuss about biodegradable polymers. Polymers are everywhere and there lies the problem. Most of the polymers we use on everyday basis are petroleum based products and although they are durable in use, they are also durable in waste.

According to UNICEF, the solid waste can be classified into biodegradable and non-biodegradable waste. Biodegradable waste, that are completely decomposed by biological process either in presence or in absence of air are called biodegradable. e.g. Biodegradable polymers often refer to plastics that break down and decompose over time. Non-biodegradable waste, which cannot be decomposed by biological processes is called non-biodegradable waste. There are few ways to help biodegradable waste management. In the present study, we have to discuss about the impact of biodegradable waste on the environment and focus on its safe disposal for sustainable environment.

### Introduction:

Many different materials are used for packaging including metals, glass, wood, paper or pulp, plastics or combinations of more than one material as composites. In recent years, the



recycling of packaging materials has increased but the recycling rates for most plastic packaging materials that are capable of undergoing decomposition into carbon dioxide, methane, water, inorganic compounds or biomass in which the predominant mechanism is the enzymatic action of micro-organisms, that can be measured by standardized tests, in a specified period of time, reflecting available disposal condition. The concept of synthetic biodegradable polymers was first introduced in the 1980. In 1992, an international meeting was called where leaders in biodegradable polymers met to discuss a definition, standard, and testing protocol for biodegradable polymers. Eg. Polyhydroxy butyrate (PHB), Nylon-2-nylon-6 etc.

## Structure:

Biodegradable polymers tend to consist of ester, amide, or ether bonds. In general biodegradable polymers can be grouped into two large groups based on their structure and synthesis. One of these groups is agro-polymers, or those derived from biomass. The Other consists of bio-polyesters, which are those derived from micro-organisms or synthetically made from either natural or synthetic monomers.

Agro-polymers include polysaccharides, like starches found in potatoes or wood, and proteins, such as animal based whey or plant derived gluten. Examples of biopolyesters include polyhydroxybutyrate and polylactic acid.

## Applications and uses:

India is a developing country with 16 percent of the world population and two percent of total land surface. The exponential increase in industrialisation is not only consuming large areas of agricultural land but simultaneously causing serious environmental degradation. There are many uses of degradable polymers. Biodegradable polymers have an innumerable use in the biomedical field, particularly in the fields of tissue engineering and drug delivery. Conventional polymers such as polyethene and polypropylene are durable in nature can persist for many years after disposal. They are appropriate when used for products which require long lifespan [Ex. plastic tables, chair]. In contrast, biodegradable polymers can be disposed off in prepared bioactive environments to undergo degradation by the enzymatic actions of microorganisms. Biodegradable polymers are often derived from plant processing of atmospheric CO<sub>2</sub>. Biodegradation converts them to CO<sub>2</sub>, CH<sub>4</sub>, water, biomass and other natural substances. Biodegradable polymers are thus naturally recycled by biological processes.

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## Gurtej Singh Sandhu

**G**urtej Singh Sandhu is the only person from India who broke the record of Thomas Alva Edison's inventions patent. Gurtej Singh Sandhu was born in London to parents from India. He studied electrical engineering in India, before he went to the United States to pursue a doctorate in Physics at the University of North Carolina at Chapel Hill.

Gurtej Singh Sandhu is an Indian inventor in the field of thin film processes and materials, VLSI and semiconductor device fabrication. He is recognized for being the all-time seventh most prolific inventor as measured by number of U.S. utility patents as of August 21, 2018. Currently, he is senior fellow and director of Advanced Technology Development at Micron Technology.

The publication Kiplinger reports, Sandhu developed a method of coating microchips with titanium without exposing metal to oxygen, which would ruin the chips. Initially he didn't think his idea was a big deal, but now most memory chip makers use this process.

Gurtej Singh Sandhu's pioneering achievements concerning patterning and material integration have enabled the continuation of Moore's law for aggressive scaling of memory chips integral to consumer electronics products such as cell phones, digital cameras and solid-state drives for personal and cloud server computers. Sandhu initiated the development for atomic layer deposition high K-film for DRAM devices and helped drive cost-effective implementation starting with 90nm node. DRAM extreme device scaling was also made possible through his pitch doubling process which led to the first 3x nm NAND flash memory. Sandhu's method for constructing large area straight-wall capacitor enabled the formation of double-sided capacitors that extended the scaling of important one-transistor, one-capacitor (1T1C) device technologies. His process for CVD Ti/TiN is still in use for making DRAM and NAND chips.

Gurtej Singh Sandhu has given a big contribution in 21<sup>st</sup> century's scientific research but there is not one thing that this young generation of India knows about him and we give him less credit than he deserves.

He has 1299 inventions patented in his name. As a person he is very humble, kind and rooted. When he gave an interview to a well-known publication, at that time an interviewer asked him a question and compared him to the great scientist Thomas Alva Edison but he told that he liked to see himself as a working person and that these patents will be useful to people that is his purpose. He is now a fellow of the Micron company. And we are proud of him for his big achievements and he is also proud of our nation. He has brought laurels to the nation.

**Darshi Panchal**  
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## Importance of Microorganisms

**H**ave you wondered why food gets spoiled if left unrefrigerated for days? Or how you get cheese from milk? These are all due to the action of living organisms that are not visible to the naked eye, called microbes or microorganisms. These microbes also have some very important applications in our lives. Along with plants and animals, microorganisms also form an important part of the biological system on earth.

### In household products:

You must have seen people add a small amount of curd to fresh milk. In time, this milk at suitable temperature turns into curd! How does this happen? This is due to action of microorganism called Lactic Acid Bacteria (LAB).

The small amount of curd added as a started culture to milk contains millions of these bacteria, which multiply at suitable temperatures turning milk into curd. LAB also improves the nutritional value of milk by increasing vitamin B12. They also play a significant role in keeping a check on disease causing microbes in our gut.

Other uses of microorganisms in our household products include the dough used to make idli or dosa. Similarly, the dough used to make bread is fermented using baker's yeast. (*Saccharomyces cerevisiae*) The process of fermentation produces  $\text{CO}_2$ , which gives the bread the puffed-up appearance. Toddy (a drink in southern India) is also the result of microbial activity on sap from palm. Other uses involve fermentation of fish, bamboo-shoots and soybean. Another product made using microorganisms is cheese. For example, the large holes seen in 'Swiss cheese' is due to the amount of  $\text{CO}_2$  produced by the bacteria *unpropionibacterium shermanii*.

### In industrial products:

Industries also use microbes to make product of value to humans since products are made on a large scale in industries, microorganism are also grown in bulk in large tanks called 'fermentors'.

Industries use microbes to make the following products:

#### (A) Fermented Beverages:

The Baker's yeast that is used to make bread, is also used to ferment malted cereals and fruit juices to make beverage such as beer, whiskey, wine, brandy etc. The raw material used and the type of processing (distillation or no distillation) gives rise to different alcoholic drinks. For example, processing without distillation produces wine and beer, whereas distillation of fermented broth produces whiskey and brandy.



## (B) Antibiotics:

'Anti' means against and 'bio' means life. Microbes produce chemicals that can kill or stop the growth of disease causing organisms. These are antibiotics. The discovery of antibiotics in the twentieth century was very important to human health.

The scientist Alexander Fleming accidentally discovered the first antibiotic—Penicillin during world war II, Penicillin was extensively used to treat wounded American soldiers. Deadly diseases such as plague, whooping cough, diphtheria which claimed many lives in the past, are now treated because of antibiotics.

## As Biocontrol Agents:

Using pesticides and insecticides not only kills harmful pests but also gets rid of beneficial life forms. Therefore, farmers are now turning to the use of biological methods to control pests and plant diseases. This use of biological methods is called 'Biocontrol'. An example of a microbial biocontrol agent is the bacteria *Bacillus thuringiensis* that is toxic to butterfly caterpillars but does not harm other insects.

Lately, through genetic engineering scientists have introduced toxin genes from this bacteria into plants, making them resistant to attack by pest. Example — Bt. Cotton. Another biocontrol agent developed to treat plant diseases is the fungus. *Trichoderma* Baculoviruses are also excellent biocontrol agents because they attack harmful pests without negatively impacting plants and beneficial insects.

**Divya R. Khant**  
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## Microorganisms in our daily life

"Without laboratories men of science are soldiers without arms."

— **Louis Pasteur**  
(French Biologist, Microbiologist and Chemist)

In our everyday life, we come across many plants and animals. However there are many other living organisms around us that we cannot see through naked eyes. They are called 'micro-organisms'.

There are 5 major types of microorganisms.

1. Virus
2. Bacteria



3. Algae
4. Fungi
5. Protozoa

Scientists have identified thousands of species of microbes that live in and on human body.

### **Advantages of microorganisms:**

Micro organisms are used in preparation of curd, bread, cake, cheese, pickles, wine, beer and many other food items.

They are used in production of antibiotics.

They can also boost our immune system.

Microorganisms digest our food and help us to improve our metabolic rate.

Microorganisms have made it possible to make such medicines which when enter the body, target changes in them and they become functional again. Example: Insulin.

### **Disadvantages of microorganisms:**

They cause diseases in humans, animals and plants.

They cause small pox, common cold, influenza, herpes, hepatitis, polio, AIDs, malaria, T.B. etc.

They can grow everywhere like volcano, ice-creams, in your shoes, closet, in books etc.

Protozoa cause sleeping sickness.

### **Facts of Microorganisms:**

- Our mouth is inhabited by over 600 known species of microorganisms.
- New born babies do not have any bacteria.
- All the bacteria in our body collectively weighs more than 4 pounds (1.814 kg)
- Microbes generate at least 50% of the oxygen we breathe.
- Damp hands have more bacteria than dry hands.
- Ear wax, has antimicrobial properties that reduce the feasibility of bacteria.
- There are around 1458 bacteria in our belly button.
- "Happiness and bacteria have one thing in common, they multiply by dividing!"

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## Genetics

They may not have known why it was so, but Babylonian Hardsmen and farmers knew that certain traits were passed on among animals. Clay tablets from that era show they also knew how to cross-pollinate date palm trees.

The formal study of genetics did not begin until the mid – 1800s, however, when Austrian botanist and Monk Gregor Mendel experimented with pea plants in a monastery garden. Meticulously cross – pollinating peas with different traits, such as seed colour, he discovered that first-generation offspring didn't mix the characteristics of the two parent samples but displayed discrete traits of one or the other. For example, mixing a red-flowered pea with a white flowered pea, would produce not pink flowered offspring, but red-flowered ones. Moreover whiteness recurred in successive generations, meaning that the trait had not been lost but was being passed along in latent form. Ignored at the time Mendel's work described the basic laws of heredity.

Then, in 1941, geneticist George Beadle and biochemist Edward Tatum showed that genes were not simply passive carriers of information; they also functioned at a cellular level as a code for the production of proteins.

The pace of discovery since then has been furious. In 1953, biophysicists James D. Watson and Francis Crick proposed the double-helix structure of DNA—two strands of the material, knit together by four base chemicals. Since then scientists have identified specific genes within a DNA strand. Connected those genes to character traits, spliced genes and closed or replicated them. These successes have led to new treatments for cancer, allowed doctors to address certain birth defects through gene therapy, given biotechnologists the tools to grow new medicines, and made it possible for forensic scientists to confirm individual identities with biological evidence.

### What is Genetic Engineering?

Genetic engineering has been around for as long as farmers have crosspollinated plants, but it moved to a new level in 1973, when biochemists Stanley N Cohen and Herbert W. Boer inserted altered DNA into E.Coli bacteria. This procedure, termed recombinant DNA, is now the principal method of genetic engineering, widely used in industry and agriculture.

Taking the next step, scientists have created full strands of synthetic DNA in the laboratory. By customizing that genetic code and placing it into a living cell, researchers envision using bacteria as tiny manufacturing factories, producing ethanol fuel, synthetic fibers or other products.



## Mapping the Human Genome:

The goal of modern genetics has been mapping the human genome the detailed structure of our own DNA. The effort to do that was largely complete by 2003, yielding a guide to more than three billion base pairs of chemicals that compose the rungs of a double helix-shaped ladder and give the coded instructions for the manufacture of protein. The Human Genome Project found that those base pairs make up some 20,000 distinct human genes. So far, the function of about half of those genes has been identified, but researchers continue to search for those that play a role in illnesses such as cardiovascular diseases, diabetes and various cancers.

One new tool, the Hapmap catalog, uses geographically diverse blood sample to trace regional variations in DNA and has led research into the roots of some health problems.

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## The Greater Bilby

**T**he greater bilby (*Macrotis Lagotis*) often referred to simply as the bilby since the lesser bilby (*Macrotis Leucura*) became extinct in the 1950s, in an Australian species of natural omnivorous animal in the order peramelemorphia.

Other vernacular names include dalgyte, Pinkie or rabbit – eared bandicoot.

Greater Bilbies live in arid areas of central Australia. Their range and population is in decline.

### Scientific Classification:

Kingdom : Animalia  
Phylum : Chordata  
Class : Mammalia  
Infraclass : Marsupialia  
Order : Peramelemarphia  
Family : Thylacomyidae  
Genus : *Macrotis*  
Species : *M. Lagotis*

Bionomical Name: *Macrotis Lagotis*, (Reid, 1837)





## Habitat:

Once widespread in arid, semi-arid and relatively fertile areas, the bilby is now restricted to arid regions and remains a threatened species. It makes its home in a burrow that spirals down, making it hard for its predators to get in. The bilby prefers arid habitats because of the spinifex grass and the acacia shrubs.

## Description:

Greater bilbies have the characteristics of long bandicoot muzzle and very long ears. They are about 29–55 centimeters (11–12 in) in length.

Compared to bandicoots, they have a longer tail, bigger eyes and softer, silky fur.

At 1 to 2.4 kilograms (2.2 to 5.3 lb), the male is about the same size as a rabbit, although male animal in good condition have been known to grow up to 3.7 kilograms (8.2 lb) in captivity.

The female is smaller and weighs around 0.8 to 1.1 kilograms (1.8 to 2.4 lb).

Bilbies have an excellent sense of smell and sharp hearing. Their fur is blue-gray with patches to tan and is very soft. The tail is black and white with a distinct crest.

A bilby typically makes a number of burrows within its home range, up to about a dozen; and moves between them, using them for shelter both from predators and the heat of the day

## Life Cycle:

In captivity, bilbies typically live for at least five years with some specimens reaching ten years of age. However, wild caught bilbies tend to be less than 12 months old.

Females become reproductively active at six months of age and can breed all year round if conditions are favourable.

The young bilbies are only 0.25 in (0.6 cm) long and very underdeveloped when they are born.

They leave the pouch after 70–75 days and remain in the natal burrow for two to three weeks before becoming independent.

The scent markings implemented by male bilbies primarily function as a mode of communication between members of the same sex, since female bilbies rarely take heed of such signals and males are never aggressive towards their female counterparts.

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## Emotional Intelligence

**W**e all are familiar with IQ i.e. short for intelligence quotient. IQ is a total score derived from several standardized tests designed to assess human intelligence. IQ scores are used for educational placement, assessment of intelligence disability, and evaluating job applicants. Hence, we are much familiar with this concept since primary school. But what most of us don't know, is that we also possess EQ i.e. emotional quotient, also known as emotional intelligence.

IQ is used to identify individuals with off the charts intelligence or mental challenges, whereas EQ is a better indicator of success in the workplace and is used to identify leaders, good team players, and people who best work by themselves. Emotional intelligence is difficult to measure in numbers, because it is that thing inside us that recognizes emotions in ourselves and others, and then guides us to respond. Understanding emotions may seem trivial, but in fact it is the opposite. It is widely believed by experts, that a person's level of emotional intelligence may be a better predictor of success and overall happiness than their IQ.

When under stress and pressure, some people emerge as leaders while others crumble under the pressure. Negative reactions can even drive some people to leave the task at hand. Research suggests that the outcome hinges on individual emotional intelligence. If this is not your strength, don't worry. There are several ways to raise EQ just by raising our awareness of our emotions and what is causing them.

Emotional intelligence is your ability to identify what you're feeling, why you're feeling it, and how your feelings not only affect you but all those around you. So when we learn to become more emotionally intelligent we begin to master self. Really know thyself and understand what it is that is keeping you stuck, what limits you and what triggers you, what gets you angry and what gets you sad and hurt, what causes you to take things so personally. So when you are improving your EQ, what that will allow you to do is become less reactive and more interactive with conversations.

There is no true success without emotional success. Yet of the more than three thousand emotions that we have words to describe, an average person experiences only about a dozen different ones in the course of an average week. We must remember that this doesn't reflect our emotional capacity but rather the limitations of our present patterns of focus. There are 3000 words in the English thesaurus that describe various emotions. In that 1051 words describe positive emotions while 2086, almost twice as many, describe negative emotions. But what this means is that we've made so many words to describe an unpleasant emotion and we tend to focus more on what is unpleasant about life then looking at the bright side. Life is an emotional experience. The quality of emotion you experience everyday ultimately determines the quality of your life and above all your happiness depends on it.



An emotion is energy in motion. There are hidden messages in every emotion. When we identify them and act upon them, we become emotionally intelligent. All emotions are a call for action. Once you're familiar with the hidden messages in emotions and its action signal, your unpleasant emotions can become your ally. When we do not understand our emotions, they become unpleasant experiences to us. We experience emotions because emotions are the language of the subconscious mind. We can master our negative unpleasant emotions when we learn how they serve us rather than enslave us.

Our emotions trigger our decision making all the time. And there are always reasons behind why we are feeling a certain type of way. For example, one gets bad-tempered or irritable as a result of hunger, which is called being 'Hangry'. In this case, one is not angry at the other person; he is just experiencing discomfort due to hunger. Here hunger is stimulus and anger is response. Enlarging the time between stimulus and response, that's where all self mastery comes from.

Sometimes there are very small issues behind the way we feel, and sometimes it can be deep rooted and might be affecting us since years. For example, Anger is the secondary emotion, the primary emotion is frustration. The message in frustration and disappointment is that your brain believes you could be doing better than you currently are. Constant frustration means that the solution to your problem is within range but what you are currently doing isn't working and you need to change your approach in order to achieve your goal. Take care of your frustrations in life. It's a way life is teaching you that your life is off the track and off the course when you are not using your talents, gifts and resources to the full extent. Benjamin Franklin said, "Those things that hurt, instruct."

There's a song by Baz Luhrmann called 'sunscreens'. He says, 'Worrying about the future is as effective as trying to solve an algebra equation by chewing bubblegum. The real troubles in your life will always be things that never crossed your worried mind.'

Some areas where EQ functions majorly are:

1. Ability to read non verbal and twisted communication: This means one can sense by the other person's face and body language how they are feeling. Or the ability to identify a snide comment.
2. Emotional resilience: Very often you fall back in life. You have setbacks and know there will be more coming. However, you also know you are strong enough to persevere until better times come. You do not internalize failure.
3. You know where you need improvement: you are always learning and therefore growing.

Unlike brain intelligence, emotional intelligence can be raised to some extent. Part of our EQ is innate, part of it is shaped by our environment and another part is our attitude. Are you



willing to learn to understand and conquer your emotions? Are you interested in becoming a better problem solver? Do you want to achieve your goals? Developing your EQ allows you the opportunity to avoid miscommunications and misunderstandings. It deepens your relationships and helps you balance work, home and fun in a meaningful way. Remember the biggest determinate of success is measured by EQ, not IQ.

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## Green Chemistry and its Application

**G**reen Chemistry gives equal importance to the cause of both environmental protection and industrial success. The goal of green chemistry is to design synthetic methods that reduce or eliminate the use of toxic materials. It is a tool to minimise the negative impacts of chemicals and processes involved in the production of chemicals.

Industry prefers to concentrate its technological development for the benefits of its economic growth, regardless of the pollution it generates. Green Chemistry involves the design and redesign of chemical synthesis and processes to prevent pollution, rendering the products cost effective as well as environment friendly.

Talking about the vivid applications of green chemistry in our daily life, green chemistry is developing pesticides that would only affect target organisms and degrade to harmless by-products. Also, such fertilisers are designed that can minimise usage while maximising effectiveness. Green chemistry is also developing methods of using agricultural wastes for beneficial and profitable uses.

Similarly, with the help of green chemistry, lead is being extracted out of automobile paints used to colour automobiles, like cars. This has proved that automobile paints without lead can also be developed and used for colouring automobiles.

Solvents are consumed in large quantities in many chemical synthesis as well as for cleaning and degreasing. Traditional solvents are often toxic or are chlorinated. Green solvents, on the other hand, are generally derived from renewable resources and biodegrade to harmless products, often a naturally occurring product.

Green Chemistry has changed the process of dry cleaning wherein a harmful solvent 'perchloroethylene' (PERC) is most widely used. PERC is suspected to cause cancer and its disposal can contaminate ground water. Liquid carbon dioxide can be used as a safer solvent. This method is now being used commercially by some dry cleaners.



## Green Chemistry's 12 principles:

1. **Prevent waste:** Leave no waste to treat or clean up.
2. **Maximize atom economy:** Waste few or no atoms.
3. **Design less hazardous chemical syntheses:** To use and generate substances with little or no toxicity to either humans or the environment.
4. **Design safer chemicals and products:** Design chemical products that are fully effective yet have little or no toxicity.
5. **Use safer solvents and reaction conditions.** Avoid using solvents, separation agents, or other auxiliary chemicals. If you must use these chemicals, use safer ones.
6. **Increase energy efficiency:** Run chemical reactions at room temperature and pressure whenever possible.
7. **Use renewable feedstocks:** Use starting materials that are renewable rather than depletable.
8. **Avoid chemical derivatives:** Avoid using blocking or protecting groups or any temporary modifications if possible.
9. **Use catalysts, not stoichiometric reagents:** Minimize waste by using catalytic reactions. Catalysts are effective in small amounts and can carry out a single reaction many times.
10. **Design chemicals and products to degrade after use:** Design chemical products to break down to harmless substances after use so that they do not accumulate in the environment.
11. **Analyze in real time to prevent pollution**
12. **Minimize the potential for accidents:** Design chemicals and their physical forms (solid, liquid, or gas) to minimize explosions, fires, and releases to the environment.

Several lakh tons of plastic waste generated every year in the country (which cannot be degraded otherwise) was posing a serious threat to the environment. Therefore, a new quality of plastic using organic waste and 'corn' has been developed (with the application of concepts of green chemistry) which is not only bio-degradable but also eco-friendly.

The daily used plastic products like toothbrush, pen, cutlery and even clothes that we wear can also be made bio-degradable with the application of green chemistry. Such stuff has already been developed.

**Reference:** YouTube, Wikipedia

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## Femininity and Masculinity

**B**y definition: Masculinity is possession of the qualities traditionally associated with men. And Femininity is the set of attributes, behaviors, and roles generally associated with girls and women. But the impact of these two words does not limit itself to the definition. It means more than just possession of masculine or feminine qualities. The general notion is that a man has only masculine qualities and a woman has only feminine qualities. This generalization has caused blunders in many people's lives.

Jaggi Vasudev explains this concept as: "When you were a caveman, the man took care of the survival process. Women took care of cooking, nurturing, creating a better ambience for life. So man fuels the survival process, the woman fuels that which makes it worthwhile to live. So these are two aspects fulfilled by masculine and feminine." Today these roles are played independent of gender. But the concrete social structure can be suffocating to both men and women in many ways. A woman has to act like a man, only then she is considered successful. If she acts in a feminine way, she is considered weak. "Masculine is power is a wrong perception. That wrong perception has seeped into the society." "Feminine is not weak; it's just fulfilling a different aspect of life. Without the ambience of the feminine, masculine will feel meaningless. We say, Shiva is Shava without Shakthi. That means Shiva, the highest Lord, will become a corpse if Shakthi doesn't dance around him. So that's a beautiful way of saying it." – Sadguru.

Everyone is suffering under their respective pressures. But masculinity particularly is at a greater loss. We've all heard the term 'feminist'. Some disagree and talk about 'equality'. I will again talk about 'equity'. The reason why feminism soared is because feminine is at huge risk today. But along with the empowerment of the feminine, the masculine needs help too.

Road rage, violence, ragging, 95% of crimes are committed by men. Not all men are violent, but a larger portion of them are. And they not only hurt women, but their fellow brothers and themselves altogether, unknowingly of course. We know that they are not born violent, it is therefore learnt behavior. On a popular show called 'Satyamev Jayate' they called on 5 men from different states of India to talk about this issue. They were asked about their childhood, what they were taught about a boy's ideal behavior.

A man from Delhi shared: "In his village, children were hung upside down in wells by their uncle, just for fun. If the boy cried they'd say 'Why are you crying? Aren't you a man?' He was forced to sleep on the terrace under the open sky at night during his summer vacations when he was merely 4 years old. It was a matter of shame even for a child to show that he is scared. If a kid went up to his father and said that he was afraid, the father would insult



him in front of everyone. If you have a wound, it heals. But an insult can stay with you for a lifetime. That too implied on such a young child!"

The second man from Banaras shared: "Women were not given importance, they weren't even considered human. They were objects. If a boy ever spoke to a girl respectfully, people would say 'He's not a man. He's a sissy.' He was not considered manly."

Another man shared: "The environment and teachings get automatically followed."

A man from Haryana shared: "I was never good at studies. When my younger sister passed the 5th grade I was in the 7th or 8th grade. The secondary school was a little far from the village. My family members said that I should go to school along with my sister, but I refused. I said I wouldn't go if she went. It hurt my self—respect to go to school with her. I completed my MA. I completed my B.Ed. But she couldn't study after the fifth grade. I felt as if I committed a murder. I killed her potential."

During a research many men admitted that they cannot even carry their children in public. They feel it's something very inferior. The women are supposed to do that. People laugh at a villager if he carries his child. Moreover a man's wife cannot walk beside him in the village; she has to stay a few steps behind him. Men are losing out on a lot. A society where emotions don't exist is bound to be ruthless and dangerous.

Women can wear pants and shirts, but men can't wear skirts and saree. A boy who cries is not considered man enough. A sensitive man, a boy who does household chores or cooks is teased as 'are tu bavarchi banega?' Boys are pampered in our culture since their childhood. All their demands are fulfilled. And as they grow up, if they don't get anything they want, they turn violent. When they feel angry, they don't know how to deal with their emotion, because they are never taught to understand themselves.

Kamla Bhasin, the author of 'Exploring Masculinity', who I think has the best understanding of this subject of manhood, says: "I think violence is somewhere connected to inequality and injustice; To power and authority." "I am powerful, so I'm right. There's no justice. Instead of loving power, understand the power of love. It's untrue that nature has got anything to do with manhood. There is only one natural difference, which is in the organs. Nature never forbids anyone from loving a person or carrying their child. Nature hasn't assigned any work to anyone. It's we who have done that. If we talk of nature, then Buddha couldn't give birth. That's the law of nature. But Buddha could be compassionate and sensitive." "A person who gets violent, not only affects other people but he himself gets severely affected. Something must have died inside that person. Power benefits, but humanity loses. What's greater humanity or power? It has been observed that in the last 15–20 years a lot of men have understood that what patriarchy does to men is fatal too. They're at loss too. Men are standing against manhood. And men will have to rise."



# Reflection 20<sup>18</sup><sub>19</sub>

The great news is men all over the world are speaking up now. Justin Baldoni recently released his show 'Man Enough' where he encourages men to talk about their feelings and issues. Lewis Howes, a former professional football player has shared his life experience in his book 'The Mask of Masculinity'. He has mentioned 9 masks of masculinity, some of which are: The alpha mask, the stoic mask, joker mask, the invincible mask, the material mask. He realized even after being successful, the things that were still missing were because of the hurdles that masculinity has to face. "What I've realized is greatness is not about being perfect, it's about being yourself, and being okay with all of your beautiful imperfections. It's allowing yourself to be vulnerable in those moments, and because vulnerability creates so much more trust in connection, community, love and unity and it allows people to see you for who you are, and not just as some perfect person that is unattainable in their own life." "Life isn't about dancing when no one is watching; life is about expressing yourself so others can dance with you." – Lewis Howes.

Masculinity is not exclusive to men and femininity is not exclusive to women. In Hindu culture it may be referred to as 'Shiva and Shakti' or in Chinese philosophy as Yin and Yang. You might be familiar with the Ardhanarishvara form, Shiva being masculine and Shakti being feminine. This is basically trying to manifest that the masculine and feminine are equally divided within a person, regardless of their gender. We as a society need to rise above the gender and understand these two dimensions of life, without which our life cannot work even in the most fundamental way. If you stop looking at life as dominance, if you're looking at life as integration, then without these two dimensions there is no existence. If any one of these aspects dominates it will turn ugly. During the construction of a temple, first the rocks are pulled out of a quarry, this needs masculine energy. Those rocks are cut to size, loaded in a truck and fixed to the walls. Then the craftsmen carve out beautiful carving on these rocks, this needs feminine energy. If that masculine work was not done, the feminine part would not be possible.

'What is the most beautiful in virile men is something feminine; what is most beautiful in feminine women is something masculine.' – Susan Sontag

**Manpreet Kaur A. Pabla**  
T.Y. B.Sc. Maths



## Rubik's Cube

"By and large it is uniformly true that in mathematics there is a time lapse between a mathematical discovery and the moment it becomes useful; and that this lapse can be anything from 30 to 100 years, in some cases even more; and that the whole system seems to function without any direction, without any reference to usefulness, and without any desire to do things which are useful."

John von Neumann  
COLLECTED WORKS, VI

We often ask our teachers what is the use of these long, often boring theories of science that we have to study. How much of it do we use in our daily lives? Some teachers make time to make their teaching style impactful by experimenting, making models, or even story telling. They try to make learning as fun as they can. Such was the professor of design and architecture, Erno Rubik! In 1974 at 30 years of age, the Hungarian sculptor and professor made a 3-D cube as a teaching aid. This cube was initially called 'The Magic Cube' which was later named 'Rubik's Cube'. He started observing the movements of the cube as he shifted each side and it took him a month to crack the code of his first cube.

There are 26 small cubes in a 3X3X3 Rubik's cube which look alike, but in the structure of the cube they have different rules. The cube is divided into 3 parts: 6 center pieces which are fixed, 8 corners, and 12 arrises. The most commonly used method to solve this cube is 3-layer revert method.

The World Cube Association (WCA) is the worldwide organization that regulates and holds competitions for mechanical puzzles that are operated by twisting groups of pieces, commonly known as twisty puzzles (a subcategory of combination puzzles). The most famous of those puzzles is the Rubik's Cube. The WCA was founded by Ron van Bruchem of the Netherlands and Tyson Mao of the United States.

Patrick Ponce, world's third fastest speedcuber said, "The medium age of speedcubers has gone lower and lower. Perhaps 10 years ago, 25 year olds were doing it and now you barely see anyone get to that age. Kids are dominating the rankings because they have more time to practice and probably have more time to go to some contests than an older person would do." "I probably know around 500–600 algorithms. That may seem like a lot, but I know people who know thousands of algorithms." There are different categories for world records such as: blind folded solving, one handed solving, fewest moves solving, clock solving, and multiple blindfolded solving. The current world record for the fastest solving was set by Feliks Zemdegs at the Melbourne Cube Day 2013, with a record time of 4.221 seconds.



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As geometry showers us with endless possibilities, there are tons of puzzles inspired from the Rubik's Cube. Some of the non-WCA puzzles are: 1x3x3 (floppy cube), void cube, mix up cube, Shang Sha 7x7, Giga minx, megaminx (dodecahedron), Calvin's puzzle cross cube, LAN LAN gear master morphix, meffert's gear barrel (a 3x3 cube modification into a barrel), 3x3x7, 1/2 proportional cubic 3x3x7, X cube barrel, and many others like Electronic Cubes, Fisher Cube, Helicopter Cube, Neo Cubes (Magnetic). Whereas 3x4x5, 2x3x4, 4x4x3 are shape shifting cubes.

Tyler Kochy, a 15 year old competitive speedcuber while sharing his experience said, "People think there's just a simple secret to learning how to solve it, that's not true. There are methods and algorithms that you need to learn to get fast. Algs and perms (short for algorithm and permutations). It's not all about results, that you shouldn't depend on results to have a good time. Just because you don't get the results, doesn't mean you should be sad." One doesn't have to be good at math to solve the cube, it's just people happen to be good at math that are good at cubing. But there can always be exceptions.

Permutations, logic and algorithm are associated with the solving of the cube. But what very few mathematicians associate the cube with is 'Group theory'. Professor W. D. Joyner wrote a book 'Mathematics of the Rubik's cube' in the year 1996-7. He has related logic and sets, functions, matrices, relations, counting, permutation, group theory, graph and 'God's Algorithm', symmetry groups on the platonic solids, homomorphisms, etcetera.

Erno Rubik is also best known for his inventions: Rubik's Magic, Rubik's Magic: Master Edition, and Rubik's Snake. Rubik is involved with several organizations such as Beyond Rubik's Cube, the Rubik Learning Initiative and the Judit Polgar Foundation all of whose aim is to engage students in science, mathematics, and problem solving at a young age.

No invention or a work of science can be small. Every contribution is a missing link in the chain. You never know to what extent you can take it and to what extent it can take you. "When you are growing up you discover it is probably much more interesting to find the questions than to find the answer for the questions because it is much more difficult to find new questions than to find the answers." – Erno Rubik.

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## Swine Flu

Swine flu is termed because the virus that first the caused disease had originated from pigs. Swine flu has spread to more than twenty countries across the world.

### Facts :

- Swine flu is an acute respiratory virus. It spreads through the medium of air.
- Swine flue also referred to as H<sub>1</sub>N<sub>1</sub> and swine influenza is caused by swine influenza virus.
- Symptoms of Swine flu resemble those of the seasonal flu such as coughing, sore throat, fever, chills, extreme tiredness, muscle aches and diarrhoea.
- Swine flu first surfaced in April 2009. It affected millions of people and then in June 2009 it was declared a pandemic by the World Health Organisation (WHO).
- Swine flu spreads rapidly and the mortality ratio is relatively low.
- WHO has assigned pandemic alert level 5 to swine flu. This level indicates that human to human outbreak of swine flu is high.
- An interesting fact is that many virologists and scientists have the view that the H<sub>1</sub>N<sub>1</sub> virus may not have evolved naturally and was created in a laboratory!
- People with weak immune system are at high risk of contacting swine flu.
- According to the World Health Organization, it is a fact that if a healthy person with a good immune system is infected by swine flu, he can recover within a week.
- Swine flu is a highly contagious respiratory disease caused by one of many influenza viruses.
- The disease is spread among pigs by direct and indirect contact that are infected but do not have symptoms.

### Causes of Swine Flu :

There are only a few causes of Swine flu in humans.

- Contact with infected pigs : This is the most common way of catching swine flu. Any contact with infected pigs makes transmission more likely.
- Contact with infected humans : This is much less common way of catching Swine flu, but is a risk, especially for those in close contact with an infected person.

### Risk Factors :

Some people are more at risk of catching swine flu than others.

- People aged over 65 years.
- Children under 5 years.
- People with chronic diseases.



- Pregnant women.
- Teenagers receiving long-term aspirin therapy
- Anyone with a compromised immune system.

## Symptoms :

The symptoms of Swine flu in humans are quite similar to those of regular flu and include:

- ♦ Body aches ♦ Chill ♦ Cough ♦ Headache ♦ Sore Throat ♦ Fever higher than 100° F
- ♦ Tiredness ♦ Vomiting and diarrhoea ♦ Chest congestion ♦ Running nose
- ♦ Pain in the muscles

## Complications of Swine flu :

- ♦ Worsening of existing chronic conditions, such as heart disease and asthma.
- ♦ Pneumonia
- ♦ Neurological signs and symptoms, ranging from confusion to seizures.
- ♦ Respiratory failure

## Diagnosis :

- ♦ Swine flu is mostly diagnosed through noting the symptoms.
- ♦ There is a quick test called the rapid influenza diagnostic test that can help identify swine flu.
- ♦ However, in a similar way to seasonal flu, symptoms are often mild and self-resolving.
- ♦ Most people do not receive a test for swine flu as treatment would be the same, regardless of the outcome.
- ♦ If symptoms are mild, it is extremely unlikely that any connection to Swine influenza is found, even if the virus is there.

## Home Remedies :

- ♦ Washing hands regularly with soap ♦ Getting plenty of sleep ♦ Exercising often
- ♦ Managing stress ♦ Drinking liquids ♦ Eating a balanced diet
- ♦ Refraining from touching surfaces that may have the virus.
- ♦ Do not get close to people who are sick. Be sure to stay away from crowds if there is a Swine flu outbreak in your area.

## Reduce the spread of infection :

- ♦ Limit contact with other people ♦ Do not go to work or school
- ♦ When coughing or sneezing cover the mouth with a tissue. Cover the mouth & nose.



- ♦ Put used tissues in a trash can ♦ Wash the hands and face regularly.
- ♦ Keep all surfaces that are touched clean ♦ Follow doctor's all instructions.

## Vaccine :

- ♦ A vaccine has been produced to protect humans against the H<sub>1</sub>N<sub>1</sub> strain of Swine flu.
- ♦ The status of Swine flu has changed from a pandemic to a seasonal type of human influenza
- ♦ People who are over 10 years old only require one shot of the vaccine.
- ♦ The U.S. Food and Drug Administration (FDA) recommends two shots for children under this age, to be taken four weeks apart.
- ♦ People with an egg allergy and children with severe asthma are at risk of an adverse reaction to this vaccine and should discuss the shot with a healthcare professional.

## Treatment :

- ♦ There are some drugs available that can effectively treat Swine flu
- ♦ The two main treatments are adamantanes, including amantudine and rimantudine and medications that inhibit the influenza neuramidase protein, such as oseltamivir and zanamivir.
- ♦ However most people with Swine influenza recover completely without the need of medical attention.

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## Bio – Terrorism

The use of infectious reagent or other harmful biological or biochemical substances as weapon of terrorism is called Bio–terrorism. Bio–terrorism is terrorism by international release or dissemination of biological agent such as bacteria, virus and some types of Fungi or toxins. They are also used to cause illness or death in people, animals or plants. Biological agents are typically found in nature but could be mutated or altered to increase their ability to caused diseases, make them resistant to current medicine or to increase their ability to spread it into the environment. Biological agents can be spread through air, water or food. Bio–terrorism is an attractive weapon because biological agents are relatively easy and inexpensive to obtain than others.



## Types of Agent:

There are three types of agent:

### Category A :

These high-priority agents pose a risk to national security, can be easily transmitted and disseminated, result in high mortality, have potential major public health impact, many cause public panic or special action for public health preparedness.

- ♦ Tularemia
- ♦ Bubonic plague
- ♦ Small pox
- ♦ Viral hemorrhagic fever
- ♦ Botulinum toxin
- ♦ Anthrax

### Category B :

Category B agents are moderately easy to disseminate and have low mortality rates

- ♦ Brucellosis
- ♦ Glanders
- ♦ Epsilon toxin of clostridium perfringens
- ♦ Melioidosis
- ♦ Food safety threats
- ♦ Psittacosis
- ♦ Ricin toxin from Ricinus Communis
- ♦ Q Fever
- ♦ Abrin toxin from Abrus precatorius
- ♦ Typhus
- ♦ Water supply threats
- ♦ Viral encephalitis

### Category C :

Category C agents are emerging pathogens that might be engineered for mass dissemination because of their availability, ease of production and dissemination, high mortality rate, or ability to cause a major health impact.

- ♦ Nipah virus
- ♦ HIV/AIDS
- ♦ Hanta Virus
- ♦ H<sub>1</sub>N<sub>1</sub> (a strain of influenza)
- ♦ SARS

Bio-terrorism is more effective than other threats or war. In 21st century biological war is more dangerous than the other weapons.

During the 19th century, the use of biological warfare became more sophisticated. With the new founded knowledge of **KOCH'S POSTULATES** and the development of modern microbiology, isolation and production of stocks of specific pathogens became possible.

### History of Bio-terrorism :

Shortly after the start of World War I, Germany launched a bio sabotage campaign in the United States, Russia and France. At that time Anton Dilger lived in Germany, but in 1915 he



was sent to the United states carrying cultured of glanders, a virulent diseases of horses and mules.

In 1972 police in Chicago arrested two college students. Allen and Stephan Pera, who had planned to poison the city's water supply with typhoid and other bacteria. Allen had founded a terrorist group, "R.I.S.E.", while Pera collected and grew cultures from the hospital where he worked

In 1980 the WHO announced the eradication of smallpox a highly contagious and incurable disease. Although the disease has been eliminated in the wild, frozen stocks of smallpox virus are still maintained by the governments of the U.S. and Russia. Disastrous consequences are feared if rogue politicians or terrorists were to get hold of the small pox strain. Since vaccination programs are now terminated, the world population is more susceptible to smallpox then ever before.

In Oregon in 1984, followers of the Bhagwan Shree Rajneesh attempted to control a local election by incapacitating the local population. This was done by infecting salad bars in 11 restaurants, produce in grocery stores, doorknobs and other public domains with Salmonella typhimurium bacteria in the city of the Dalles, Oregon. The attack infected 731 people with severe food poisoning. There were no fatalities.

This incident was the first known bioterrorist attack in the U.S. in the 20th century. It was also the single largest bioterrorism attack on U.S.

## **Bio–terrorism as a Realistic Threat :**

The Threat of bio–terrorism is more likely to occur now than ever before including the following:

- (1) As evident from past and present cases of bio–weapons, nations and dissident individuals and groups exist that have both the motivation and access to skill to develop and disperse biological agents.
- (2) The former Soviet Union's bio–weapons facility that was used to produce weaponized infectious disease, such as plague and anthrax, has missing stockpiles of its bio–weapons. Intelligence reports indicate that stockpiles were sold in the black–market to middle Eastern countries. Furthermore the scientists who worked in the offensive biological weapons program until the early 1990s have gone to other countries, such as North Korea and other Middle Eastern countries and are suspected to be collaborating with those governments in their clandestine bio–weapon programs.
- (3) Biotech is growing tremendously and there is readily information available on the Internet as to how to develop and manufacture sophisticated types of biological weapons with



modest cost. Furthermore, there are numerous publications in scientific journals, explaining how to produce very sophisticated, highly pathogenic agents.

- (4) Individuals with basic biology and engineering training could develop effective weapons at little cost.

## **Planning & Response :**

Planning may involve the development of biological identification systems. Until recently in the United States, most biological defence strategies have been geared to protecting soldiers on the battlefield rather than ordinary people in cities. Financial cutbacks have limited the tracking of disease outbreaks. Some outbreaks, such as food poisoning due to *E. coli* or *Salmonella*, could be of either natural or deliberate origin.

## **Preparedness :**

- ◆ Detection and resilience strategies in combating bioterrorism.
- ◆ Implementation of the Generation-3 automated detection system.
- ◆ Enhancing the technological capabilities of first responders
- ◆ Enhanced equipment for first responders.
- ◆ Project BioShield
- ◆ Excelsior Challenge.

## **Biosurveillance :**

In 1999, the University of Pittsburgh's Center for Biomedical Informatics deployed the first automated bioterrorism detection system, called RODS (Real-Time Outbreak Disease Surveillance). RODS is designed to draw collected data from many data sources and use them to perform signal detection, that is, to detect a possible bioterrorism event at the earliest possible moment. RODS, and other systems like it, collect data from sources including clinic data, laboratory data, and data from over-the-counter drug sales.

## **Some Research on devices to detect the existence of a Threat :**

Tiny electronic chips that would contain living nerve cells to warn of the presence of bacterial toxins.

Fiber-optic tubes lined with antibodies coupled to light-emitting molecules Eg. Anthrax, botulinum, ricin

New research shows that ultraviolet avalanche photo-diodes offer the high gain, reliability and robustness needed to detect anthrax and other bioterrorism agents in the air.



## Current Methods of Bio–threat Agent Detection :

Detection and identification of bio–threat agent include bio–sensing strategies based upon microbiological sensing technologies. This includes the use of antibodies, genomic analysis, biochemical testing and other cellular based responses and recognition interactions.

Mass spectrometry

Antibody based immunoassays

Microbiological culturing

Bioassay such as Polymerase Chain Reaction

Identification of viruses / bacteria such as Bacillus anthracis and Yersinia Pestis include the IA/MB/BA Method, for bacteria, and IA/IB methods to identify viruses.

Issues encountered by these biosensing platforms include factors such as the differing physiochemical properties of pathogens, the dipresence of different materials and matrices, differing pathology and etiology and the associated need to isolate, extract, purify and prepare samples for testing.

## Recommended competencies for Health Care First Responders :

The recommended competencies for health care first responders includes being familiar with the clinical features of illnesses caused by potential bioterrorism agents along with the clinical patterns seen when international outbreak are caused: knowledge of the medical counter measures available vaccines to prevent future cases, know how to report suspicions intermediately (i.e. alerting local law enforcement agencies: anticipate how patients with special needs such as children and the elderly will receive medical care during a biological emergency.

## Media Talk :

Bill Gates has warned that bioterrorism could kill more people than nuclear war.

In February 2018, a CNN employee discovered on an airplane a "sensitive, top secret document in the seatback pouch explaining how the department of homeland security would respond to a bioterrorism attack at the super bowl."

"The next weapon of mass destruction may not be a bomb." Lawrence O. Gostin, the director of the World Health Organisation's collaborating center on public health Law and Human Rights, told the New York Times. "It may be tiny pathogen that you can't see, smell or taste, and by the time we discover it, it will be too late."

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## Genomics

**G**enomics is the study of genomes and their interaction with the environment.

Genomics is an interdisciplinary field of science focusing on the structure, function, evolution, mapping & editing of Genomes.

A genome is an organism's complete set of DNA, including all of its genes.

### What Genomic tell us:

Assured with this "code of life", Scientists and entrepreneurs are exploiting genomic information to improve health, increase productivity in agriculture, forestry and fisheries and help clean up the environment.

Genomics approaches for improving salinity tolerance in crop plants.

### (1) Functional Genomics :

Functional genomics is a field of molecular biology that attempts to make use of the vast wealth of data given by genomic and transcription projects to describe gene functions & interaction.

### (2) Current Genomics :

Current Genomics is a peer-reviewed scientific journal covering all aspects of genomics. It was established in 2000 with Stefan M. Pulst as founding editor-in-chief and is published by Bentham Science Publishers.

### (3) Comparative Genomics :

- Genomes of viruses and bacteria evolve in a matter of days.
- Complex eukaryotic species evolve over millions of years.

Examples : Figer pufferfish fugu (rubripes) mouse (Mus Musculus) and Human genomers.

### (4) Human Genomics:

Human Genomics is a peer-reviewed, open access journal that focuses on the application of genomic analysis in all aspects at human health and diseases, as well as genomic analysis of drug efficiency and safety and comparative genomics.

### (5) Marine Genomics:

Genomics can be defined as discipline in genetics concerned with the study of genomes of organisms and the outburst of chromosomes, gene DNA. Many subbranches of genomics are



emerging, including marine genomics & these demand new ways of data management.

## Genomics 101:

Every cell of any living species contains genes. Genes are sequences of DNA that encode distinct pieces of information necessary for the survival and growth of all organisms.

The entire set of genes in an organisms is known as the genome passed from one generation to another, genes contain the essential instructions for building an organism and determine everything from our predisposition to disease to how some bacteria can survive extreme temperature.

## What is the difference between genomics and Genetic?

The main difference between genomics and genetic is that genetics scrutinize the functioning and composition of the single gene where as genomics addresses all genes and their inter relationship in order to identify their combined influence on the growth and development of the organisms.

## What is genomics used for?

Genomics is an area within genetics that concerns the sequencing and analysis of an organism's genome. The genome is the entire DNA content that is present within one cell of an organism.

Experts in genomics strive to determine complete DNA sequences and perform genetic mapping to help understand disease.

## Examples of Genomics:

### (1) Stable Genomics (inherited genes):

- BRCA 1 and 2 : Predictor of breast and ovarian cancer risks.
- LDIR and APOB : Predictor of developing early coronary artery disease.
- MODY 1–6 : Predictor at MODY diabetes: Subtypes affect treatment choice.
- CYP2D6/C19 : Main cytochrome P450 genes that affect drug metabolism – dosing.
- CYP2C9/VKORC 1 : Variants in these CP450 genes affect warfarin metabolism.
- TPMT : Guides adjustment of purinethal dosing in Acute leukaemia patients.

### (2) Dynamic Genomics (Gene expression, Biomarkers):

- Estrogen receptor : predicts response to Tamoxifen in breast cancer.
- HER – 2 Receptor : Predicts response to Herceptin in breast cancer.
- PSA : Predicts risks of prostate gland cancer.



- Cholesterol : Predicts risks of heart disease and strokes.
- HIV Genotyping : To guide selection of therapy.
- PET scance : to diagnose and help manage treatment option for various cancers.

### (3) Thermotogo maritina proteome:

The protein structure Initiative (PSI) solve the structures for all the proteins in Thermotogo maritima, a thermophilic bacteria.

T. maritima was selected as a structural genomics target based on its relatively small genome consisting of 1,877 genes and the hypothesis that the proteins expressed by a thermophilic bacteria would be easier to crystallize.

E.Coli was used to express all open–reading frames (ORFs) of R. martina. These proteins were then crystallized and structures were determined for successfully crystallized proteins using X–Ray crystallography.

Among other structures, this structural genomics approach allowed for the determination of the structure of the TMO449 protein, which was found to exhibit a more fold Ca tetramer with four interconnected active sites, each contain a flavin adenine dinucleotide molecule.

DNA sequencing machine allows scientists to read the genes and other pieces of DNA present in any genome like words, whose meaning is used, a gene's function can depend on what other genes are present in the genome.

Some areas of DNA that first appeared to have no function and which were labelled "Junk DNA" have overealed through more recent genomic studies that they may have essential roles in many cellular process.

### Food Safety:

Health Canada estimates there are 11 million cases of food–borne illness every year. Genomic analysis can allow food inspectors to quickly track pathogens like listerid or E.coli, relying on the genetic fingerprint of the micororganisms.

This could improve food safety and reduce the suffering and economic losses associated with food poisoning.

The same approach could also be used to ensure that the meat and fish we buy at the super market is accurately labelled.

### Manipulating the Genome :

Genetically modified organisms (GMOs) can be created by cutting and pasting genes from one organisms into another to obtain a desired trait. Genomics sequencing has allowed

scientists to better understand which genes are associated with which traits, such as resistance to drought or disease.

## Genomic research helps scientists to:

Discover new biomarkers or genes that are responsible for or indicative of certain traits of diseases.

Discover genes that are unique to an individual or a species. These genes can be used as a "bar-code" to identify organisms much like bar-codes are used to identify.

Breed plants and animals more effectively at reduced cost.

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## Life of Stephen Hawking

**S**tephen William Hawking was born in Oxford, England, on January 8, 1942; the 300th anniversary of the death of Galileo. His Father's name was Frank and Mother's name was Isobel. At the time of his birth, England was dealing with World War II. Also the family was not in good condition and wasn't having much money so they got back to Oxford and gave birth to their first child.

Physics is a natural science in which we study about matter, its behaviour, motion and energy on the basis of time and space.

Scientists, astronomer, cosmologist and many other people have contributed a lot in Physics as a result of which today we know lots of things about our surrounding, universe, etc. which have direct or indirect connection with Physics.

Out of those contributors one of them is Stephen Hawking. Stephen Hawking is world famous for his outstanding or we can say for his ground-breaking work on black hole. He was scientist, professor and even an author.





# Reflection 20<sup>18</sup><sub>19</sub>

Early in his academic life, Hawking, while recognized as bright, was not an exceptional student. Hawking focused on pursuits outside of school; he loved board games, and he and a few close friends created new games of their own. During his teens, Hawking along with several friends, constructed a computer out of recycled parts.

Hawking entered University College at Oxford University at the age of 17,. Although he expressed a desire to study mathematics, Oxford didn't offer a degree in that specialty, so Hawking gravitated toward physics and more specifically, cosmology.

In 1962, he graduated with honors in natural science and went on to attend Trinity Hall at Cambridge University for a PhD in cosmology.

Hawking first began to notice problems with his physical health while he was at Oxford – on occasion he would trip and fall, or slur his speech – he didn't look into the problem until 1963, during his first year at Cambridge.

At the age of 21, Stephen Hawking was diagnosed with amyotrophic lateral sclerosis (ALS, or Lou Gehrig's disease). In a very simple sense, the nerves that controlled his muscles were shutting down. At that time, doctors gave him two and a half years to live.

In 1974 his research turned him into a celebrity within the scientific world when he showed that black holes aren't the information vacuums. When Hawking's radiation theory was born, he was titled as a fellow of the Royal Society at the age of 32 years and then later he was honoured by a prestigious Albert Einstein award.

In 2007, at the age of 65, Hawking made an important step towards space travel on visiting the Kennedy Space Center in Florida, where he was given an opportunity to experience an environment without gravity. In his statement on 2007 he has said that, "Life on Earth is at ever – increasing risk of being wiped out by a disaster, such as sudden global warming, nuclear war, a genetically engineered virus or other danger. I think the human race has no future if it doesn't go into the space. I therefore want to encourage public interest in space."

Over the years, Stephen Hawking wrote or co-wrote a total of 15 Books. A few of the most noteworthy include : A brief History of Time (1988), Black Holes and Baby Universes and Other Essays (1983), The Universe in a Nutshell (2001), The Grand Design (2010).

On March 14, 2018, Hawking died in Cambridge, Cambridgeshire of complications from motor neuron disease at the age of 76 that was supposed to have killed him more than 50 years earlier.

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## Fibonacci Numbers in Nature

### Introduction:

Fibonacci sequence was first introduced by an outstanding Italian mathematician Fibonacci (Leonardo Pisano. 1175-1250) in his book Liber Abaci (1202). For he was born in the commercial center of Pisano, he was also called Leonardo of Pisano. When Fibonacci was a little child, he travelled with his father who worked as a businessman. He also travelled to other countries like Egypt, Greece and Syria to study mathematic knowledge from the east when he grew up.



Fibonacci sequence begins with  $a_0 = 0$ ,  $a_1 = 1$ , and each subsequent number is the sum of the previous two numbers, so the recursion formula of Fibonacci sequence is  $a_{n+i} = a_n + a_{n-i}$ . People thought the sequence contains the secret of nature, so they named it with the mathematician's name Fibonacci. In fact, Fibonacci sequence closely connects with nature, science and real life. Therefore it is widely used in many fields.





## Natural Calamities in India

**Keywords:** Natural disasters, droughts, flash floods, cyclones, landslides drought.

### Introduction:

Many natural disasters in India have caused a great disorder to the life and property of citizens and nature. Because of this, United Nation's General Assembly in 1989, declared the decade 1990–2000 as the international decade for Natural Disaster Reduction with the objective to reduce loss of lives and property and restrict Socio–economic damage. These disaster include cyclone, floods, earthquakes, volcanic eruptions, droughts, etc. Among all, floods and earthquakes are most common in India.

### Floods in India:

Floods are the most common natural disaster in India. Floods are high stream flow that overflows the natural banks of the rivers and most of the times become serious. The main causes of floods are excessive rain poor natural drainage, change of river's course. Rise in population over last few years is forcing large settlements along the river banks and making the country highly affected by floods. The most affected States of India are Uttar Pradesh, Bihar, Assam, West Bengal, Gujarat, Orissa, Andhra Pradesh, Madhya Pradesh, Maharashtra, Punjab and Jammu and Kashmir. Every year, on average thousands of people are affected, a few hundred lives are lost, thousands are homeless and thousands of square meters of crops are damaged.

### Cyclones in India:

Cyclone refers to a movement around or turn around in the atmosphere with very strong winds circulating around it in anti–clock wise direction in the northern hemisphere and clockwise in southern hemisphere. Cyclones are caused only over large water bodies like oceans as they require warm water to begin with – which also suggests that they are always formed near the equator. The most affected States of India are Andhra Pradesh, Odisha, Tamil Nadu, West Bengal, Pondicherry on East coast and Gujarat on West coast, etc.

### Earthquakes in India:

An earthquake is the shaking of the surface of the Earth, resulting from the sudden release of energy in the Earth's lithosphere that creates seismic waves. Earthquakes are caused by sudden tectonic movements in the Earth's crust, mine blasts and nuclear tests. The effects of earthquake are terrible. Many buildings, hospitals, schools, etc. are destroyed due to it. Many people lose their life, money, property, many get injured. It also affects the mental health and emotional health of people. The recorded earthquake in India was on 6th June, 1505, occurred in Saldang, Karnali zone. And the most recent one that happened was on 31st January,



2018, occurred in Kashmir, Pakistan, Afghanistan and Tajikistan. An earthquake is measured in Richter's scale. A Seismometer detects the vibration caused by an earthquake. The most affected States of India are Assam, Jammu and Kashmir, Delhi, Maharashtra, Tamil Nadu, Kerala, West Bengal, etc.

## Landslides in India:

Landslides are very common in lower Himalayas. Landslide is the sudden fall of mass of earth, rocks, etc. down the side of a mountain. Landslides occur when the slope changes from a stable to an unstable condition. One of the worst and most disastrous landslides has been recorded in the year 1998 in the state of Uttarakhand, where nearly 380 people were killed. The main causes of landslides are weak, weathered materials, physical property variation. Ground Uplift, erosion, Earthquake, Volcanic eruptions, etc. In India, the regions of Himalayas and Western Ghats are the most affected to these landslides.

## Drought in India:

Drought is the absence of water over an extended period of time. There are four types of droughts: (1) Meteorological Drought (2) Agricultural Drought (3) Hydrological Drought and (4) Socio-economic Drought. Defining drought is difficult, as it depends on differences in regions, needs and many more. Major drought-prone regions are Southern and Eastern Maharashtra, northern Karnataka, Andhra Pradesh, Odisha, Gujarat, Telangana and Rajasthan.

Andariya Maulika D.  
F.Y. B.Sc.

## Bioterrorism

**B**ioterrorism is terrorism involving intentional release or dissemination of biological agents. These agents are bacteria, viruses, fungi or toxins and may be in a naturally occurring or human-modified form in much the same way in biological warfare.

### Definition :

According to the U.S. Centers for Disease Control & Prevention, Bioterrorism is the deliberate release of viruses, bacteria, toxins or other harmful agents to cause illness or death in people, animals or plants.

These agents are typically found in nature, but could be mutated to increase their ability to cause disease, make them resistant to current medicines or to increase their ability to be spread into the environment. Biological agents can be spread through the air, water or food.

Terrorists tend to use biological agents because they are extremely difficult to detect and do cause illness for several hours to several days. Some bioterrorism agents like the smallpox virus, can be spread from person to person and some like Anthrax, cannot.



Bioterrorism is an attractive weapon because biological agents are relatively easy and inexpensive to obtain, can be easily disseminated and can cause widespread fear and panic beyond the actual physical damage. A biological weapon is useful to terrorists mainly as method of creating mass panic and disruption to a state or a country.

However, technologists such as Bill Joy have warned of the potential poer which genetic engineering might place in the hands of future bioterrorists. The use of agents that do not cause harm to humans but disrupt the economy.

A highly relevant pathogen in this context is the foot and moth disease (FMD) virus, which is capable of causing widespread economic damage and public concern. (As witnessed in 2001 and 2007 FMD outbreaks in the UK.)

## 20th Century

By the time World War I began, attempts to use anthrax were directed at animal populations. This generally proved to be ineffective. At that time, Anton Dilger lived in Germony, but in 1915 he was sent to the united states carrying culture of glanders, a virulent disease of horses and mules. He infected horses in Baltimore with glanders. In 1916, the Russian arrested a German agent, with similar intentions.

In 1972 police in Chicago arrested two college students, Allen Schwander and Stephen Pera, who had planned to poison the city's water supply with typhoid and other bacteria. In 1980 the World Health Organization (WHO) announced the eradication of smallpox, a highly contagious and incurable disease. Although the disease has been eliminated in the wild. In September and October 2015, several cases of anthrax broke out in the united states, apparently caused deliberately.

## Types of agents :

These high–priority agents pose a risk to national security, can be easily transmitted and disseminated, result in high mortality, have potential major public health impact, may cause public panic, or require special action for public health preparedness.

## Anthrax :

Experts believe that today, the most likely organism to be used in a bioterrorism attack would be *Bacillus anthracis*, the bacteria that cause anthrax. It is widely found in nature, easily produced in laboratory and survives for long time in the environment. Also it is versatile and can be released in powder, sprays, water or food. It can be spread by person to person. In 2001, anthrax spores were sent through the U.S. Postal system.

## Smallpox :

Smallpox is a highly contagious virus. It is transmitted easily through the atmosphere and has a high mortality rate (20–40%). Smallpox was eradicated in the world in the 1970s. Although people born pre–1970 will have been vaccinated for smallpox under the WHO program,



the effectiveness of vaccination is limited since the vaccine provides high level of immunity for only 3 to 5 years. Smallpox occurs only in humans, and has no external hosts or vectors.

## **Bubonic plague :**

Plague is a disease caused by the *Yersinia pestis* bacterium. The disease is transmitted by flea bites and occasionally by aerosol in the form of pneumonic plague into humans. It was the disease that caused the Black Death in Medieval Europe.

## **Botulinum toxin :**

The neurotoxin Botulinum is one of the deadliest toxins known, and is produced by the bacterium *Clostridium botulinum*. Botulism causes death by respiratory failure and paralysis.

Other infections which causes : Tularaemia, Cholera etc.

## **Response to bioterrorism incident or threat :**

United States Marine Corps' Chemical Biological Incident Response Force and the U.S. Army's 20th Support Command (CBRNE), which can detect, identify, and neutralize threats, and decontaminate victims exposed to bioterror agents. US response would include the Center for Disease Control.

Historically, governments and authorities have relied on quarantines to protect their populations. International bodies such as the World Health Organization already devote some of their resources to monitoring epidemics and have served clearing-house roles in historical epidemics. Media attention toward the seriousness of biological attacks increased in 2013–2014. In July 2013, Forbes published an article with the title "Bioterrorism".

In November 2013, Fox News reported on a new strain of botulism, saying that the Centers for Disease and Control lists botulism as one of two agents that have "the highest risks of mortality and morbidity". USA Today reported that the U.S. military in November was trying to develop a vaccine for troops from the bacteria that cause the disease Q fever.

In February 2014, the former special assistant and senior director for biodefense policy to President George W. Bush called the bioterrorism risk imminent and uncertain.

Bill Gates has warned that bioterrorism could kill more people than nuclear war.

In February 2018, a CNN employee discovered on an airplane a "sensitive, top-secret document in the seatback pouch explaining how the Department of Homeland Security would respond to a bioterrorism attack at the Super Bowl".

Dr. Tom Inglesy, the CEO and director of the Center for Health Security was referring to the lab synthesis of horsepox in 2017 by researchers at the University of Alberta. Those researchers recreated horsepox, an extinct cousin of the smallpox virus, in order to research new ways to treat cancer.

**Urvashi Rathod**  
T.Y. B.Sc. (Physics)



## Homi Jahangir Bhabha

**H**omi Jahangir Bhabha was an Indian nuclear Physicist, Founding Director and Professor of Physics at the Tata Institute of Fundamental Research (TIFR), colloquially known as "father of India nuclear programme". Bhabha was also the founding director of The Atomic Energy Establishment, Trombay, (AEET), which is now named The Bhabha Atomic Research Center in his honor. TIFR and AEET were the cornerstone of Indian development of nuclear weapons which Bhabha also supervised as director.

Homi Bhabha was born on 30, October, 1909, Mumbai, son of a barrister. He grew up in a privileged environment. In Mumbai he attended the cathedral & John Connon School and Elphinston College, followed by the Royal Institute of Science. After passing the senior Cambridge examination at the age of sixteen, he joined the Gonville and Caius College in Cambridge with an intention to pursue mechanical engineering. His mathematics tutor was Paul Dirc and Bhabha became fascinated with mathematics and theoretical Physics. He earned his engineering degree in 1930 and Ph.D. in 1943.

In, 1937 together with W. Heitler, a German physicist, Bhabha solved the riddle about cosmic rays. Bhabha's discovery of the presence of nuclear particles in cosmic rays was used to validate Einstein's theory of relativity making him world famous.

When the war broke out in Europe, Bhabha was on a holiday in India. In 1940, B.V. Raman, then head of the Physics Department, Indian Institute of Science (IISc), Bangalore, persuade Bhabha to join the institute as a Reader in Physics and Bhabha decided to stay back in India. In 1941, Homi Bhabha was elected fellow of the Royal Society, London in recognition of his contributions to the field of cosmic rays elementary particles and quantum mechanics.

Bhabha soon realized the need for an institute, fully devoted to fundamental research and wrote to J.R.D. Tata for funding. This resulted in the establishment of the Tata Institute of Fundamental Research (TIFR) in Mumbai in 1945 with Bhabha as the Director, a position he held until his death in 1948. Homi Bhabha was appointed the Chairman of the International Atomic Energy Commission. Under his guidance nuclear reactors like the Apsara and Zerlina were built. He gained international recognition for his excellent work and served as the President of the First United Nations conference on the peaceful uses of Atomic Energy, which was held in Geneva in 1955. He was the President of International Union of Pure and Applied Physics from 1960 to 1963.

A multi faceted personality, Bhabha was immensely fond of music, painting and writing. Some of his paintings are displayed in the British Art Galleries and the TIFR art collection, today is rated as one of the best collections of contemporary Indian art in the country.

He is the recipient of the Adam's Award, Padma Bhushan, and Honorary Fellow of the American Academy of Art and Sciences and Forging Associate of the National Academy of Sciences in the United States.

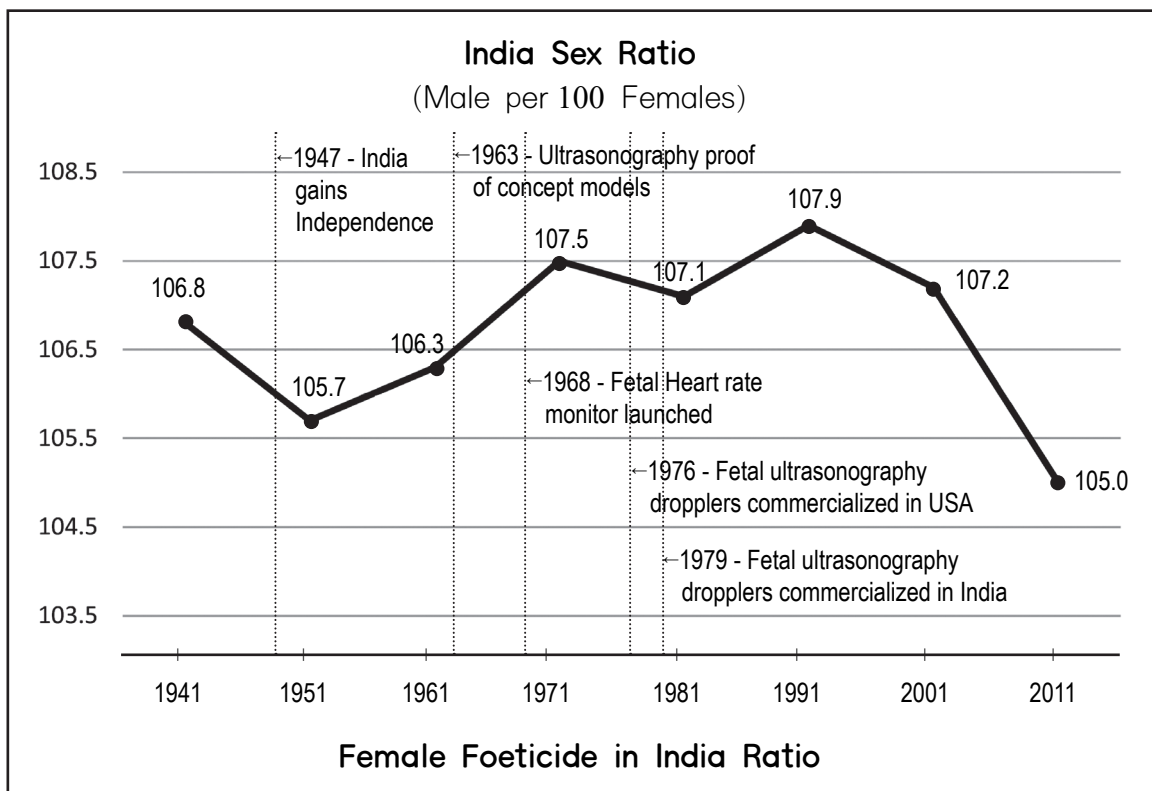
**Manvar Deepkumar K.**  
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## Female Foeticide

Female foeticide is the practise of aborting a foetus when a person finds out that the foetus is female after undergoing a sex determination test known as prenatal diagnostic test.

Whereas female infanticide is killing the girl child after her birth.



Due to such high ratio of femal foeticide there would be increased gender disparity, lives lost, a high sex ratio, lack of development and abuse and violence against women and children. Families do not often keep this spellover in mind and this results in sex selection and female foeticide, which hurts society as a whole.

As Macpherson (2007) notes, there can be significant differences in gender violence and access to food, healthcare, immunizations between male and female children. This leads to high infant and childhood morality among girls, which causes change in sex ratio.

### Laws Against Female Foeticide:

The Indian Government has passed pre-Conception and pre-natal Diagnostic Technques Act (PCPNDT) in 1994 to ban and punish prenatal sex sceening and female foeticide. It is currently illegal in India to determine or disclose sex of the foetus to anyone.

India passed its first abortion - related law in 1971, the so - called Medical Termination of Pregnancy Act, which made abortion legit in almost all states of the country, but it was particularly made for the cases of medical risk to the mother and child conceived by rape.



## Consequence of female foeticide:

Repercussions of female foeticide are long term and disastrous in nature.

1. Skewed sex Ratio: In India, the number of girls per 1000 boys is reducing with each passing decade.
2. Female / women trafficking: The sharp decline in the number of girls makes them sparse for the increasing number of eligible males for marriage. Due to this reason, illegal trafficking of women has become prevalent in many regions. Child marriages have become a rage and child pregnancies, a disastrous consequence.
3. Increase in rape and assault: Due to the decline in availability of females, the surviving ones are faced with the reality of handling a society driven by a testosterone high mall. The legal system might offer protection, but many cases might not even surface because of the fear of desolation and humiliation on the girl's part.
4. Population decline: With no mothers or wombs to bear a child (male or female), there would be fewer birth. Leading to a rapid reduction in the country's population.

## Government schemes for women:

1. Beti Bachoo, Beti Padhoa, (Jan. 2015) meant for uplifting women in the sphere of women's education.
2. Sukanya Samridhi Account. (Jan. 2015) meant to help families save for their daughters.
3. One Stop Center Scheme (April 2015) meant to offer easy access for women suffering from domestic abuse or violence, and needing support.
4. Pradhan Mantri Ujjwala Yojana. (March 2016) meant to offer free LPG connections to women living below poverty line.
5. Manila E-Haat, (March 2016) meant to support women entrepreneurs and women self help groups.
6. Rajiv Gandhi National Creche Scheme for Children of Working Mothers, (2006) meant to provide affordable daycare service to working women.
7. Maternity Benefit Program, (2017) meant for pregnant women and lactating mothers.
8. Women's Helpline (April 2015) 1091 meant to provide emergency assistance to women in trouble, especially those facing violence of any kind.

**Hariom V. Patel**  
F.Y. B.Sc. Biology



## Physics in Our Day to Day Life

Physics extends well into our everyday life, describing the motion, forces and energy of ordinary experience. In actions such as walking, driving a car or using a phone, physics is at work. For everyday living, all the technologies you might take for granted exploit the rules of physics.

Any sort of technology which we uses in our daily life is related to physics.

1. Physics is and exciting intellectual adventure that inspires young people and expands the frontiers of our knowledge about Nature.
2. Physics is and important element in the education of chemists, engineers and computer scientists, as well as practitioners of the other physical and biomedical sciences.
3. Physics generates Fundamental knowledge needed for the future technological advances that will continue to drive the economic engines of the world.

### Physics in Internet:

Internet is layman language is nothing but a group of data which are invisible in nature but can be seen on computers. Internet is a grid of digital and analogue signals which are modulated and de modulated into each other using a MO–DEM. Internet come under wave mechanics because internet is motion of data in the form of waves.

### Transportation and newton's laws:

The transportation industry is no stranger to the manipulation of everyday physics. cars and trains utilize the wheel, which provides a smooth steady motion. Newton's law of motion are at work as mechanical force and acceteration, action, reaction and inertia.

### Application of physics in everyday life:

Physics extends well into your everyday life, describing the motion, forces and energy of ordinary experience. In actions such as walking driving a car or using a phone, Physics is applicable.

### Relativity and modern communication:

Physics is all relative this theme resonates through Einstein's special and general theories of relativity. Einstein's work is crucially important to GPS in your phone. For example It takes radio signal from several satellites orbiting the earth and calculates your location—accurate to several centimetres. Because the speed and height of the satellites alters the signal very slightly, the smart—phone adoust the results using Einstein's theories, without a helping hand from relativity, GPS would be far less accurate or usefull.

### Conclusion

Physics is the most Fundamental of the sciences. Physics is beautiful. Physics teaches us to think. Physics gives us a new appreciation of the world around us.

**Ashvin K. Suva**  
T.Y. B.Sc. Physics

**Charmi J. Faldu**  
T.Y. B.Sc. Physics



## School Days

**T**hose pen fights  
And fighting for cake's first bite  
Homeworks & Projects  
Those competitions for becoming class prefect  
Waiting for lunch time  
And sharing with partners in crime.  
Having secret codes  
Crazy peoples abode  
Always in need of holidays  
Asking for extra sundays  
Assignments, Tests & Exams  
Coming regularly like Hams  
I feel nostalgic  
Missing those talks without logics  
Those days we always miss  
Only phase of life which was Bliss.

## Sky

**I** wish someday  
I can dissolve in the sky  
And be a distant star  
Don't ask me why.  
Because, the stars hold secrets  
You know, when you look up & smile  
and each sunset is a new shade  
New moments, waiting to be a memory  
all the while.  
I want to be infinite  
Just like the horizon vast  
Only bounded by the azure sky  
Which is limitless – has no firsts or lasts  
To get every inch of my soul diffused  
Up there, I wish I could try  
Because the deepest parts of me know,  
that my heart belongs to the sky.

## There is a land, far far away...

**T**here is a land  
far far away.  
Where to your own music,  
without regrets you can sway.  
Where no one judges,  
Where you are all free.  
To do what your heart desires,  
And you could be what you want to be.  
Where there are people close  
Positivity & care all around.  
Smiles in the mist,  
And beauty in the ground.  
There is a land,  
far far away.  
Where all form of love resides,  
And stays with you till you are old & gray.

## Physics

**I** understand its gravity  
for all students its similar to tragedy.  
The momentum it holds  
theories very old  
The way it accelerates my mid  
It is one of its kind, which you won't find.  
Apple is at fault  
to which every student revolt.  
Conversation has a law  
its a science with no flaw.  
Difficult all say  
to pass in this subject, they always pray.  
King of science  
and has magical presence.

**Pratibha Singh**  
S.Y. B.Sc. Physics



## Blossom

I wasn't before and now I am.  
That is the nature of the word.  
And the nature of livign the daily exasperation.  
We are hunted by our own heads.  
I really turned my life around, I sent it  
Sorrowfully floating into a new function.  
But I turned it good. The bleeding stopped.  
Soon enough I was back to capital love with  
no more bullets.  
Soon enough, I blossomed,  
like the sun that rises  
Over and over again.  
But once, it did not  
Sometime at night, I wonder  
if the morning will ever come.

## Life

I've searched my soul but hard as I've tried  
I find my religion is "unclassified".  
I believe in nature and laughter and love  
And goodness and mercy and a God up above.  
The Sun and rain and the winds that blow  
And a hundred earthy things that I know  
But I don't fit in, in a civilized way.  
To the rules and the customs that people say.  
My heaven's on earth; it's the things that I share  
With the whole human race. I really care.  
And when I'm gone and just ashes remain  
I'll be part of the earth and the wind and the rain  
It's my "everlasting"... It seems right to me  
In the big scheme of life, it's the way it should be.  
Life has been good and I don't fear the night  
It's part of God's plan and I know it's all right.

## Recycling Song

Save save save your papers,  
throw them in the bin.  
We can help to save the Earth if.  
We all pitch in.  
Save save save your bottles,  
throw them in the bin.  
We can help to save the Earth if.  
We all pitch in.  
Save save save your cans,  
throw them in the bin.  
We can help to save the Earth if.  
We all pitch in.  
Save save save your plastics,  
throw them in the bin.  
We can help to save the Earth if.  
We all pitch in.

Prachi A. Megha  
S.Y. B.Sc.



## Ek Ladki hoon main....

Ek Ladki hoon main, Insaan hoon,  
Koi cheez nahin...  
Apni baaton ko apne pass hi rakhna  
I am a girl...  
Koi piece nahin...  
Mere kapdon ke pahen ne ke dhang pe,  
Sawaal uthate ho tum...  
Meri marzi pe apna huk jatane wale,  
Kaun hote ho tum ?  
Har meri baat ko, Har mere kaam ko,  
Galat kyun bataya jata hai ?  
Gunah koi aur kare par kusoos vaar,  
Mujhe he kyu thehraya jata hai ?  
Andhera hone ke baad ghar se bahar,  
Mat nikalna log galat samjenge.  
Dupatta zarabhi sarak na jaye,  
Log kya kahenge...log kya kahenge...  
Log he logon se darate hain...  
Apni baaton se satati hai ye society mujhe,  
Par koi bhi khud pe guilty nahin.  
Kab samjengi ye duniya ek akeli ladki  
Responsibility hoti hai opportunity nahin...  
Ek ladke ke saath ladkiyon ka group ho toh,  
Voh cool stud kehlate hain...  
Par ladkoke saath main agar ek bhi ladki present ho toh...  
Kyun use slut ka tag diya jata hai ?  
Mere kapdon pe logo ki nazar rehti hai,  
Apni nazar pe nazar nahin.  
Shayad apni soch ki inko khabar nahin,  
Mujhe kamzoor samajne ki bhool mat karna.  
Acha lagega jab koi ladkiyo ko respect se dekhe  
Aise dekhe ki wo apne baal adjusr kar rahi hoon  
Na ki apna top.

Please Girls don't lower your standard for anyone or anything because self respect is everything.

**Prachi A. Megha**  
S.Y. B.Sc. (Microbiology)



## Vrindaavan

Away from the shades of terror and destruction,  
Away from hunger and worldly fears,  
Away from the smokes that kill our breaths,  
Away from pain, agony and tears.

Where rivers flow with Amrit in them,  
Novel woods with all fauna,  
With sparrows chirping and grazing deers.

Where green forest beyond ambit are spread  
Where crops are grown without chemicals of death.

A place better than city of Rome  
With none of orphanages,  
Without on old age home.

With only merry of Mohan's flute around,  
No cries of anguish,  
Nor a violent sound

Let's beat the Paradise,  
Let's beat the heaven,  
Come an wake up  
Let's make it Vrindaavan.

## A Glance of Her

A glance of her gives lot of zeal,  
A glance of her gives me a weird fresh feel.

It fills life in me, the glow of her face,  
When I look at her time slows its pace.

I lose my interest in things around,  
I don't mind what's lost, what's found.

I think of grounds to talk to her,  
To have words with her is great adventure.

I fetch glitters deep from her eyes,  
Pile up charm on her face that lies.

Oh ! That moment when she gives me a smile,  
My heart stops beating for that while.

The sluggish time finally gets away,  
She goes taking her own way.

I follow her charm,  
Till the ambit I can see,  
Then pretend as if departure doesn't bother me.

**Amandeep Singh Saini**  
S.Y. Zoology



## Maa

It is true  
I was created in you.  
It's also true  
That you were created for me  
I own your voice  
It was shaped and tuned to soothe me  
Your arms were moulded  
into a cradle to hold me, to rock me  
The scent of your body was the air  
Perjured for me to breathe  
Mother,  
During those early, dearest, dearest days  
I did not dream that you had  
a large life which indeeded me,  
For I had a life  
Which was only you  
Time passed steadily  
and I feared the moment when I will have to  
Leave your lap  
To face a world full of conflicts  
Still you were there to hold me still  
If I stumbled  
I was blessed with a sense of health,  
Strength and very good fortune

You loved me even during the years  
When for me  
You knew nothing and  
I knew everything  
Still you loved me even if I  
Spoke sharply to you  
Then I grew older and  
Found you to be an ocean  
Full of Love, Wisdom and Forgiveness  
Mother  
I have learned enough now  
To know I have learned nearly nothing  
On this day when they say that I've  
to leave your shade to grow  
I crave for your smiles and frowns  
Let me thank you  
that my ignorance and whims  
didn't bring you to  
Care for me less  
I thank you that  
You still find something in me  
To cherish, to admire and to love  
I thank you, Mother  
I Love You.

Prakash Prajapati  
F.Y. B.Sc.



## Journey

**W**ith faith in our dreams we took our first energetic walk,  
To come far away from home and begin all alone.  
With love and a smile, we welcome every curve in our life,  
To shine like diamonds, to rise beyond the above.  
We imagine the future to build an empire,  
Polishing our way, learning about diamonds,  
Skip our handles, we far exceeded our desires.  
We moved with force, united as a family supporting each other,  
Through thick and through thin.  
We explored difficult fields, with a vanquishing speech.  
To extend our reach and leave a lasting mark.  
We unified with the community, sharing our traits,  
To exchange knowledge and joy, to do something great.  
The journey has been like a mother in all these decades,  
Teaching us with love, lessons out of mistakes.  
With speed of light we aim to progress,  
To catch the opportunities,  
To spread Happiness !

**Shivani N. Sata**  
T.Y. B.Sc. (Chemistry)

## College Days

College is the place which has gone through every sentiment,  
Some things happen for fun, else it judges your temperament.  
Friends make it crazy while lectures make it monotonous,  
The controversies ever happened are still by anonymous.  
Events happened till now are just updating my memory list,  
The assignments given to complete bring a whole lot of twist.  
Last day submission, drafting whole night long has been in routine,  
Wasting the time is in nerves by just watching onto the mobile screen.  
College without friends make it look like sugar without sweetness,  
They are the reason for the strengths from your weakness.  
I will be always grateful to god for his greatness,  
Or else this college would have been a mystery and tasteless.

**Kirti Chandgothia**  
F.Y. B.Sc.

## ફ્યુઝન પાવર

કોઈ વિજ્ઞાનીએ ફ્યુઝન પાવરનું સ્વપ્ન ફળિભૂત થવા આડેની સંભવિત મુદત જણાવવાનું કહે તો એ 40 વર્ષનો ફિગર ટાંકે, કારણ કે એ જવાબ પેલા પ્લાંક અચળાંક જેવો પર્મેનન્ટ છે... અને છેલ્લા 40 વર્ષથી આપતો રહ્યો છે. જુદી રીતે કહો તો ફ્યુઝન પાવર મૃગજળ છે. વિજ્ઞાનીઓ તેની પાછળ ગમે તેટલી ઝડપે દોટ મુકે તો પણ તે હંમેશા ચાલીસ વર્ષ આગળ ભાગે છે.

આ સ્થિતિને જગતનાં 28 પ્રાયોગિક ફ્યુઝન પાવર મથકો બદલી શક્યાં નથી. ઘણા દેશો પોતપોતાની રીતે મથામણો કરીને થાક્યા બાદ હવે તેઓ સંયુક્ત પ્રયાસ અજમાવી જોવા માટે આંતરરાષ્ટ્રિય સમજૂતી હેઠળ ભેગ થયા. રશિયા, અમેરિકા, યુરોપિયન યુનિયન, ભારત, જાપાન, દક્ષિણ કોરીયા અને ચીન એમ સાત પાર્ટનરોએ નવેમ્બર 21, 2006ના રોજ સમજૂતી પર સહિસિક્કા કર્યા. ઈન્ટરનેશનલ થર્મોન્યુક્લિયર એક્સ્પરીમેન્ટલ રીએક્ટર / ITER નામનું બહુરાષ્ટ્રિય ફ્યુઝન પાવરમથક તેમણે દક્ષિણ ફ્રાન્સમાં સ્થાપવાનું નક્કી કર્યું. આ મહત્વાકાંક્ષી પ્રોજેક્ટ 10 અબજ યુરો ડોલરનો છે અને સાત પાર્ટનરોના કુલ 400 સંશોધકોનું બુદ્ધિદાન તેમાં સંયુક્ત ધોરણે વપરાવાનું છે. ઊર્જાસંકટની નાબુદી માટેનો એ છેલ્લો જુગારી દાવ જો સફળ થયો તો પાર્ટનર દેશો ભવિષ્યમાં પેટ્રોલિયમના ઓશિયારા રહેવાના નથી. કારણ કે ફ્યુઝન પાવર ઉત્પન કરવા માટે ઉપયોગમાં લેવાતું 1 ગ્રામ ફ્યુઝન 9,000 લીટર પેટ્રોલિયમ જેટલી ઊર્જા આપી શકે છે.

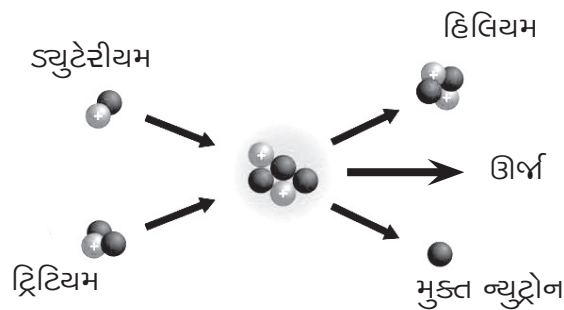
ઊર્જા મેળવવામાં અડચણ ક્યાં નડે છે તે જુઓ:

ફ્યુઝન પાવર મથકમાં અણુનું વિભાજન થાય, તો ફ્યુઝન પાવરનું મથક અણુના સંયોજન દ્વારા એનર્જીને મુક્ત કરે છે. અહીં મુખ્ય કાર્યો માલ સમુદ્રી પાણી / H<sub>2</sub>O છે જેમાંથી ફ્યુઝન પાવર માટે હાઈડ્રોજનના ડ્યુટેરીયમ નામનાં ભારે અણુ મળી રહે છે. હાઈડ્રોજનના બીજા બારે અણુ ટ્રિટિયમ સાથે ડ્યુટેરીયમ સંયોજન પામે કે તરત હિલિયમ ઉત્પરંત સિંગલ ન્યુટ્રોનનું સર્જન થાય છે અને કેટલાક પદાર્થ E = mc<sup>2</sup>ના ધોરણે ઊર્જામાં ફેરવાય છે. સમસ્યા એ છે કે ફ્યુઝન પાવર મથકમાં હાઈડ્રોજનના પ્લાઝમારૂપી જથ્થાનું તાપમાન 10,00,00,000° સેલ્સિયસે એકદમ ટકી રહેવું જોઈએ, કારણ કે એ વગર સમાન વીજભારવાળા ડ્યુટેરિયમના અને ટ્રિટિયમના અણુ વેગીલી અફરાતફરી મચાવીને ફ્યુઝન માટે ભેગા થાય નહિ.

બીજી સમસ્યા:

હાઈડ્રોજનનો ઘગઘગતો પ્લાઝમા તેના ધાતુમય પાત્રની દીવાલને સ્પર્શી જાય તો ગરમીનું ઓચિંતુ લીકેજ થતા ફ્યુઝનની પ્રક્રિયાને બ્રેક લાગે, માટે પ્લાઝમાને ચોતરફી વિદ્યુતચુંબકોના ચુંબકિય ક્ષેત્ર વચ્ચે અલિપ્ત રાખવો જોઈએ.

આ બન્ને સમસ્યાઓ વર્ષો સુધી ફ્યુઝન પાવરના સંશોધકોને પડકારતી રહી છે. દરિયાના 1 lit. પાણીમાંથી 300 lit. પેટ્રોલ જેટલી એનર્જી મેળવવાની સ્વપ્નસિદ્ધિ માટે હાથ ધરાયેલું મિશન એ ક્ષેત્ર કદાચ છેલ્લુ અભિયાન છે, જેમાં ચારસો સંશોધકો દ્વારા સંયુક્ત રીતે લગાડવામાં આવતો બ્રેઈનપાવર કદાચ ફ્યુઝન પાવરનું ગંગાવતરણ કરાવે પણ ખરો.



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## FOOD – આહાર

એક દિવસ મારી એક મિત્રએ મને પ્રશ્ન કર્યો, “શું તને ભોજન (food) બનાવવું ગમે?” મેં વિચાર્યું, “હા! મને ગમે, પરંતુ કયા પ્રકારનું...?”

ના-ના, હું તમને વાનગીના નામ નથી પૂછી રહી... પરંતુ મારો પ્રશ્ન છે કે શારીરિક ભોજન કે માનસિક ભોજન ! હા... બરાબર સમજ્યાં... શું જેમ શરીરને ટકી રહેવા શારીરિક ભોજન (physical food) ની જરૂર છે એમ મનને આ સમાજમાં ટકી રહેવા ભોજનની જરૂર નહિ પડતી હોય!

આપણે સહજ અને સામાન્ય પણે આપણાં ભાવતાં ભોજનની વાત કરતાં કે પૂછતાં રહીએ છીએ. સાથે સાથે તેને બનાવવાની પદ્ધતિઓ પર ધ્યાન આપતાં હોઈએ છીએ. પરંતુ આપણા માનસિક આહારનું શું ? આપણાં મન માટે કયો આહાર સૌથી અનુકૂળ અને સ્વાસ્થ્યવર્ધક હશે? તમને શું ભાવે? આપણું ભોજન વળી કોણ બનાવતું હશે? આપણો આહાર શું છે?

કહેવાય છે... અન્ન એવો ઓડકાર, તો શું આપણે માનસિક આહારની ચિંતા ન કરવી જોઈએ? વાસ્તવમાં જેમ આપણને શારીરિક ભૂખ લાગે છે તેવી જ રીતે માનસિક ભૂખ પણ લાગે છે, જેમ આપણને ભૂખ લાગે અને તાજું ભોજન ન મળતાં આપણે કંઈ પણ ખાવા તૈયાર થઈ જઈએ તેવું જ માનસિક ભૂખની બાબતમાં પણ છે. તો ફરી એ જ પ્રશ્ન શું છે આપણા માનસિક આહાર?

ઉત્તર છે - જે પણ દૃશ્ય, શ્રાવ્ય અને સ્પર્શ ઈન્દ્રિય પ્રભાવક પરિસ્થિતિ આનંદદાયક હોય તેને આપણું મન આહાર તરીકે સ્વીકારે છે, જેમ અને સ્વાદ ઈન્દ્રિય આપણને શારીરિક ભૂખને સંતોષવામાં મદદરૂપ છે તેવું જ માનસિક આહારમાં પંચએન્દ્રિય સહાયક છે.

તો આવા માનસિક ખોરાકમાં સમાવેશ થાય છે - પુસ્તકો, સાહિત્યો, કલા, લાલિત્ય મનોરંજક ફિલ્મો અને સંગીત વગેરે. દરેક આનંદદાયક માધ્યમો. આ મુજબ જો વિચારીએ તો લેખકો, કલાકારો, નિર્દેશકો, નૃત્યકો અને સંગીતકારો વગેરે આપણાં માનસિક ભોજન બનાવનાર છે અને તેમની પસંદગી આપણાં જીવન અને તેના ઘડતરમાં અતિ મહત્વપૂર્ણ ભાગ પણ ભજવે છે. તો તેમની પસંદગીમાં આપણે સાવધાની અને ચોકસાઈ શા માટે ન રાખવી!

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## કાવ્ય રચના

આપણે મસ્ત બગીચામાં બેઠા હોઈએ અને બગીચામાં રહેલા રંગબેરંગી ફૂલો હોય! મસ્ત પવન ફૂંકાતો હોય અને ફૂલો મસ્ત પવનમાં લહેરાતા હોય. એવામાં એક સુંદર પતંગીયું ફૂલો પર આવીને બેસી જાય. આબુબાબુનાં વૃક્ષો પર બેઠેલી કોયલ અને ચકલીથી આખું વાતાવરણ કલરવમય બની જાય, તો આખું મનમોહિ લેનારું દૃશ્ય મનને શાંતિ આપે છે. કવિની નજર કલમ અને કાગળમાં આ દૃશ્ય કેદ કરી લેશે અને આ દૃશ્ય કાચમીરૂપે એના મનમાં જીવંત રહેશે. તો આ સુંદર દૃશ્યને કોઈ કવિ આમ આલેખે છે:

“આ જીંદગી દોડધામ ભરી,  
મનમાં છે હલચલ ઘણી,  
દોડ્યો હું બાગ ભણી,  
ને બેઠો હું તાં ઘડીક.  
આહા!!  
મનને શાંતિ મળી,  
મસ્ત ધીમી પવનની લહેરખી,  
ને ફૂલડા નાચે મન મુકી.  
પતંગીયું આકર્ષાયુ ફૂલડાં થકી,”

આ દૃશ્યને એક સાદી ભાષામાં આલેખાયું છે. આમાં અલંકાર અને વિશેષણ ઉમેરીને સુંદર આલેખન કરી શકાય છે.

આપણી કલ્પનાને પણ મનગમતા વિશેષણો, અલંકારો ઉમેરીને સુંદર મજાનું કાવ્ય રચી શકીએ છીએ. કોલેજનાં સમયમાં વિદ્યાર્થીઓને પોતાના વર્ગની પાટલીઓ સાથે એક સંબંધ બની જતો હોય છે. આપણે જોઈ શકીએ કે અમુક વિદ્યાર્થીઓ નિયમિત પણે એક જ પાટલી પર બેસતા હોય છે. જો કોઈ બીજું એની જગ્યાએ બેસી ગયું હોય તો એની સાથે ઝગડો કરીને પણ એ જગ્યાએ બેસી જશે. તો, આ પણ એક પ્રકારનો સંબંધ થયો. તો કવિ આ સંબંધને દર્શાવીને કોલેજનાં દિવસોને મનમાં હંમેશની માટે જીવંત રાખશે.

“કોલેજનાં એ સમયની પણ મજા,  
સમયસર આવવું લાગતુ સખા,  
પાટલીઓ પર પોતાનો હક,  
મન ફાવે એમ તું લખ.  
કેન્ટીનમાં એકબીજાનાં ટીફીનની લત,  
મીત્રોની ગપસપમાં ક્યારેય ન મળતા એક બીજાનાં મત,  
આખું વર્ષ કરે મીત્રો સાથે લહેર,  
અને છેલ્લે માથે પડે પરીક્ષાનો કહેર.”

આજનાં યુગમાં જ્યાં જુઓ ત્યાં યુવાધનનાં હાથમાં સ્માર્ટ ફોનનો બોજ. નાના મોટા સૌ કોઈ મોબાઈલની માયાબાળમાં ગયાં ફસાઈ. વિદ્યાર્થીઓનાં હાથમાં મોબાઈલ લેઈ પુસ્તકોનું સ્થાન, ગૃહીણીઓનું કર્તવ્ય ઘરકામનાં બદલે વ્હોસ્ટએફ અને ફેસબુક લેઈ છે. પુરુષો પણ નવરાશનાં સમયમાં પારિવારિક સમય ન આપતાં મોબાઈલમાં જ રચ્યા-પચ્યા રહે છે. પહેલાં બાળકો પણ શેરી રમતોમાં રસ દાખવતાં પણ હવે એ પણ ઘરમાં જ પડ્યા રહી મોબાઈલમાં પડેલા રહે છે. ગલ્લી-દંડો અને ક્રિકેટ, કબડ્ડી, ખો-ખો જેવી રમતોનું સ્થાન આજે PUBG, Candy Crush અને LUDO એ લીધું છે.



# Reflection 20<sup>18</sup><sub>19</sub>

કવિતા, નિબંધલેખન અને પત્રવ્યવહાર જેવી પ્રવૃત્તિઓથી ભટકી જઈને ચેટીંગ અને સ્ટેટસનાં ચક્કરમાં પડી, માતૃભાષાનું ઊલ્લંઘન કરી દૂર જતાં જાય છે. કવિતા દ્વારા પોતાનાં વિચારોનું સંકલન ન કરતા મગજમાં બકવાસ પોસ્ટ અને અપડેટ્સને ક્યારો ભેગો કરે છે.

“ખોવાઈ ગઈ છે, ખોવાઈ ગઈ છે, ખોવાઈ ગઈ છે!

સ્પેશ ટાઈમમાં રમવા માટે ભાગદોડ કરતી

એક પેઢી ખોવાઈ ગઈ છે;

શેરીમાં સાંજના સમયે ઓટલા પર સભા ભરતી

સ્ત્રીઓની પેઢી ખોવાઈ ગઈ છે;

સમાજ સેવાની પ્રવૃત્તિમાં રસ દાખવતી

યુવા પેઢી ખોવાઈ ગઈ છે.”

**ઈનામ:** આ પેઢીને શોધી લાવનાર માટે કોઈ ઈનામ નથી, કારણ કે આ પેઢી હંમેશાની માટે ગાયબ થઈ ગઈ છે.

બધાંનાં મનમાં કોઈને કોઈ કાલ્પનીક વિચારો આવતાં હોય છે. કવિતા લખવા માટે કોઈ લાયકાતની જરૂર નથી. નાનું બાળક પણ પોતાનાં વિચારોને, પોતાનાં શબ્દોને કવિતારૂપે લખી શકે છે. કવિતામાં કોઈ બંધારણ નથી; હા ! પ્રકાર ઘણા છે. આપણે કોઈપણ વિષયવસ્તુનો એકબીજા સાથેનો સંબંધ બતાવી કવિતા લખી શકીએ છીએ. કોચલનાં કલરવમાં પણ એક કવિ કવિતા રચે છે. પ્રેમમાં બેબાકળો બનેલો યુવાન પણ પોતાનો અનુભવ કમલથી કાગળ પર ઢાળે છે. ચાંદની ચાંદની જેમ સુરજનાં પ્રકાશ વિના અધુરી છે એમ કવિની કવિતા પણ રચનાત્મક અને કલ્પનાત્મક ભાવ વિના અધુરી છે.

કવિ પોતાના મૌલિક વિચારો અને કલ્પનાત્મક દૃશ્યોને અલંકાર અને પ્રાસનાં વંટોળમાં કંઈક અલગ પ્રકારે રજૂ કરી જે રચના ઘડે છે તેને જ તો કવિતાનું સાચું આલેખન કહેવાય છે.

Chandni B. Marwadi  
S.Y. B.Sc.

## આલ્ફ્રેડ નોબેલ અને તેમનો પુરસ્કાર

નોબેલ પારિતોષિકનું નામ આજે લગભગ વિશ્વનો પ્રત્યેક નાગરિક જાણે છે. કારણ કે નિશ્ચિનું આ સૌથી મોટું ગૌરવપ્રદ પારિતોષિક છે. પરંતુ જેણે આ પારિતોષિકની કાયમી અને સ્થાયી વ્યવસ્થા કરી એવા આલ્ફ્રેડ નોબેલ ની જીવનકથનીથી મોટાભાગના લોકો અપરિચિત છે.

કેટલાક લોકો સ્વયં આજીવન દુઃખી હોય છે. પરિણામે તેઓ બીજાનું દુઃખ સમજી શકે છે. બીજાના માટે પોતાના સર્વસ્વને વ્યોષાવર કરી દે છે અને અંતમાં તેઓ યશના ભાગીદાર બને છે.

સંશોધન અને માનવીય સંવેદનાનો પર્યાય એટલે આલ્ફ્રેડ નોબેલ. આલ્ફ્રેડ નોબેલ બાળપણથી જ રોગી હતો, આજીવન રોગી અને દુઃખી રહ્યો. આમ છતાં શરીર ઘસી કાઢીને સખત મહેનત કરીને તે સંશોધનમાં વ્યસ્ત રહ્યો અને વળી પોતાની જીંદગીભરની કમાણીનું વિજ્ઞાન, સાહિત્ય તથા વિશ્વશાંતિ માટે વસિયતનામું કરીને વિશ્વના ઇતિહાસમાં અમર થઈ ગયો.

આલ્ફ્રેડનું પુરું નામ આલ્ફ્રેડ બર્નાર્ડ નોબેલ. તેમના પૂર્વજો 'નોબિલિયસ' તરીકે ઓળખાતા હતા. આલ્ફ્રેડનું આખું જીવન એક દુઃખી, રોગી, અત્યંત મહેનતુ અને પોતાના કાર્યને સમર્પિતવ્યક્તિનું જીવન હતું. તેમના જીવનમાં એવા કેટલાય પ્રસંગો બન્યા કે જેનાથી તેમનો જીવનપ્રવાહ એક વિશિષ્ટ દિશામાં વહેવા લાગ્યો અને તેઓ અત્યંત સંવેદનશીલ બની ગયા. જુવાનીમાં તેમણે એક યુવતીને પ્રેમ કર્યો, પણ તે યુવતી નાની વયે જ અવસાન પામી. આ યુવતીના અવસાને એમના કોમળ હૈયાને એવો સખત આઘાત પહોંચાડ્યો હતો કે તે આખું જીવન અવિવાહિત જ રહ્યા.

ઈ.સ. 1867 માં એવો અવસર પણ આવ્યો, એક દિવસ વેગનમાંથી નાઈટ્રોગ્લેસરીન ટપકટપક આસપાસ પડેલા દોરડા પર પડતું હતું. દોરડા પર પડતાં આ નાઈટ્રોગ્લેસરીન કઠણ પદાર્થમાં પરિવર્તન પામી જતું હતું. ભયાનક વિસ્ફોટોના ઇતિહાસમાં આ એક અનોખી ઘટના હતી. આ ઘટનાએ 'ડાયનેમાઈટ' જન્મ આપ્યો. આલ્ફ્રેડ આવી જ કોઈ વસ્તુની શોધ ના કામ માટે ફ્રાન્સમાં ફેક્ટરીઓ શરૂ થઈ હતી.

એક દિવસ એક ફેક્ટરીમાં કામ કરતા આલ્ફ્રેડ ની એક આંગળી કપાઈ ગઈ અને લોહી વહેવા માંડ્યું. આલ્ફોહોલ અને ઈથરના મિશ્રણમાં ગન-કોટન એક ભયાનક વસ્તુ છે. તેને જો નાઈટ્રોગ્લેસરીનમાં ભેળવી દેવામાં આવે તો બમણી શક્તિવાળો વિસ્ફોટક તૈયાર થઈ શકે છે. પરીક્ષણ કરવામાં આવ્યું અને 'બ્લાસ્ટિંગ જેલાટિન' નામક ભયાનક વિસ્ફોટક તૈયાર કરવામાં આવ્યો. આ રીતે નોબેલે જગત નો વર્તમાન યુદ્ધ આટલું બધું વિનાશક બની શકે તેવી વસ્તુ સૌપ્રથમ આપી.

ઈ.સ. 1870 ની આસપાસ એમનું નામ યુરોપમાં ચમકવા માંડ્યું હતું ત્યારે કોઈ પત્રકારે તેમના જીવન વિશે તેમને કેટલાક સવાલો પૂછ્યા. ત્યારે તેમના ઉત્તર આ પ્રમાણે હતા :

- ★ વિશેષ ગુણ – પોતાના નખ સાફ રાખવા અને કોઈના પર બોજારૂપ ન બનવું.
- ★ વિશેષ અવગુણ – તેમનું પોતાનું કોઈ કુટુંબ નથી. સ્વભાવ ચીડિયો છે અને હોજરી નબળી છે.
- ★ એકમાત્ર ઈચ્છા – જીવતાજીવ દફનાવવામાં આવે.
- ★ જીવનની મહત્વની ઘટનાઓ – કોઈ પણ નહિ.

કેવા માર્મિક ઉત્તરો છે !



# Reflection 20<sup>18</sup><sub>19</sub>

એકાંતપ્રિય અને સ્વપ્રદેષ્ટા આલ્ફ્રેડે પોતાના સન્માન સમારોહમાં એકવાર કહ્યું હતું : ‘મારુ સન્માન કરવાનો કોઈ વિશેષ આધાર નથી કે નથી કોઈ વિસ્ફોટક આધાર.’ ત્યાં સેનરોમોમાં 10 ડિસેમ્બર, 1886 ના રોજ ત્રેસઠ વર્ષની ઉંમરે તેમનું અવસાન થયું હતું. તેઓ પોતાની આ અખૂટ સંપત્તિને એવા કામમાં ઈચ્છતા હતા, જેનાથી સાહિત્ય, વિજ્ઞાન અને વિશ્વશાંતિમાં મદદ થાય. આથી તેમણે 1890 માં ‘નોબેલ પ્રાઈઝ’ માટે પોતાની વસિયત લખી.

ઈ.સ. 1890 ની આસપાસ વાન સ્ટ્રનરની નવલકથા ‘હથિયાર મૂકી દો’ પ્રગટ થઈ. આલ્ફ્રેડ નોબલે આ નવલકથાની પ્રશંસા કરતાં વાન સ્ટ્રનરને લખ્યું, ‘હું ઈચ્છું છું કે કોઈ એવા મસાલા કે ચંત્રની શોધ કરું કે જેનાથી સામસામે યુદ્ધ માટે ઉભેલી બંને સેના એક સેકન્ડમાં જ એકબીજાનો સર્વનાશ કરી શકે. આમ થશે ત્યારે જ સભ્ય તરીકે ઓળખાતી જાતિઓ યુદ્ધ છોડશે અને સાચા અર્થમાં સભ્ય સમાજનો જન્મ થશે.

થોડા સમય પછી પેરિસની વાન સ્ટ્રનરને પત્ર લખેલો અને જણાવ્યું હતું, ‘હું મારી સંપત્તિનો એક ભાગ એક પારિતોષિક માટે અલગ રાખવા ઈચ્છું છું. આ પારિતોષિક દર પાંચ વર્ષે – ત્રીસ વર્ષમાં કુલ સાત વખત આપવામાં આવે. તેમણે કહ્યું છે કે જે વસ્તુઓને મરણ તથા વિનાશ માટે માનવામાં આવે છે તે ખરેખર તો માનવતા માટે લાભપ્રદ છે. તેમનાં આ મંતવ્યમાં ઘણું સત્ય છે. આ વસ્તુનો દુરુપયોગ ન કરવામાં આવે તો માનવીનું કલ્યાણ થશે. આજે પરમાણુ શક્તિને આજ વાત લાગું પડે છે. તેમના ‘ડાયનેમાઈટ’ નું દૃષ્ટાંત લઈએ. પ્રાચીન રોમનોને પહાજ તોડીને ગ્રાહ માઈલ લાંબી સડક બનાવવામાં અગિયાર વર્ષનો સમય ગયો હતો અને ત્રીસ હજાર માણસોની જરૂર પડી હતી. આજે ‘ડાયનેમાઈટ’ ની મદદથી આ કેટલી બધી સરળતાથી કરી શકાય છે અને સડક-માર્ગો એ માનવજાતિને કેટલી બધી સુવિધા કરી આપી છે, એ તો આપણે સૌ જાણીએ છીએ.

નોબેલ પારિતોષિક માટે લગભગ વીસ લાખનું પાઉન્ડનું ભંડોળ છે. આ ભંડોળના વ્યાજની આવક કરવેરાને બાદ કરતાં, છ લાખ રૂપિયાથી વધુ થાય છે. આ આવકમાં વિવિધ કારણોસર વધઘટ થતી રહે છે. આની વ્યવસ્થા માટે એક સમિતિની રચના કરવામાં આવી છે. આ સમિતિ ‘નોબેલ ફાઉન્ડેશન’ તરીકે ઓળખાય છે.

પારિતોષિકની વિધિવત જાહેરાત દર વર્ષે આલ્ફ્રેડ નોબેલના નિધન દિને, એટલે કે દસ ડિસેમ્બરના રોજ કરવામાં આવે છે. જે કે વિજેતાઓના નામ ઓક્ટોબર-નવેમ્બરમાં પત્રોમાં પ્રકાશિત થઈ જાય છે. નિયમ પ્રમાણે ઘોષણા થઈ ગયા પછી થોડા દિવસો બાદ કોઈ વિશ્વસનીય સંસ્થા કે ઉચ્ચ અધિકારી મારફત પારિતોષિકની રકમ વિજેતા વ્યક્તિને પહોંચાડવામાં આવે છે. આ રકમ ની સાથે એક સુવર્ણચંદ્રક અને એક સન્માનપત્ર પણ આપવામાં આવે છે.

ઈ.સ. 1901 થી આ નોબલ પારિતોષિકનું વિતરણ શરૂ થયું.

Pooja Mahendra Dhayani

## મોબાઈલનું જોખમ

મોબાઈલ-ફોને આપણી જિંદગી સરળ બનાવી દીધી છે. દેશમાં મોબાઈલ રાખનાર 70 કરોડ થી વધુ લોકોનું જીવન આ નાનકડા યંત્રને કારણે સુવિધાજનક બન્યું છે, પરંતુ આ સગવડની આપણે કેટલી મોટી કિંમત ચૂકવી રહ્યા છીએ. હજાર-પાંચસો રૂપિયાના મોબાઈલ અને અડધા પૈસા પ્રતિસેકન્ડે જેટલા દર પર ગમે તે સ્થળે વાતચીતની સુવિધા મળે તો તેના ખતરાઓ પર નજર નાખવી એક બેવકૂફી જેવું લાગે છે. ખાસ કરીને ત્યારે, જ્યારે તેનું કોઈ સંકટ પ્રત્યક્ષરૂપે દેખાતું ન હોય.

વિદેશોમાં ચાલી રહેલાં કેટલાંક સંશોધનોથી એવા સમાચાર આવતા રહે છે કે લગભગ 15 વર્ષથી જ સેલફોને આપણા ખિસ્સાઓ માં રણકવાનું શરૂ કર્યું છે તે આપણા હૈલ્ય માટે ખૂબજ નુકશાનકારક છે. પરંતુ આ રિસર્ચની પ્રમાણિકતા હંમેશાં શંકાસ્પદ રહી, ત્યાં સુધી કે ખુદ વિશ્વ સ્વાસ્થ્ય સંગઠને ગયા વર્ષે મે મહિનામાં રિપોર્ટ જાહેર કરીને કહ્યું કે મોબાઈલથી ડરવાની જરૂર નથી, કેમ કે અત્યાર સુધીનાં સંશોધનોમાં સ્પષ્ટ રીતે તેને આરોગ્યનો દુશ્મન સાબિત કરી શકાયો નથી.

હવે તો આપણી પાસે આપણું રિસર્ચ છે. સંસાર તથા સૂચનો ટેકનોલોજી મંત્રાલય તરફથી બનાવવામાં આવેલી હાઈલેવલ કમિટીએ તાજેતરમાં પોતાના રિસર્ચના આધાર પર પરિણામ આપ્યું કે સેલફોન અને તેના ટાવરોથી રેડીયો ફ્રિક્વન્સી એનર્જીના રૂપમાં નીકળતાં રેડિયેશન મધમાખીઓ, પતંગિયા અને ચકલીઓના વિલુપ્ત થવા માટે જવાબદાર છે. આવાં જ પરિણામ જે.એન.યુ. માં એક સરકારી પ્રોજેક્ટ હેઠળ ચાલી રહેલા રિસર્ચમાં આવ્યો. ત્યાં ઉંદરો પર થયેલા એક રિસર્ચમાં એનું જાણવા મળ્યું કે સેલફોનના રિડિયેશનની પ્રજ્ઞાનક્ષમતા પર અસર પડે છે. આ ઉપરાંત માનવ શરીરની કોશિકાઓના ડિફેન્સ મિકેનિઝમ ને પણ નુકશાન પહોંચે છે.

સમસ્યાઓનો એક પક્ષ એ છે કે દુનિયાના અબજો લોકો ના હાથમાં પહોંચી ચૂકેલા 0.2 થી 0.6 વોલ્ટની તાકાતવાળા નાનકડા રેડિયો ટ્રાન્સમીટર એટલે કે સેલફોનના રેડીયો ફ્રિક્વન્સી ફિલ્ડ શરીરના ટીસ્યુને અસર પહોંચાડે છે. આમ તો શરીર ના એનર્જી કંટ્રોલ મિકેનિઝમ આર એફ એનર્જીના કારણે ઉત્પન્ન ગરમીને બહાર કાઢે છે, પરંતુ સંશોધન સાબિત કરે છે કે સેલફોન માંથી મળતી ફાલતું એનર્જી કેટલીયે બીમારીઓનું મૂળ છે. જેમકે, બ્રેઈન ટ્યૂમર, કેન્સર, આઘ્રાઈટિસ, અલ્ઝાઈમર, હાર્ટડીસીઝ.

રિસર્ચર ના જણાવ્યા મુજબ જે રીતે માર્ફકોવેવમાં બનાવેલા ભોજનમાં રહેલું પાણી તેના વિકિરણો ના કારણે સુકાઈ જાય છે તે જ રીતે મોબાઈલ રેડિયેશન આપણા લોહીની ક્વોલિટી અને મગજની કોશિકાઓને પ્રભાવિત કરે છે, પરંતુ બીજી મોટી સમસ્યા એ છે કે તેના ટ્રાન્સમિશન ટાવર જ શહેરમાં લગભગ દરેક ગલી-મહોલ્લાનાં ઘરની છત પર ઉગી નીકળ્યાં હોય છે. તેમ કોઈ પણ રીતે ખુદ ને મોબાઈલફોનથી દૂર રાખો, પરંતુ આ ટાવરમાંથી પેદા થતા રેડિયેશનથી કેવી રીતે બચી શકશો ? તેમાંથી પણ રેડિયો ફ્રિક્વન્સીના રૂપમાં ઘાતક ઇલેક્ટ્રોમેગ્નેટિક રેડિયેશન નીકળે છે, જે બે-અઠી માર્ફલના વિસ્તાર સુધી ફેલાયેલા રહે છે.

જો આ રેડિયો ફ્રિક્વન્સી આટલી દૂર સુધી નહીં જાયો તો નોટ રિચેબલ નો સંદેશ સંભળાવનાર નેટવર્ક એટલે કે મોબાઈલ સર્વિસ પ્રોવાઈડર કંપનીની સેવાઓ કોણ લેશે ? દેશમાં રહેલી લગભગ ડઝન જેટલી મોબાઈલ કંપનીઓને તાકતવર બનાવે છે. તેના પાવરની સંખ્યા અને તેની તાકાત એટલે કે ટ્રાન્સમિશનની ક્ષમતા એટલે કે રેડિયેશન વધ તે પણ નિશ્ચિત છે.

સાયન્ટિફિક રીતે રેડિયેશનનો દર માપવામાં આવે તો આ ઘટનામાં ભારત અત્યારે ઈન્ટરનેશનલ કમિશન ઓન નોન આઈનાર્ગિંગ રેડિયેશન પ્રોટેક્શનની ગાઈડ લાઈન્સ માને છે. તે મુજબ મોબાઈલ ટાવર્સમાંથી 9.2 પ્રતિવર્ગ મુજબ મીટર વધુ રેડિયેશન ન નીકળવાં જોઈએ.



બેંકે ડિપાર્ટમેન્ટ ઓફ ટેલિકોમ્યુનિકેશને આ રેડિયેશનમાં 10% ના ઘટાડાની સલાહ આપી છે . પરંતુ તેનું એ પણ માનવું છે કે માનવ સ્વાસ્થ્ય મુજબ રેડિયેશનની સેફ લિમિટ તેનાથી પણ હજાર ગણી ઓછી હોવી જોઈએ .

મોબાઇલ રેડિયેશનની બાબતમાં ભારત ખાસ કરીને અમેરિકી નિષ્ણાંતોની વાત માનવું આવ્યું છે, જ્યાં ટાવર્સને 580 થી 1000 માર્ફકો વોટ પ્રતિ વર્ગમીટરના વિકિરણ ફેલાવવાની છૂટ હોય છે. યુરોપીય દેશોમાં લિમિટ સો થી હજાર ગણી ઓછી છે. શું આપણો દેશ પોતાના નાગરિકોના આરોગ્યની ચિંતા કરીને આ દેશોમાંથી કોઈ એકના અનુસરણથી પહેલ કરી શકશે ?

Pooja Mahendra Dhayani

## THE GREAT INDIAN MATICIANS શ્રીનિવાસ રામાનુજન

આજે હું એક એવા વ્યક્તની અત્રે રજુઆત કરી રહ્યો છું કે જેમણે માત્ર 32 વર્ષની એક નાનકડી જીંદગીમાં અત્યંત સંઘર્ષ, આર્થિક અને અનેક મુશ્કેલીઓથી પણ ગભરાયા નહિ અને અડગ રહી આગળ વધતા રહ્યા અને પોતાની મંઝિલના રસ્તે (ક્ષેત્રે) અબોલ્લ સિદ્ધિ હાંસિલ કરી. એજ આપણા ભારતના મહાન ગણિતજ્ઞ શ્રીનિવાસ રામાનુજન.

શ્રીનિવાસ રામાનુજનનો જન્મ 22 ડિસેમ્બર 1887 ના રોજ 18 અલહિરી શેરી, ઈરોડ ગામમાં મદ્રાસ (ચેન્નઈ) માં થયો હતો. તેમનો જન્મ એક ગરીબ બ્રાહ્મણ પરિવારમાં થયો હતો. તેમની માતાનું નામ કોમલતામ્મલા અને પિતાનું નામ શ્રીનિવાસ આયંગર હતું.

“કોન કહતા હે કિ આસમાન મે,  
સુરાખ નહી હો શકતા,  
એક પથ્થર તો,  
તબિયત સે ઉછલો ચારો”

શ્રીનિવાસ રામાનુજન 20 મી સદીમાં ભારતના સૌથી મહાન અને સૌથી પ્રખ્યાત ગણિતજ્ઞ હતા. નાનપણથી જ તેઓ ગણિતમાં અસાધારણ પ્રતિભા દેખાડી શિક્ષકોને અચંબામાં નાખી દેતા હતા. રામાનુજન એક વર્ષના હતા ત્યારે તેઓને પરિવાર કુંભકોણમમાં જઈ વસ્યો હતો. તેમના પિતા એક સ્થાનિક વેપારી સાથે કાર્ય કરતા હતા. જ્યારે રામાનુજન દોઢ વર્ષના હતા, ત્યારે તેમની માતાએ બીજા એક સંતાન સદાગોપનને જન્મ આપ્યો હતો. પરંતુ સદાગોપનનું ત્રણ જ મહિનામાં અવસાન થઈ ગયું હતું. ડિસેમ્બર 1889 માં રામાનુજનને શીતળા (Smallpox) ની બીમારી થઈ હતી અને આ બીમારીથી છેલ્લા એક વર્ષમાં હજારો લોકો તેમના જિલ્લામાં અવસાન પામ્યા હતા. પરંતુ રામાનુજન ઝડપથી બીમારીમાંથી બહાર નીકળી ગયા હતા. આ પછી તેઓ પોતાની માતા સાથે મોસાળમાં મદ્રાસ (ચેન્નઈ) ના કાયીપુરમ ગામમાં આવી રહેવા લાગ્યા. જ્યાં તેમને 1 ઓક્ટોબર 1892 માં સ્થાનિક સ્કૂલમાં મોકલવામાં આવ્યા. માર્ચ 1894 માં તેમને તમિલ મિડિયમ સ્કૂલમાં મોકલવામાં આવ્યાં હતા. થોડાક સમયબાદ રામાનુજન અને તેમની માતા પરત કુંભકોણમ ગામમાં આવી ગયા અને ત્યારબાદ રામાનુજનને કાંગાયન પ્રાઈમરી સ્કૂલમાં મોકલવામાં આવ્યા. રામાનુજનને પોતાની સ્કૂલ પ્રત્યે ખૂબજ લાગણી હતી. તેમને માતાના સંસ્કારોના વારસામાં પ્રાચીન પરંપરાઓ અને પુરાણો વિશે જ્ઞાન મળ્યું હતું.



રામાનુજન કાંગાયન પ્રાઈમરી સ્કૂલમાં એક હોશિયાર વિદ્યાર્થી હતા. 10 વર્ષની ઉંમર પહેલા જ તેઓ નવેમ્બર 1887 સુધીમાં અંગ્રેજી, તાલીમ, ભૂગોળ અને ગણિતની પ્રાઈમરી પરીક્ષા ઉત્તિર્ણ કરી જિલ્લામાં પ્રથમ સ્થાન મેળવ્યું હતું. એ જ વર્ષમાં તેઓ શહેરની ઉચ્ચમાધ્યમિક સ્કૂલમાં પ્રવેશી જ્યાં પ્રથમવાર તેમને ગણિતનો અભ્યાસ કર્યો. 14 વર્ષની વયમાં તેમને પોતાના યોગદાન બદલે મેરિટ સર્ટિફિકેટ પણ આપવામાં આવ્યું અને સાંભરતંત્રની સ્કૂલમાં તેમને 1200 વિદ્યાર્થી અને 35 શિક્ષકો સાથે પ્રવેશ આપવામાં આવ્યો. રામાનુજન 1902માં ઘનના સમીકરણો સહેલાઈથી ગણવાની પદ્ધતિ પણ વિકસાવી.

ઈ.સ. 1905 માં રામાનુજન મદ્રાસ વિશ્વવિદ્યાલયની પ્રવેશ પરીક્ષા આપી. જેમાં ગણિતને છોડીને બાકીના બધા જ વિષયોમાં નાપાસ થયા હતા. થોડાક સમય પછી 1906 અને 1907 માં ફરીથી 12 માં ધોરણમાં પ્રાઈવેટ પરીક્ષા આપી અને નાપાસ થયા ત્યારબાદ તેમને મેટ્રિકની પરીક્ષા પ્રથમ ક્રમાંકે પાસ કરી હતી. રામાનુજન જ્યારે મેટ્રિકમાં શિક્ષણ લઈ રહ્યા હતા, તે સમયે ત્યાની સ્થાનિક લાઈબ્રેરીમાંથી એક ગ્રંથ મળ્યો “**Synopsis of elementary results in pure and applied mathematics**” જેના લેખક છે જર્જ એસ. કાર્ના ગણિતના પરિણામોનો અભ્યાસ કર્યો અને પ્રભાવિત થઈ તેમણે જાતે જ ગણિત પર કાર્ય કરવાનું ચાલુ કર્યું. તેમને હાયર સેકેન્ડરી સ્કૂલના હેડમાસ્તર કૃષ્ણાસ્વામી અચ્યંર દ્વારા રંગનાથ રાવ પુરસ્કાર આપવામાં આવ્યો.

શ્રીનિવાસ રામાનુજન ગર્વમેન્ટ આર્ટ્સ કોલેજમાં ગ્રેજ્યુએશન સમયે કેટલી વખત તેઓ ભૂખ્યા પેટે સુઈ જતા હતા, તેમને સૌપ્રથમ અંકગણિત સુત્રો તૈયાર કર્યા અને ત્યારબાદ ગ્રેજ્યુએશનની પદવી તેમની પરિસ્થિતિને લીધે ન મળી. ત્યારબાદ તેમના લગ્ન 1903 માં જાનકી દેવી સાથે થયા હતા. જવાબદારી પોતાના શિરે હોવાથી એક નાનકડી કલાકની નોકરી માટે પણ ઘણી મુશ્કેલીનો સામનો કરવો પડ્યો હતો. રામાનુજનની પ્રતિભાની ઓળખ વિશ્વને કરાવીને પ્રસિદ્ધ કરવામાં અંગ્રેજ પ્રોફેસર ડો. ગોડફ્રે હાર્ડને મોટો હાથ હતો. રામાનુજનને પોતાના ટુંકા જીવનકાળમાં લગભગ 3900 જેટલા ગણિતના પરિણામોની શોધ કરી હતી. ઈંગ્લેન્ડના પ્રસિદ્ધ ગણિતજ્ઞ ડો. ગોડફ્રે હાર્ડિનું કહેવું છે કે “રામાનુજનને મે જેટલું માર્ગદર્શન આપ્યું તેનાથી વધારે હું રામાનુજન દ્વારા શીખ્યો છું.” ડો. ગોડફ્રે હાર્ડિના સાથે તેઓ 1914 માં લંડનના કેમ્બ્રિજ વિશ્વવિદ્યાલયમાં ગયા હતા. તે સંસ્થા દ્વારા તેમને બી.એ. ની ઉપાધિ આપવામાં આવી હતી. રોયલ સોસાયટી અને ટ્રિનીટી કોલેજ કેમ્બ્રિજને તેમણે પોતાના ફેલો તરીકે નિમણુંક કરી હતી. આવી રીતે ભારતને મળવાવાળું આ પ્રથમ સન્માન હતું. અત્યંત ધાર્મિક રામાનુજને કહ્યું હતું, “ગણિત સમીકરણ ઈશ્વરના વિચારને ન દર્શાવતું હોય તે સમીકરણ મારા માટે નિર્રથક છે”.

લંડન 1917 માં રામાનુજનને બીમારી ને કારણે તેઓ 1919 માં ભારતમાં પરત આવ્યાં હતાં. ભારતમાં રામાનુજનનું અવસાન કુંભકોણમમાં મદ્રાસ પ્રેસિડેન્સીમાં થયું હતું. તેની ઘણી બધી શોધો કે જે શક્ય થઈ છે. જેથી ઈતિહાસ સાક્ષી પૂરે છે અને આજે પણ તેમના જન્મ દિવસને “**National Mathematics Day**” તરીકે મનાવવામાં આવે છે.

આવા આપણાં ભારતના મહાન ગણિતજ્ઞને આજે યાદ કરવા જ રહ્યાં અને દિલથી માન આપવું જ રહ્યું.

“મંજિલ ઉઠી કો મિલતી હે,  
જીનકે સપનોમે જાન હોતી હે,  
કેવલ પંખોસે કુછ નહિ હોતા  
હૌસલો સે ઉડાને હોતી હે”

Chiragbhai Bhilalji Vanzara  
F.Y.B.Sc.



## સુંદર સપનાં

એક પુરુષને રાતે સપનું આવે છે. આ સપનામાં અપ્સરા એમને સ્વર્ગની મુલાકાતે લઈ જાય છે.

અપ્સરા એ પુરુષને સ્વર્ગના એક વિશાળ મહેલમાં લઈ જાય છે. ત્યારે એ એક એવા રૂમમાંથી પસાર થાય છે, જ્યાં જમીનથી લઈને છત સુધી વિવિધ પ્રકારની ભેટો પડી હોય છે. પુરુષ ત્યાં ઉભો રહી જાય છે અને એ રૂમમાં જોઈ રહે છે. જમીનથી છત સુધી વિવિધ પ્રકારની સુંદર ભેટો જોઈને એ ચક્રિત થઈ જાય છે અને એ અપ્સરાને પૂછે છે: “આ રૂમમાં આટલી બધી સુંદર ભેટોના ઢગલા શા માટે કરવામાં આવ્યા છે?”

એ સુંદર અપ્સરા તે પુરુષને સમજાવે છે: “આ એ રૂમ છે જ્યો લોકો પોતાને જે વસ્તુ મળે એની પ્રાર્થના કરતા હોય છે એ વસ્તુ એમને પહોંચાડવા અમે અહીં જમા કરીએ છીએ, પરંતુ અફસોસ કે હજુ તો એમણે યાહેલી વસ્તુ અમે એમને પહોંચાડીએ એની પહેલાં જ એ પ્રાર્થના કરવાનું છોડી દે છે!”

સપનાં જોવા આપણને બધાને ગમે છે પરંતુ જીવનમાં ડગલે ને પગલે આપણે કોઈને કોઈ બાબતનાં સપનાં જોતા હોઈએ છીએ. બિઝનેસનાં, પરીક્ષાના માર્ક્સના, સુંદર જીવનસાથીના...

... પરંતુ ચિંતા કરવાની વાત તો એ છે કે આપણે એ સપનાને વળગી નથી રહેતા. એના બદલે એ સપનાને વળગી રહીને એ કેવી રીતે સાકાર થઈ શકે તે માટે પોઝિટિવ બનીને મથ્યા કરીએ તો સપના સાકાર થાય.

## Believe in yourself.

દાણીવાર આપણી સાચી વાત હોવા છતાં કોઈના દબાણ હેઠળ એ વાતને રજૂ કરતા નથી.

એક જાણીતી હોસ્પિટલમાં એક નર્સને એની નોકરીના પહેલા દિવસે જ ઓપરેશન થિયેટરમાં ડ્યુટી મળી. તે દિવસે એક દરદીના પેટનું ઓપરેશન હતું. ઓપરેશન વખતે વપરાતી સાધન-સામગ્રીની ગણતરીની ચોકસાઈ રાખવાની જવાબદારી આ નર્સની હતી.

ઓપરેશન પુરુ થયું. પેટ પર ટાંકા લેવાની શરૂઆત કરવાની હતી, ત્યાં જ એ નર્સે ડોક્ટરને કહ્યું: “સર, તમે માત્ર 11 જ રૂના પોતાં વાપરીને પાછાં આપ્યાં છે, ખરેખર તો આપણે 12 પોતા વાપર્યાં છે. હજુ એક પોતું બાકી છે.”

પરંતુ ડોક્ટરે કહ્યું: “મેં તો બધાં જ પોતા તેને પાછાં આપી દીધાં છે. તારી કંઈક ભૂલ થતી હશે. તું હજી નવી નવી છે, તારી જ ભૂલ છે.”

નર્સે નમ્રતાથી કહ્યું: “નો સર, મારી ગણતરી ખરાબર જ છે. મેં આપેલાં બાર પોતાની સામે મને અગિયાર જ પાછાં મળ્યાં છે.”

ડોક્ટરે ગુસ્સામાં કહ્યું: તો તું એમ કહેવા માગે છે કે મારા જેવો સિનિયર ડોક્ટર ભૂલ કરી રહ્યો છે?”

ત્યારે પેલી નર્સે વિનયપૂર્વક કહ્યું: “માફ કરજો સર, તમારે આ રીતે ટાંકા લેવાનું શરૂ કરવું જોઈએ નહીં. આપણે આ દરદીનો ખાસ વિચાર કરવો જોઈએ.”

ખુશ થઈને હસતા ચહેરે ડોક્ટરે પોતાનો પગ ઊંચો કરી પેલી નર્સને બારમું રૂનું પોતું દેખાડતાં કહ્યું: “અહીં કે બીજી કોઈપણ હોસ્પિટલમાં તું તારું કામ બહુ સારી રીતે કરી શકીશ.”

જ્યારે એ વાતની ખાતરી જ હોય કે તમે સાચા છો તો તમને કોઈ રોકી શકે નહીં.

Shivani J. Devani  
T.Y. Maths

## આજનો ભારતનો યુવાન કઈ દિશામાં?

આપણો આ ભારતદેશ જેને યુવાનોનો દેશ માનવામાં આવે છે, જ્યાં વિશ્વના સૌથી વધુ યુવાનો રહે છે. જેમની ઉંમર લગભગ 18 થી 45ની અંદર આવતી હોય છે. યુવા એટલે કે આંખોમાં દેખાતા બધા જ સપનાઓને સાકાર કરવાની ક્ષમતા ધરાવતો માણસ. જેની માટે આ દુનિયાની કોઈપણ અશક્ય વસ્તુને શક્ય કરવાની ક્ષમતા રહેલી છે.

યુવાન એટલે કે યુવાનીની અવસ્થા જ્યાં દરેક સાધારણ લાગતું કામ સાધારણ રીતે કરવાની ક્ષમતા રહેલી છે. જો કોઈ યુવાન ધારી લે કે તેણે વિશ્વની તમામ સફળતાઓ પ્રાપ્ત કરવી છે તો, શું આ યુવાન બાળપણ કે વૃદ્ધાવસ્થામાં સપનાંને સાકાર કરી શકશે? ના, પરંતુ તેના સપનાઓને સાકાર કરવા માટેનો જો સર્વશ્રેષ્ઠ સમય હોય તો તે છે યુવાની, જેની અંદર તેણે ધારેલું દરેક કામ તે કરી શકે છે. તેના રસ્તામાં આવતી અડચણોને પણ એ પાર કરીને સફળતા પ્રાપ્ત કરી શકે છે. “યુવાની એ શોધ, પ્રયોગ, સાહસો અને કલ્પનાશીલ સ્થળોનો ઉપભોગ કરવા માટેનો સમય છે.

યુવાન એટલે કે તે પોતે જો ધારે તો આખા વિશ્વને હચમચાવી નાખવાની તાકાત ધરાવતો મનુષ્ય. જો મનુષ્ય તેની યુવાન અવસ્થામાં કંઈ કરતો નથી તો તેની આ યુવાની નકામી છે. છત્રપતિ શિવાજી મહારાજ પણ યુવાની અવસ્થામાં માત્ર સેના અને તેમની માતા જીજીબાઈના સાથથી આખા મરાઠા સામ્રાજ્યના રાજા બની શક્યા હતા. મહારાણા પ્રતાપ જેમણે યુવાની અવસ્થામાં ભારતનો ઘણો હિસ્સો જીત્યો હતો. જો આવા જ શ્રેષ્ઠ યુવાનોની વાતો કરતાં હોય તો ભારતના શ્રેષ્ઠ એવા સ્વામી વિવેકાનંદ અને દાયનંદ સરસ્વતીને કેમના ભુલી શકાય, જેમણે સંસારીક જીવનનો ત્યાગ કરીને ભારતની પ્રજાને અંધશ્રદ્ધાથી દૂર કરી.

હા, અત્યારનો ભારતનો યુવાન દરેક અશક્ય વસ્તુને શક્ય કરવાની ક્ષમતા ધરાવે છે. પરંતુ અત્યારના ભારતના યુવાનો કોઈ નથી કરી શકતા તેના ઘણાં બધાં કારણો છે. જેવો કે, ટેકનોલોજીનો દુરુપયોગ કરે છે, ખુબ જ દિશાવિહીન બની ગયા છે કેમકે તેમની બધી જ જરૂરીયાતો આરામથી પૂરી થઈ રહી છે. તેમનું યુવાજુથ, તેમના મિત્રો જેઓ તેમને જીવનમાં કંઈ કરતાં રોકી રહ્યાં છે. તેમને જોઈતી સુખ સગવડો પુરી પાડવામાં આવી રહી છે. અત્યારના ભારતના યુવાનો માત્ર ફેસબુક અને વ્હોટ્સઅપ પર સારી વાતોને શેર કરતો થઈ ગયો છે. એમને બસ મોજ-મજાની જ જીંદગી જોઈએ છે. તેને કંઈ પણ બળ પડે એવું કરવું જ નથી. બહારના જ આચરણને અનુસરે છે. ભારતના જે સંસ્કારો, બંધુતા, એકતા, સમાનતા જેને સાચવવાની જવાબદારી ભારતના દરેક યુવાનની છે તે દરેક યુવાન આજે આ બધાથી દૂર ભાગે છે. જે યુવાનો સાથે ભારત ખુબ જ આશાઓ રાખીને બેસે છે, એ જ યુવાન આજે આ બધાં બનીને બેઠો છે. આજનો યુવાન પહેલાંના યુવાનની જેમ યુદ્ધ કરે છે પરંતુ તે યુદ્ધ માત્ર ફેસબુક અને વ્હોટ્સઅપ પુસ્ત જ સિમિત છે. જો એ જ વસ્તુને બહાર કાઢવામાં આવે તો એક પણ યુવાન સાથે આપવા તૈયાર હોતો નથી. કાયદા તુટી રહ્યા છે. ભારત દેશ ભ્રષ્ટાચારીઓનો દેશ બની રહ્યો છે. પરંતુ આજનો યુવાન એ વસ્તુ બંધ કરવાના બદલે આ બધા સાથે જોડાઈ રહ્યો છે. આથી આજના યુવાનો સાથે ભારત દેશની આશા રાખવી નિર્વર્થક છે. આજના યુવાનને માત્ર સારી સુવિધાઓ જોઈએ છે, પરંતુ સુવિધાઓ માટેનો પુરુષાર્થ કરવો નથી. શું આ ભારતદેશ હવે આવા દિશાવિહીન યુવાનોનો જ દેશ બની રહેશે? આજના ભારતના યુવાનો ક્યાં અટવાઈ ગયાં છે?

આપણે જાણીએ છીએ ત્યાં સુધી ક્યાં તો ભારતના યુવાનોને સાચો રસ્તો મળતો નથી. ક્યાં તો એ લોકોને તેમની સગવડો છોડીને પુરુષાર્થ કરવો નથી. ભારતના યુવાઓને યોગ્ય માર્ગદર્શક કે કોઈ Roll Model ની જરૂર છે. પરંતુ અફસોસ એ વાતનો થાય છે કે જે લોકોને મળે છે તે બીજાના લીધે જીવનમાં આગળ આવી શકતા નથી અને મોટા ભાગના લોકોને યોગ્ય માર્ગદર્શક જ મળતા નથી, જે તેમને સાચા માર્ગો બતાવી શકે અથવા તો તેમને તે જે જગ્યાએ છે ત્યાંથી આગળ લઈ જા. હા, ભારતના યુવાનોએ યોગ્ય Roll Model માંથી પ્રેરણા લઈને જીવનમાં આગળ વધવાની તૈયારી કરવી જોઈએ. જ્યારે કોઈ માણસ તેના મનથી કોઈ દૃઢનિશ્ચય કરી લે છે કે મારે આ કામ પુરું કરવું છે તો જ માણસ જીવનની સફળતાઓ પ્રાપ્ત કરી શકે છે. પરંતુ આ બધી જ બાબતોમાં દરેક યુવાનનો સર્વશ્રેષ્ઠ મિત્ર જે એના જેવી જ કોઈ સારી વસ્તુ માટેની જીદ ધરાવતો હોય તે અને તેના ગુરુ અને તેનો આત્મવિશ્વાસ તેની સાથે જ હોવો જોઈએ તો તેની સફળતા વધારે આકર્ષક



# Reflection 20<sup>18</sup><sub>19</sub>

લાગશે. ભારતના યુવાનો એ દુનિયાની નજરે તેમને પોતાને જોવે છે અને નિર્થક સમજે છે. તેથી દરેક યુવાને પોતાને પોતાની જાતને જ સમજવી જોઈએ અને જીવનમાં આગળ વધવું જોઈએ.

આમ, ભારતના યુવાનોને દિલથી કંઈ ગુસ્સો, જુસ્સો, જીદ અને પરિવાર નામના શબ્દની હૂફની જરૂર છે. જેથી એની સફળતા ક્યારેય પણ એને એકલી ના લાગે. જેથી ભારતનો દરેક યુવાન એ સ્વામીવિવેકાનંદ અને મહારાણા પ્રતાપ બની શકે. દેશના યુવાનોએ આજસ છોડીને પુરુષાર્થ કરવો જોઈએ. યુવાનોએ એવું વિચારવું જોઈએ કે મનમાં જે પણ કંઈ કરવાની ઈચ્છા થાય છે તે અથવા જે સુખ સગવડ જોઈએ છે તે જાતે જ ઊભી કરવી છે. હકીકતમાં ભારત દેશ આખો બદલાઈ જશે. એક કે બે યુવાનો ભારતને નહીં બદલી શકે આથી સમગ્ર ભારતના યુવાનોએ જોડાઈને ભારતને એવો દેશ બનાવવો જોઈએ કે જેથી ભારત દેશના લોકો વિદેશમાં ના જાય, પરંતુ વિદેશીઓ અહીંયા આવે. તો ચાલો સૌ સાથે મળીને ભારતને ઈતિહાસમાં કહેવાયેલો “સોને કી ચિડિયા”વાળો દેશ બનાવીએ.

"There is no power like the power of youth because the power of youth doesn't stop !!!"

Priya D. Vyas  
F.Y. B.Sc.

## શોધુ છું...

માણસોની બનેલી આ દુનિયામાં  
હું એક માણસને શોધુ છું.

સ્વાર્થની બનેલી આ દુનિયામાં  
એક નિસ્વાર્થને શોધુ છું.

ઘડીભરના સાથા નિભાવતા મિત્રોને આ દુનિયામાં  
હું જિંદગી આખી નિભાવી શકે દુશ્મની એવા દુશ્મનને શોધુ છું.

વૃદ્ધાશ્રમો બનવા મથતી આ દુનિયા માં,  
હું શ્રવણ બની શકે એળા બાળકોને શોધુ છું.

વેલેન્ટાઈન પાછળ ઘેલી બનેલી આ દુનિયામાં  
હું વિશ્વામિત્ર - વશિષ્ઠની હયાતીની હવાને શોધુ છે.

રોમિયો-જુલીયટને પ્રેમનો આદર્શ માનતી આ દુનિયામાં  
હું રાધા-કૃષ્ણના પ્રેમને જાણતા માત્ર બે પંખીને શોધુ છું.

અર્જુન જેવા શિષ્ય તો બધાને બનવું છે આ દુનિયામાં,  
પણ હું એકલ્ય જેવા એકાદ શાગિર્દને શોધુ છું.

લોકોએ મને કહ્યું તું લાયક નથી આ દુનિયામાં,  
તો હું દુનિયાની લાયકાત શોધવા મથું છું.

કોઈને કદાચ મળી પણ જા તો જણાવશો મને,  
ઘોર અંધારી આ દુનિયામાં હું,  
નાનકડા પ્રકાશનું કિરણ ફેલાવે એવો દિવસો શોધું છું.

Govind R. Vacjip;a  
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## તમારા ડરને ભેટો

Book : The secret letters of the monk who sold his ferrari

Writer : Robin Sharma

રોબિન શર્માનો આજે દુનિયામાં સૌથી વધુ વંચાતા લેખકોમાં સમાવેશ થાય છે. તેના અત્યાર સુધીનાં અગિયાર બેસ્ટસેલર પુસ્તકોની લાખો નકલ 65 દેશોમાં અને 75 ભાષાઓમાં વેચાઈ ચુકી છે. તે ખુબ પ્રતિષ્ઠાવાન અને અસરકારક બ્લોગર પણ છે.

જિંદગીમાં આપણને આગળ વધતાં કોઈ રોકતું હોય તો તે આપણી ભીતર પડેલું ભયનું અદૃશ્ય માળખું છે. તે આપણને હંમેશાં સાનુકૂળ જગ્યામાં જ રાખે છે, જ્યારે હકીકતમાં તે સૌથી અસલામત જગ્યા રાખે છે.

જેનો ડર લાગે છે તે કરવાથી તે ડર થકી આપણી બંધાયેલી શક્તિ મુક્ત થાય છે આપણે નિર્ભય અને શક્તિશાળી બનીએ છીએ અને આમ જ આપણી સપનાની જિંદગી જીવવા આપણે સક્ષમ બનીએ છીએ.

કામ નાનું હોય કે મોટું, તે કેમ કરવું તે બાબતની આપણી આવડત જ ખરેખર તો કામ કરતી હોય છે. તમારી જાતમાં દરરોજ થોડો સુધારો કરતાં જશો તો જ તમે એક દિવસ અસામાન્ય પરિણામો મેળવી શકશો.

દુનિયામાં કોઈ કામ તુચ્છ નથી અને કોઈ પણ કામ કે મજુરી પણ તમારી વ્યક્તિગત કાબિલીયત બતાવવાની, કંઈક નવું સર્જન કરવાની તમને એક તક આપે છે.

તમારું કામ હોય કે તમારી જીંદગી, એકદમ હકારાત્મક મિત્રો કે પ્રતિસ્પર્ધીઓ જ તમને પ્રેરણા પૂરી પાડે છે.

જીંદગીની નાની નાની ખુશીઓમાં જ જીવનનો સૌથી મોટો આનંદ છે.

મસ્તિષ્ક કરતાં હૃદયમાં વધુ સમજણ છે. તેને માનથી જુઓ તેના પર વિશ્વાસ રાખો અને અનુસરો અને તમને રસ્તો જ્યાં સુધી દેખાય ત્યાં સુધી આગળ વધો ત્યાં પહોંચ્યા પછી ત્યાંની આગળનું તમે જોઈ શકશો.

Hetvi Dharmendrabhai Makwana  
T.Y. Mathematics

## Theories of Moon

પૃથ્વીના ચંદ્ર માટેની અનેક થિયરી ઘણાં બધાં astrophysicist તથા planetary scientist દ્વારા પ્રસ્તુત થયેલી છે.

આ થિયરી એના વિશે છે કે પૃથ્વીનો ચંદ્ર કેવી રીતે બન્યો ?

### Theory - 1

જ્યારે પૃથ્વીની રચના થઈ ત્યારે પૃથ્વી આગનો ગોળો હતો. ત્યારે બીજો કોઈક ગ્રહ પૃથ્વીના ચુંબકીય ક્ષેત્રમાં આવી તેની આસપાસ ભ્રમણ કરવા લાગ્યો અને આ ગ્રહ અને પૃથ્વી ગ્રહ બંને binary planetary system ધરાવતાં હતાં. આ પ્લેનેટ અત્યારે પૃથ્વીના ચંદ્ર તરીકે ઓળખાય છે. પરંતુ binary planetary system માં બે પ્લેનેટ એકબીજાની નજીક આવી એકબીજામાં ભેગા થઈ જાય છે અને એક મોટો પ્લેનેટ બનાવે છે. જ્યારે પૃથ્વીનો ચંદ્ર દર એક વર્ષમાં પૃથ્વીથી 4 cm દૂર ખસે જે binary planetary system ના સિદ્ધાંતથી વિરૂદ્ધ છે.

તે માટે આ થિયરીને અમાન્ય ગણવામાં આવી.



## Theory – 2 (impact theory)

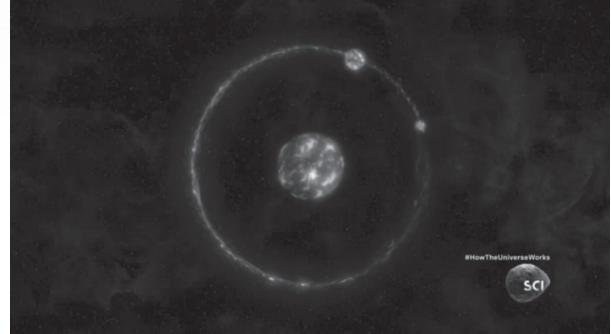


Photo : 1 - 2

આ થિયરી મુજબ જ્યારે પૃથ્વી બની હતી અને તે આગનો ગોળો હતી ત્યારે તેની સાથે એક મંગળ જેટલી size નો પ્લેનેટ ટકરાયો. તેથી પૃથ્વીની આસપાસ તેના અમુક ટુકડાઓ વિખેરાયા. આ ટુકડાઓ પૃથ્વીના ગુરુત્વાકર્ષી ક્ષેત્રમાં એક ring system માં ગોઠવાઈ ગયા. આ ring system ના અમુક ટુકડાઓ પૃથ્વીની roch limit માં પ્રવેશીને ભેગા થઈ એક મેગમાની રચના કરી અને આ મેગમા બીજા દરેક ટુકડાઓને પોતાનામાં સમાવીને પૃથ્વીના ચંદ્રની રચના કરી હોવાનું માનવામાં આવે છે. આ થિયરીની માહિતી પણ મળી છે કે ચંદ્રની સપાટી પર આપણને કાળા પદાર્થ દ્વારા બનેલા કેટલાક ચિત્રો દેખાય છે. આ કાળા પદાર્થ એ ચંદ્રની સપાટી પર રહેલો લાવા છે. જે ઠંડો પડી ગયો છે. [આ કાળા નિશાન આપણે પૃથ્વી પરથી જોઈ શકીએ છીએ] તેથી આ થિયરી સાચી લાગે છે.

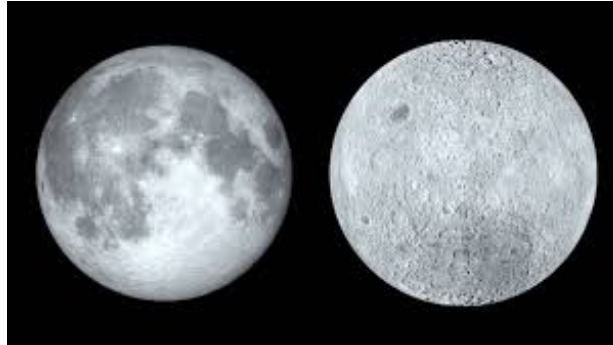


Photo : 3

પૃથ્વીના ગુરુત્વાકર્ષણને લીધે ચંદ્ર પૃથ્વીની ગોળ ફરે છે, પરંતુ ચંદ્ર પોતાની ધરી પર ફરતો નથી કારણ કે પૃથ્વીનું ગુરુત્વાકર્ષણ ચંદ્રને એટલી પકડથી જકડી રાખે છે કે આપણી બાજુ ચંદ્રની એક જ બાજુ જોવા મળે છે. જ્યારે બીજી બાજુ દેખાતી નથી. તેથી ચંદ્રની બીજી બાજુ એ ઘણું મોટું રહસ્ય (mystery) બની ગયું છે.

ઈ.સ. 1959 માં સોવિયેત ના space craft લ્યુના-3 ચંદ્રની પાછળની બાજુમાં ગયું હતું. લ્યુના-3 એ ચંદ્રની બીજી બાજુ [જે આપણે પૃથ્વી પરથી જોઈ શકતા નથી તે બાજુ] ના ફોટો લીધા હતા. બધા astronomers ને લાગતું હતું કે ચંદ્રની બીજી બાજુ એ પ્રથમ બાજુ જેવી જ હશે એટલે કે તેના પર પ્રથમ બાજુ જેવા લાવાના નિશાન હશે. પરંતુ પાછળની બાજુ લાવાના નિશાન ન હતા અને નાના મોટા નિશાન (ઘબ્બા) હતા. જે asteroid ની impact ના લીધે હતા. એટલે કે ચંદ્રની પાછળની બાજુએ આગળની બાજુ કરતાં મોટી હોવી જોઈએ કારણ કે આગળની બાજુ પર ચંદ્રની અંદરથી લાવા બહાર આવીને આવા નિશાન પડ્યા છે. જ્યારે પાછળની બાજુ પર આવું કંઈ જ નથી તેથી એમ માની શકાય કે પાછળની બાજુ મોટી હોવાથી ચંદ્રની અંદરથી લાવા બહાર ન આવી શક્યો હાલમાં પણ તેની શોધ-ખોળ ચાલી રહી છે કે ચંદ્રની આગળની બાજુ અને પાછળની બાજુ બંને એકબીજાથી અલગ કેમ છે ?

જે આ impact theory ની મદદથી સમજી શકાતું નથી.

## ભારતના વિકાસને અવરોધતી રાજનીતિ

આપણો ભારતદેશ જે આઝાદીના સમયથી લોકશાહી ગણાય છે. આ ભારતદેશ આઝાદીથી લઈ અત્યાર સુધીના એટલે લગભગ 70 વર્ષ જેટલા સમયગાળામાં જે વિકાસ કર્યો છે તે ખરેખર અકલ્પનીય છે. પરંતુ તેનાથી થોડો વધારે વિકાસ તે કરી શકે એમ છે. ભારતદેશે ખરેખર ઘણો સારો એવો વિકાસ કર્યો છે.

આમ, છતાં ભારતના વિકાસને છેલ્લા 70 વર્ષથી અવરોધતી બાબતોમાં ભારતદેશની આંતરીક સમસ્યાઓ છે. સરદાર પટેલ એ ભારતના 562 જેટલાં દેશી રજવાડાઓને એક કરી અખંડ ભારત તો બનાવ્યું છે પરંતુ ભારતના નકશામાં જોવા મળતી રાજ્યોની નાની એવી સીમાઓની જેમ ભારતને હજુ રાજ્યોમાં વિભાજીત કરે છે તેમ દેશની અમુક બાબતો જેવી કે કોઈ વિસ્તારનો ઓછો વિકાસ, ગરીબી, રાજકીય પક્ષો વગેરે છે.

આઝાદી પછીનાં વર્ષોમાં ભારતે ગરીબી, આર્થિક રાજકીય બધી જ રીતે સારી એવી પ્રગતિ કરી છે પરંતુ આ પ્રગતિની સાથે આ જ પ્રગતિમાં અવરોધતી ઘણી બધી બાબતો છે. આમ, તો ભારતનો વિકાસ એટલે તો એમ જ કહી શકાય કે દરેક નાગરિકને તેની પ્રાથમિક જરૂરીયાત પુરી થતી હોય તેવા લોકોની સંખ્યામાં વધારો થાય તો તેને ભારતનો આર્થિક વિકાસ થયો કહેવાય. અને ખરેખર ભારતના દરેક નાગરિકને ગર્વ લેવા જેવી બાબત છે કે ભારત દિવસે ને દિવસે તેનો આર્થિક વિકાસ કરી રહ્યો છે. તેમ છતાં જો ભારતમાં કોઈ એવો વિકાસ થઈ રહ્યો હોય જે ભારતના સમગ્ર વિકાસને અવરોધી રહ્યો છે તો એ છે ભારતનો વસ્તીવધારો, ગરીબી અને નિરક્ષરતા. ભારતમાં દિવસે દિવસે સાક્ષરતાનું પ્રમાણ પણ વધી જ રહ્યું છે. ભારત દેશ જેના હકારાત્મક વિકાસો તો ઘણાં છે જેવા કે સાક્ષરતાનો દર અને આર્થિક વિકાસ. પરંતુ આર્થિક વિકાસને વધારે અસર કરતું પરિબળ જો કોઈ છે તો એ છે વસ્તીવધારો. આમ, ભારતએ આઝાદી પછી ઘણી બધી બાબતોમાં હકારાત્મક અને નકારાત્મક વિકાસ કર્યો છે.

હવે માત્ર દેશની રાજકીય બાબતોમાં જો વધારે અસર કરતી કોઈ બાબત હોય તો એ છે કે ભારતના રાજકીય પક્ષો. ભારતમાં ઘણાં બધાં રાજકીય પક્ષો જોવા મળે છે. જે તેમના જ પક્ષ રાજકીય સત્તા ભોગવે તેના માટે ઘણાં પ્રયાસો કરે છે. હા, આ પક્ષોની અંદરો અંદરની લડાઈમાં ભારત દેશનો વિકાસ અવરોધાય છે. જો કોઈ પક્ષ ભારત દેશને સમૃદ્ધ કરવા માટેના નિયમો અથવા તો કોઈપણ કાયદો બહાર પાડે તો તેનો વિરોધ પ્રજા કરતાં તો રાજકીય પક્ષો વધારે કરતાં હોય છે. રાજકીય પક્ષોનું મહત્ત્વનું કાર્ય તો એ છે કે તેઓ પોતાની જાત દેશને સમર્પિત કરી દેશના વિકાસને અનુલક્ષીને જે બાબતો થતી હોય તેમાં કોઈ મતભેદ રાખ્યા વગર તેઓ પોતે જોડાય.

એ વાત આપણે સારી સમજી શકીએ કે કોઈ વસ્તુ હોય તો તેના ફાયદા અને ગેરફાયદા બંને હોય છે. જ્યારે આમ જ કોઈ નિયમ સરકાર આપે છે ત્યારે તેમાં ભારતને લાભ અને ગેરલાભ પણ હોઈ શકે છે. તો સત્તાધારી પક્ષ સિવાય બાકીના જે પક્ષ છે એ કોઈ નિયમ કે કાયદાની ભુલો કાઢ્યા વગર તે કાયદા કે નિયમની સારી હકારાત્મક બાબતોને સમજીને સાથ આપે જેથી ભારત દેશ વધારે વિકાસ કરી શકે. અને આમ પણ કહેવાય છે જ ને કે સત્તાધારી પક્ષ અને વિરોધી પક્ષ બંને એકજ રથનાં પૈડા છે. તો જ્યારે બંને સાથે રહીને ચાલે ત્યારે જ સવારી સારી થઈ શકે છે. આમ, બંને પક્ષો સાથે રહેશે તો જ દેશનો વિકાસ ઝડપથી થઈ શકશે. હા, એ વાત સારી કે દરેક પક્ષને પોતાનો પક્ષ રાજ કરે એ વધારે ગમે. પરંતુ એ પક્ષના લોકોએ પોતાનો પક્ષ જીતે તેની માટે પ્રજાને ભલાઈના કામ કરવા જોઈએ. અને પક્ષોના નેતાઓએ એ ભુલવું ના જોઈએ કે એ ભારતના પક્ષના નેતા પછી પરંતુ તે ભારતના નાગરિક પહેલાં છે. જેથી તેઓએ ભારતના વિકાસને પ્રાધાન્ય આપવું જોઈએ.

ભારતના રાજકીય પક્ષોની ઘણી એવી નકારાત્મક બાબતો છે જેના લીધે ભારત પાસે રહેલું યુવાધન આ બધી સમસ્યાઓના લીધે ભારતની બહાર ગતિ કરી રહ્યું છે અને ભારતના વિકાસને સાથ નથી આપી રહ્યું. અત્યારે ભારતને વિકાસની જરૂર છે તો રાજકીય પક્ષોએ યુવાધનને સમજાવવું જોઈએ કે ભારતને આગળ કેમ લાવવો છે. ભારતની તાકાત ગણી શકાય એવું યુવાધન જો ભારત પાસે નહીં રહે તો ભારતની યોજનાઓનો સાથ કોન આપશે ? અને ભારતનો વિકાસ કેવી રીતે થશે ? રાજકીય પક્ષોની આ આંતરીક બાબતો ભારત દેશના વિકાસને ખુબજ અવરોધે છે.



# Reflection 20<sup>18</sup><sub>19</sub>

તો ભારત દેશના બધા રાજકીય પક્ષો એક થઈને ભારતનો વિકાસ ના કરી શકે ? જે ગાંધીજી એકલા ભારતને આઝાદ કરી શકવાની ક્ષમતા ધરાવતા હોય અને સરદાર પટેલ જે એકલા હાથે 562 જેટલાં દેશી રજવાડાંઓને એક કરી શકતા હોય તો, આ રાજકીય પક્ષો એક થઈ ભારતનો કેટલો વિકાસ કરી શકે એમ છે ?

આમ, ભારત દેશના વિકાસને અવરોધતા મુખ્ય કારણો પૈકીનું એક રાજકીય બાબત પણ છે. રાજકીય પક્ષોએ ભારત દેશના વિકાસને પ્રાધાન્ય આપી ભારતના વિકાસમાં સહાયરૂપ બનવું જોઈએ. ના કે અવરોધતી બાબતોમાં સહાયરૂપ બને. ભારત દેશને હજી વિકાસ કરી શકે એવા અને તેના યુવાધનને સાચા માર્ગે લઈ જઈ શકે તેવા એક જવાબદાર નેતાની જરૂર છે. ભારતને વિકાસની ભૂખ હોય એવા નેતાની જરૂર છે. તો ભારતને આ રાજકીય પક્ષો અથવા તો યુવાનોમાંથી કોઈ એવા નેતા મળે જે ભારતને ભ્રષ્ટાચાર, ગરીબી, બેરોજગારીથી દૂર સારા અને સાચા માર્ગે લઈ જાય એ જ આશા.

જય હિંદ, જય ભારત.

Vyas Priya D.  
F.Y.B.Sc.

## પરિચય તારો

અવાજ આ હવાઓના અદ્ભૂત લાગે છે  
મને તો આ વાતાવરણ પણ તારામાં ઘૂટ લાગે છે.  
ગગન આ આખું એક સાગર લાગે છે  
મને તો આ તારાઓ પણ જાણે તારો શણગાર લાગે છે.  
નામ નથી કોઈ, અનેક ઉત્તર લાગે છે.  
મને તો તારી ઓડખાણ પણ જાણે મુજ ભીંતર લાગે છે.  
શબ્દોનો તો આ ખાલી સાથ લાગે છે  
મને તો તારી વાતોમાં પણ તારો સંગાથ લાગે છે.  
આંખો માંથી વહે એ ખાલી પાણી લાગે છે  
મને તો એ પાણી પણ સિંચાઈનું એક કારણ લાગે છે.  
બસ આ લખ્યું એ બધું ખાલી કવિતા લાગે છે  
મને તો પ્રત્યેક શબ્દ એક શીર્ષક લાગે છે.

"Ashmita"  
Parmar Dharti Vinodbhai  
S.Y.B.Sc. Microbiology

## જીવન જાણે...!

જીવન જાણે છે ઝરણું  
ઈચ્છાઓ છે એની જાણે જળ રણનું  
વિચારતા નઈ ક્યારેય કારણ જીવવાનું  
આમને આમ વહી જાય છે સમય જાણે એ પણ છે  
મારી જોડે ઉધાર બીજાનું.  
બદલાઈ છે ઘણું બધું, કોઈનું ઘણું બધું રહી  
જાય છે એમાં એવું ને એવું  
હું યાદોને દરરોજ શણગારું છું, પુનરાવર્તન એનું  
જરૂરી બનાવું છું  
જેટલી દૂર છે તારી છવી એટલો વાસ્તવિક આકાર  
આંખોને દેખાડું છું  
જે નથી વાસ્તવમાં, વિચારોથી એને બનાવું છું  
અનુભૂતિ થાય છે જ્યારે હયાતની, તારી હયાતી  
હું વધારે અનુભવી બનાવું છું  
બસ આમને આમ દિલચસ્પ દિવસો બનાવું છું  
કોણ કહે છે કે માયૂસી છે મનમાં મારા...  
બસ મારી મુસ્કાનો સ્રોતને વધારતી જાઉં છું  
બીજી વાર કહું છું, છે એક અનન્ય બનાવતી જાઉં છું  
બસ સમયની સાથે વહેતી જાઉં છું...  
સમયથી માંડી યાદો સુધી હિસાબ બરાબર કરતી જાઉં છું  
બાદ કરી થોડા આંસુઓને વધારે ખુશીઓ ઉમેરતી જાઉં છું...  
હા, હું ક્યારે થોડું તારા વગર જીવતી જાઉં છું.

Parmar Dharti Vinodbhai  
S.Y. B.Sc. (Microbiology)

## જીવનમાં ફાઇનાન્શિયલ પ્લાનિંગનું મહત્વ

દરેક વ્યક્તિએ જીવનમાં ફાઇનાન્શિયલ પ્લાનિંગ (નાણાકીય આયોજન) કરવું ખૂબ જ જરૂરી છે. પછી ભલેને તે શાળામાં જતુ બાળક હોય કે નિવૃત માણસ હોય કે કોલેજનો વિદ્યાર્થી. જીવનના દરેક તબક્કામાંથી પસાર થતી વ્યક્તિ વહેલી તકે નાણાકીય આયોજનનું જો મહત્વ સમજી શકે તો ભવિષ્યની નાણાકીય જરૂરીયાત જેવી કે સ્કૂલ-કોલેજ ફી, લગ્નખર્ચા, નવુ ઘર, જમીન, સોના-ચાંદીના ઘરેલા વગેરે જેવા ગંભીર વિષયોમાં સરળતાથી પાર નીકળી શકાય તેમ છે. આ બધી જરૂરીયાતો દરેક વ્યક્તિના જીવનનું અભિન્ન અંગ બની ગયું છે. કદાચ આ બધી જવાબદારીઓ ના હોત તો કદાચ તમે તમારા સ્વપ્નનું ઘર, લક્ઝરી બસ કાર વગેરે જેવા મોટા સ્વપ્નો પુરા કરી શકાત. પરંતુ નાણાકીય આયોજનના અભાવે અત્યારના મોંઘવારીના જમાનામાં આ માત્ર સ્વપ્ન સમાન જ રહેવાનું છે. આમ, પદ્ધતિ સરનું આયોજન/પ્લાનિંગ કરી તેના પર અમલ કરવો જરૂરી છે.

આપ પણ જ્યારે કમાવાનું શરૂ કરો ત્યારથી એક બચતની ટેવ પાડવી જરૂરી છે, નિષ્ણાતોના મતે આવકના 20% રકમ નીચેના પૈકી કોઈ યોજનામાં રોકવા જોઈએ.

- FD (ફિક્સ ડિપોઝીટ)
- રીયલ એસ્ટેટ
- ગોલ્ડ
- મ્યુચ્યુઅલ ફંડ્સ અને SIP
- વિવિધ રીંકરીંગ યોજનાઓ
- ઇક્વિટી શેર્સ
- ડિબેન્ટ્સ સરકારી યોજનાઓ જેવી કે અટલ પેન્શન યોજના (APS) પબ્લિક પ્રોવિડન્ટ ફંડ (PPF), પોસ્ટ ઓફિસ સ્કીમ (POS) અને ઘણી બધી.

આમ, આટલી બધી વૈવિધ્ય ધરાવતી યોજનાઓ અને કઈ અયોગ્ય? ઉપરાંત એમ પણ થાય કે મારે ઉપર્યુક્ત બધાંમાં રોકાણ કરવું જોઈએ ? કે માત્ર કોઈ એક પસંદગીની યોજનામાં?

જવાબ સરળ છે. એક વાત હંમેશા ધ્યાનમાં રાખવી જોઈએ કે વિવિધ ક્ષેત્રોમાં રોકાણ કરવાથી પ્રત્યેક ક્ષેત્રનો આગવો લાભ મળી શકે. એટલે કે આપણા રોકાણના પોર્ટફોલીયોમાં વૈવિધ્યકરણ (Diversification) ખૂબ જ જરૂરી છે. જેમ કે તમારી પાસે રોકાણ કરવાને માટે ₹ 5000 છે તો બધી મૂડી કોઈ એક ક્ષેત્રમાં રોકાણ કરવાને બદલે તેના અમુક ભાગ કરીને વિવિધ યોજના/રોકાણ કરવું જોઈએ જેમ કે અમુક ભાગ રિયલ એસ્ટેટમાં, અમુક ભાગ મ્યુચ્યુઅલ ફંડ્સમાં, અમુક ભાગ ગોલ્ડમાં વગેરેમાં રોકાણ કરીને પોર્ટફોલીયોને વૈવિધ્યકરણ કરી શકાય છે. તેના કારણે રોકાણનું જોખમ ઘટશે. આપણા દ્વારા કરવામાં આવેલ રોકાણ દર વખતે સલામત હોય તે જરૂરી નથી. આથી રોકાણ કરતી સમયે તે ધ્યાન રાખવું કે જોખમના કારણે એક સંપતિમાં થતું નુકશાન બીજી સંપતિના વળતર દ્વારા ભરપાઈ થઈ જાય.

ઉપરોક્ત પૈકીની કેટલીક યોજનામાં ચક્રવૃદ્ધિ વ્યાજ મળે છે.

“Compound interest is the eight wonder of the world. Who understand it earns it ..., Who doesn't, pays it”

- Albert Einstein.

મહાન વિજ્ઞાની આલ્બર્ટ આઈનસ્ટાઈન દ્વારા ચક્રવૃદ્ધિ વ્યાજ વિશે સાચું જ કહેવામાં આવ્યું છે. કારણ કે તે મૂડી પર મળતા વ્યાજનું પણ વ્યાજ આપે છે. જે નીચે મુજબનાં ઉદાહરણ દ્વારા સમજી શકાય.

ધારો કે ₹ 10,000, 5 વર્ષ માટે ઈન્વેસ્ટ કરો છો અને વ્યાજનો દર 10% છે.



# Reflection 20<sup>18</sup><sub>19</sub>

વર્ષ	સાદા વ્યાજના દરેથી વર્ષન્ટે મુડીનું મૂલ્ય	ચક્રવૃદ્ધિવ્યાજના દરેથી વર્ષન્ટે મુડીનું મૂલ્ય
1	11,000	11,047
2	12,000	12,240
3	13,000	13,482
4	14,000	14,894
5	15,000	16,453

આમ, ઉપરના ઉદાહરણથી સ્પષ્ટ થાય છે કે ચક્રવૃદ્ધિ વ્યાજના દરે થતું રોકાણ લાંબા સમયે આશ્ચર્યજનક ફાયદો આપે છે. આથી જે આપણા જીવનના લક્ષ્યો, જરૂરીયતોને વહેલી તકે સમજીને પદ્ધતિસર રોકાણ કરવામાં આવે તો રોકાણ પર વળતર મેળવી શકાય છે.

સિસ્ટમેટિક ઇન્વેસ્ટમેન્ટ પ્લાન (SIP) મ્યુચ્યુઅલ ફંડ્સ, રિંકરીંગ ડિપોઝીટ વગેરે જેવી યોજનાઓની મદદથી ચક્રવૃદ્ધિ વ્યાજના દરનો ફાયદો મેળવી શકાય છે.

## પદ્ધતિપૂર્વક રોકાણનું આયોજન ( સિસ્ટમેટિક ઇન્વેસ્ટમેન્ટ પ્લાન-SIP) :

જો પદ્ધતિપૂર્વક રોકાણનું આયોજન (SIP) કરેલ હોય તો નાની મૂડી રોકાણ કરીને ધનવાન બની શકાય છે. એના માટે જરૂરી નથી કે ધન વારસામાં મળેલ હોય તો જ ધનવાન બની શકાય.

## SIPના ફાયદાઓ :

- દર મહિને નિયમિત રોકાણ કરવાથી લાંબા ગાળે ઉત્તમ વળતર મળે છે.
- SIP માં ફક્ત દર મહિને ₹ 100 અથવા ₹ 500 જેવી નાની અમથી રકમથી રોકાણની શરૂઆત કરી શકાય છે.
- સાથે-સાથે ચક્રવૃદ્ધિ વ્યાજના દરનો પણ લાભ મળે છે.
- દર મહિને પૈસા ભરવાનું યાદ રાખવું પડતું નથી કારણ કે દર મહિને પૈસા, બેંક એકાઉન્ટમાંથી ઓટોમેટિક કટ થઈને રોકાણ થઈ જાય છે.
- શેર બજારના જોખમ વગર બેંક - RD જેવી પણ સુરક્ષિત રોકાણ યોજનાના વિકલ્પો પણ છે.
- દર મહિને રોકાણ થતું હોવાથી માર્કેટની એવરેજ (રૂપી કોસ્ટ એવરેજિંગ) નો લાભ મળે છે. જેમ કે, ખરાબ સમયના માર્કેટમાં વધુ યુનિટ મળે છે અને સારા સમયના માર્કેટમાં તે રોકવાનું મૂલ્ય વધે છે. આમ, બંને બાજુ ફાયદો જોવા મળે છે.

આમ, પદ્ધતિપૂર્વક રોકાણના આયોજનથી તમારે માર્કેટ-શેરબજારની સ્થિતિની નજર રાખવી પડતી નથી અને સમય પણ બચાવે છે. એક જ સમયે કરેલા રોકાણમાં વધુ જોખમ હોય છે. જ્યારે પદ્ધતિપૂર્વકના રોકાણ (SIP) માં રૂપી કોસ્ટ એવરેજિંગની મદદથી જોખમને ઓછું કરી શકાય છે.

વિશ્વના અમીરોમાં જેની ગણના થાય છે. તેવા વોરેન બફેટે માત્ર 11 વર્ષની ઉંમરમાં ઇન્વેસ્ટમેન્ટની શરૂઆત કરી હતી.

આમ, કહી શકાય કે તમારી ઉંમર તમારા ઇન્વેસ્ટમેન્ટ પોર્ટફોલીયો નક્કી કરે છે. આમ, જેમ બને તેમ વહેલા નાની ઉંમરથી જ ઇન્વેસ્ટમેન્ટ ની શરૂઆત કરવી જોઈએ. આમ, કોઈ પણ ઉંમર કરતા જેમ બને તેમ નાની ઉંમરમાં થતું રોકાણ વધુ લાભદાયક છે.

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## તા. 20-01-2019ની એલ્યુમીની એશોસીએશનની મેગા મીટ ઉપલક્ષ્યે આચાર્યશ્રીનું સંબોધન

ઓમના ઉચ્ચારણ સાથે શરૂઆત

મંચ પર ઉપસ્થિત મહાનુભાવો - આજના કાર્યક્રમના અધ્યક્ષ અને ચાર્ટર વિદ્યામંડળના અધ્યક્ષ ઇજનેરશ્રી ભીખુભાઈ પટેલ સાહેબ, ચાર્ટર વિદ્યામંડળના માનનીય મંત્રી ડો. એસ. જી. પટેલ સાહેબ આજના આપણા મુખ્ય મહેમાન શ્રી સી. ઝેડ. પટેલ સાહેબ આજે આપણે જેનું સન્માન કરવાના છીએ તેવા શ્રી આર. પી. પટેલ સાહેબ જેઓ આ સંસ્થાના આચાર્ય તરીકે કામગીરી કરી સેવાનિવૃત્ત થયા. ડો. એચ. સી. ત્રિવેદી સાહેબ આ સંસ્થાના ભૂતપૂર્વ વિદ્યાર્થી તેમજ ભાવનગર યુનિ. ના ભૂતપૂર્વ V. C., શ્રી નટુભાઈ પટેલ મેઘમણી કેમીકલ્સના ડાયરેક્ટર, ડો. સી. કે. પટેલ શિક્ષણવિદ તેમજ ઉદ્યોગપતી.

મારી સામે બેઠેલા મંડળના પદાધિકારીઓ, વડીલ સેવાનિવૃત્ત શિક્ષકો, વડીલ ભૂતપૂર્વ વિદ્યાર્થીઓ મારા સ્ટાફ મિત્રો, વિદ્યાર્થીઓ આપ સર્વને આજના આ પ્રસંગે આવકારું છું.

એપ્રિલ-1947માં ચાર્ટર વિદ્યામંડળની સ્થાપનાના પહેલા સોપાન સ્વરૂપે વી.પી. મહાવિદ્યાલયનો પ્રારંભ થયો. કહેવાય છે કે એક ભવ્ય સમારોહમાં સરદાર સાહેબ ચાંદીની ચાવીથી ચાંદીના તાળાને ખોલી આ મહાવિદ્યાલયનું ઉદ્ઘાટન કરેલ. સરદાર સાહેબ તેમના ઉદ્બોધનમાં કહેલ કે “આપણે દેશના ઘડતર માટે ખડતલ નાગરીકો તૈયાર કરવાના છે તેમને નોકરી શોધતા લુલા-પંગળા નથી બનાવવાના” આ સાથે જ તેઓએ ગ્રામ્ય સંસ્કૃતિ, ગ્રામ્ય ઉત્થાન, ઉચ્ચ શિક્ષણ વિશે ખૂબ જ ચીવટતાથી વાતો રજૂ કરી હતી. 1947માં આ મહાવિદ્યાલયમાં મુંબઈ યુનિવર્સિટીથી સંલગ્ન હતી. તે વખતના મુંબઈના યુનિવર્સિટીના V.C. જસ્ટીસ ચાંગલાએ એક જગ્યાએ ઉલ્લેખ કર્યો છે કે યુનિવર્સિટી is honored to affiliate this college at vidhiyanagar.

આટલી શુભ શરૂઆત જે મહાવિદ્યાલયની હોય તેને પાછું વાળીને જોવાનું ન આવે સમય વિતતો ગયો અને આજે આ મહાવિદ્યાલય તેની સ્થાપનાના 7 દાયકા પૂર્ણ કરી 8 મા દાયકા તરફ અગ્રેસર છે અને પ્રગતી નવા નવા સોપાનો સર કર્યા છે. ભૂતકાળમાં આ મહાવિદ્યાલયને શ્રી આર.પી.પટેલ સાહેબના જ નેતૃત્વમાં સતત ત્રણ વખત રાજ્યની શ્રેષ્ઠ કોલેજનો એવોર્ડ મળેલ છે, જે આપણા સહુ માટે ગૌરવની બાબત છે. આ જ પરંપરાને જાળવી હાલ કોલેજે રાજ્ય તેમજ રાષ્ટ્રી કક્ષાએ “છ” ગ્રેડ મેળવેલ છે. સાથે જ UGC, Delhi દ્વારા “કોલેજ વિથ પોટેન્શીયલ ફોર એક્સીલન્સ” CPE નું બીરૂદ પણ પ્રાપ્ત થયેલ છે. રાષ્ટ્ર કક્ષાએ કોલેજના NIRF દ્વારા 61મો ક્રમ આપવામાં આવેલ છે.

કોલેજમાં ભણવામાં તેમજ ઘરેલુ પ્રવૃત્તિઓ માટે ખૂબ જ ઉમદા વ્યવસ્થા ઉભી કરેલ છે. જેમાં દરેક ક્લાસરૂમમાં LCD, Projectors, Wi-fi campus, smart Class Room, કોમ્પ્યુટર લેબ, અધ્યતન અને સર્પૂર્ણ કમ્પ્યુટરાઈઝ્ડ લાયબ્રેરી, ઉલ્ટ્રા લેબોરેટરીસ, રમતગમતના સાધનો વગેરે ઉપલબ્ધ છે.

આ બધી સુવિધાના કારણે જ આજે પણ યુનિવર્સિટીની જ્યારે મેરીટ યાદી જાહેર થાય ત્યારે આ કોલેજના લગતા 11 ગોલ્ડ મેડલમાંથી સરેરાશ 6-7 અને ક્યારેક 8 ગોલ્ડમેડલ પ્રાપ્ત થયેલ છે. કોલેજમાં ચાલતા સંશોધનની વાત કરીશું તો હાલ 1 કરોડથી વધુના પ્રોજેક્ટ પર સંસ્થાના શિક્ષકો કામ કરી રહ્યા છે. કોલેજના શિક્ષકોનો સરેરાશ અનુભવ 25 વર્ષનો છે. અને હાલ આ કોલેજની વિદ્યાર્થી સંખ્યા 1900 પાર કરી ચુકી છે.

એલ્યુમીની એશોસીએશન- કોલેજમાં આમ તો ગોલ્ડન જ્યુબીલી સમયથી એલ્યુમીની એશોસીએશન કાર્યરત છે. પાછલા 10 વર્ષથી કોલેજના સીનીયર અધ્યાપક શ્રી પી.એ. લશ્કરી કે જેઓ ઇલેક્ટ્રોનિક્સ વિભાગના વડા છે તેમણે આની કામગીરી સચોટ સંભાળી છે. અને હાલ શ્રી એન.વાય. પટેલ કે જેઓ ગણિત વિભાગના વડા છે જે આ કામગીરી સંભાળી રહ્યા છે. કોલેજ લગભગ દર બે વર્ષે આ રીતે મેગા મિટનું આયોજન કરે છે. કોલેજ તેની વેબસાઇટ પર રજીસ્ટ્રેશન ફોર્મ પણ મુકેલ છે. જેમાં ખૂબ જ મોટી સંખ્યામાં વિદ્યાર્થીઓએ રજીસ્ટ્રેશન કરાવેલ છે. કોલેજનું એલ્યુમીનીનું વોટ્સઅપ ગ્રૂપ પણ તાજેતરમાં જ શરૂ કરવામાં આવેલ છે. જેમાં પણ ખૂબ સારો પ્રતિસાદ વિદ્યાર્થીઓ તરફથી મળેલ છે. CVM ના ચેરમેન તેમજ વાઈસ-પ્રેસીડેન્ટ શ્રી મનીષભાઈ પટેલના આદેશ અને પ્રયાસોથી હવે આપણે આ એશોસીએશનના રજીસ્ટ્રેશન કરવા જઈ રહ્યા



# Reflection 20<sup>18</sup><sub>19</sub>

છે. દેશ-વિદેશમાં વસતા તમામ ભૂતપૂર્વ વિદ્યાર્થીઓ આ સમૂહમાં જોડાય તેવી અમારી નમ્ર વિનંતી છે.

**NEED** - કોલેજમાં તમામ ભૂતપૂર્વ વિદ્યાર્થીઓ એક બીજા સાથે જોડાય તેમજ વિવિધ પ્રકલ્પો પર કામ કરે તે મુખ્ય હેતુથી આપણે આ એશોસીએશનને ઉભું કરી રહ્યા છે.

હાયર એજ્યુકેશનની હાલની પરીસ્થિતિ ખૂબ જ વિકટ છે. સરકારશ્રી તરફથી પાછલા લગભગ 2 દાયકાથી નવી ભરતી કરેલ નથી. ફક્ત આ કોલેજમાં લગભગ 50-60 શૈક્ષણિક તેમજ બીન-શૈક્ષણિક જગ્યાઓ ખાલી છે. જેનો બોજ સીધો મેનેજમેન્ટ પર આવે છે. અને એકંદરે ક્વોલીટી જાળવી રાખવી અઘરી બને છે.

આપણું આ ભવન કે જે હવે હેરીટેજની કેટેગરીમાં આવે છે તેની જાળવણી પણ અત્યંત મુશ્કેલ છે. દિવસે દિવસે નવી સ્વનિર્ભર એન્જીનીયરીંગ, ફાર્મસી, મેડીકલ કોલેજો આવવાથી પ્રતિસ્પર્ધા વધતી જાય છે.

કોલેજ જ્યારે 75 વર્ષની તરફ અગ્રેસર છે. ત્યારે તેના ભૂતપૂર્વ વિદ્યાર્થીઓ આગળ આવે અને સંસ્થા કે જેના થકી તેઓ એક સફળ જીવન મેળવી શક્યા, પડખે ઉભા રહે તેવી નમ્ર વિનંતી છે.

સંસ્થાના 75 વર્ષ(2021-22)ની ઉજવણી ભવ્ય રૂપે કરવા આપણે સહુ તૈયાર થઈએ.

આવનારા સમયમાં ફેબ્રુઆરી-માર્ચમાં NACC તેમજ AAA ની ટીમ આવનાર છે ત્યારે આપને ફરી બોલાવીશું તો તમારે સંસ્થા માટે આવવાનું છે.

સંસ્થાએ ઘણા બધા ભવિષ્યના પ્લાન તૈયાર કરેલ છે. જેને વાસ્તવિકતામાં પરીવર્તન કરવા આપ સહુના સહકારની અપેક્ષા છે. અમુક મોટા પ્રકલ્પોમાં સંસ્થા લાયબ્રેરી ખાતે બે માળ ઉભા કરવાનું, કેન્ટીન અધ્યતન કરવાની, સોલાર સિસ્ટમ વગેરે છે. આ ઉપરાંત સંસ્થાના એન્ડોવમેન્ટ તેમજ એલ્યુમીની ફંડને પણ મજબુત કરવાનું થાય જેથી ભવિષ્યમાં સંસ્થા કોઈપણ યુનોતીનો સામનો સરળતાથી કરી શકે.

આજના આ તબક્કે સર્વનો આભાર માની વિરમું છું.

જય જય વિદ્યાનગર, જય વી.પી. સાયન્સ.

## નથી તોય...

પંખીઓ ઊડવાના ક્લાસ નથી ભરતાં  
ન માછલી સ્વિમિંગ પુલ જાતી  
પુશ્પુએ વાયરાનું ટ્યુશન ક્યાં રાખ્યું છે ?  
તો પણ એ કેવી ફેલાતી.

તમરો વિશારદ નથી તોય ગાય  
કહે ફૂલોને કાનમાં પતંગિયાં  
ખેટરીનું ખાનું વિજ્ઞાન નથી જાણતા  
તો પણ શું ચમકે છે આગિયા.

ઝરણાંઓ પૂછીને ભૂયકો ન મારતાં  
કેટલીક મળવાની ખ્યાતિ... પંખીઓ.  
ઝાડવાંઓ યોગાસન શીખ્યાં નથી જ  
છતાં ઉભા અડગ ચરણે

કીડી મંકોડાને ચિંતા ક્યાં હોય છે  
કોણ મારી દિકરીને પરણેય  
ઈર્ષા આવે દોસ્ત! એ રીતે ઉજવે છે  
એ લોકો એમની હયાતી... પંખીઓ.

પર્વત પણ બી.એ., બી.એડ. નથી તોય  
એની વાદળ સુધીની પહોંચ  
માણસ શું શીખ્યા કે માણસાઈ લંગડાતી  
મનમાં પહેરી જાણે મોચ

આપણને નહીં એ લોકોને જોઈને  
ઈશ્વરની છાતી ફુલાતી... પંખીઓ...

Prachi A. Megha  
S.Y. B.Sc.

## હયાતી તારી...

હું ચાહું છું જ્યાં તને પામું છું  
દરરોજ જીવનની અલગ મજા માણું છું  
તારા કહેવાથી કંઈ બદલાયું નથી  
બસ, તારા શબ્દોને સાથે લઈને ચાલું છું  
હું જ બસ જાણે તારા વિષયને આટલું મહત્ત્વ આપું છું  
જાણે પ્રત્યેક ઘડી મારા જીવનને પાલું છું.  
હું નથી જાણતી અસ્તિત્વ મારું પણ  
મારો શ્વાસ એ તારો પ્રસાદ માનું છું.  
હું વિચારું છું જાણે પોતે કલ્પનામાં દોડી રહી છું.  
સવારે સૂરજ તારા સ્મિતનો હું સ્પર્શી લઉં છું.  
ભાષા એ સ્પર્શની હું દીન આપો બોલ્યા કરું છું  
જીવન પણ કેટલું અજીબ છે મારું...  
હું ખૂલી આંખે, અભાવે રાત્રી ના બસ...  
સપનાઓ જોયા કરું છું.  
હે પ્રભુ ! બસ તારા સંગાથને વાગોડ્યા  
કરું છું જાણે તું છું હર ક્ષણ પાસ એમ  
વરત્યા કરું છું.

"Ashmita"  
Parmar Dharti Vinodbhai  
S.Y.B.Sc. Microbiology



## અમારી મહાવિદ્યાલય

જેમ કીંચડમાં કમળ ખીલી ઊઠે છે, તેમ કદાચ  
અમારી મહાવિદ્યાલય એ ગુજરાતરૂપી આંગણામાં ખીલી ઊઠે છે  
શું ગણો છો અમારી આ મહાવિદ્યાલયને...

જેમ અશ્વરૂપી રથ સારથી વિનાનો અધુરે છે તેમ,  
આ સરદાર પટેલ યુનિવર્સિટી એ અમારી મહાવિદ્યાલય વિના કદાચ અધુરી છે  
શું ગણો છો અમારી આ મહાવિદ્યાલયને...

અમારી આ મહાવિદ્યાલયને અંધકારરૂપી મહેલમાં સ્થગિત કરવામાં આવે  
તો પણ એ અંધકારરૂપી મહેલમાં દિવડાની માફક જળહળતી જોવા મળે  
શું ગણો છો અમારી આ મહાવિદ્યાલયને...

અમારી મહાવિદ્યાલય એ એક એવી ફળદ્રુપ જમીન છે કે જેમા  
બીજ રોપ્યા પછી નિંદણ નિકાળવાની જરૂર હોતી નથી  
શું ગણો છો અમારી આ મહાવિદ્યાલયને...

જેમ એક મોતી રૂપી માળામાં અનેક પ્રકારના મોતી પરોવાઈ જાય છે  
તેમ અમારા પ્રિન્સિપાલના વિશ્વાસ રૂપી દોરમાં અમે બધા પરોવાઈ ગયા છીએ  
શું ગણો છો અમારી આ મહાવિદ્યાલયને...

Govind R. Vachhola  
T.Y. B.Sc. (Physics)

## મહાત્માઓની મુંઝવણ

મળ્યા મને સાર્થનાથ શિરડીમાં, હતા મુંઝવણમાં  
મારે 15 કરોડનો મુંગટ શું કરવાનો?  
મઝાક છોડો, ફરું છુ ખુલ્લા પગે ખભામાં ઝોળી લઈને.  
મળ્યા મને શ્રીકૃષ્ણ પ્રભુ મથુરામાં, હતા મુંઝવણમાં  
જન્મ્યો જેલમાં, હજી ક્યાં સુધી પુરી રાખશો અંધ દરવાજે?  
પંપા સરોવરે હતા શ્રીરામ નિરાશ  
બોલ્યા પ્રભુ, ઠેર ઠેર રાવણ ફરે છે.  
નથી હનુમાન જેવા કોઈ ભક્ત.  
મળ્યા બાપુ પોરબંદરના કિર્તિ મંદિરે, હતા દુખી  
કરી છે દારૂબંધી છતા પીએ બધા લહેરથી  
ભલે મારી ગોડસેએ ગોળી નહિંતર હું કરત આત્મહત્યા  
મળ્યા મને નરસિંહ મહેતા જૂનાગઢમાં, હતા દુઃખી  
ગવાય માત્ર પ્રાર્થનામાં નથી ક્યાં સાચા વૈષ્ણવજન.  
નયન ખોલીને જોયું પરોઢિયે તો હતુ આ સ્વપ્ન  
છતાં પણ નજરે કેમ પડે છે આ સાચું ?

Prachi A. Megha  
S.Y. B.Sc.



## हिन्दी : में एक राष्ट्रभाषा ?

हम एक ऐसे गणतंत्र देश में रह रहे हैं कि जो विश्व का सबसे बड़ा लोकशाही देश है। हमारे देश में कई भाषाएँ बोली जाती हैं और सभी भाषाओं का एक अपना ही महत्व है, पर इन सभी भाषाओं में से हमारे देश के ऊँचे पट पर बड़े लोगोंने मेरा (हिन्दी भाषा) चयन किया हुआ है।

मुझे एक राष्ट्रभाषा बनाया गया है, जिसका मुझे गर्व है, पर मे बहुत दुःखी हृदय से यह कह रही हूँ कि मुझे इतना सन्मान नहीं मिल रहा है। हमारे देश में दक्षिण के लोग मुझे बोलना भी उचित नहीं समझते। वे लोग सिर्फ अपनी प्रादेशिक भाषा और अंग्रेजी भाषा का उपयोग करते हैं। क्या ये सही है? क्या उन्हें हमारी राष्ट्रभाषा पर गर्व नहीं है? क्या मे इतनी अनुचित हूँ कि जिसे लोग विदेशों में जा कर बोलने पर भी नीचा महसूस करते हैं। हमारे प्रधानमंत्री श्री नरेन्द्र मोदीजी भी बहार बड़े बड़े सम्मेलनों में जाते हैं, तो वे भी अंग्रेजी का उपयोग करते हैं। हमारे देश के महान पुरुष श्री स्वामी विवेकानंदजीने भी आंतरराष्ट्रीय सम्मेलन में गये ते तब वहाँ बड़े सभी देशों के आगोवानों के सामने हिन्दी में अभिवादन किया था, और सभी लोगो ने उसे पसंद भी किया था। तो फिर तुम सब अभी कैसे भूल रहे हो ?

21 वीं सदी में लोग इतने आगे निकल गए हैं, कि वे लोग अंग्रेजी बहुत ही अच्छी तरह से बोल लेते हैं, पर उनको दो मिनट के लिए हिन्दी में अपना व्यक्तित्व भी बोलने को कहेंगे तो भी वे अच्छी तरह से नहीं दे पाएंगे।

हमारी शिक्षण व्यवस्था में भी 10 वीं में से मुझे वैकल्पिक कर दिया है। हमारी पाठशाला एवं कॉलेजों में भी बड़े बड़े कार्यक्रमों में भी उद्घोषकता भी अंग्रेजी में कि जा रही है, क्या ये सही है ?

हम हमारी भाषा भूल रहे हैं, और दूसरों की भाषा जो हमें गुलाम बना कर, लूटकर चली गई है उसको स्वीकार कर रहे हैं।

में धारक सेवक आप सबसे यह विनंती करना चाहता हूँ कि हमें सब कुछ आना चाहिए पर उसके साथ हमें हिन्दी भाषा अच्छी तरह से आनी चाहिए। हमें हमारे देश की भाषा को तो कदापि भूलना नहीं चाहिए।

**Dharak Sevak**  
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## भारतीय सेना – देश की शान

भारतीय सेना पर हर भारतीय को गर्व है ओर हो भी क्यों न, यह भारतीय सेना ही जो भारत को हमेशा दुश्मनो से दूर रखती है। भारतीय सैनिक अपनी जान पर खेलकर हमारे वतन को सुरक्षित और स्वतंत्र बनाये रखते हैं। उनकी वीरता और स्वतंत्रता बनाये रखते हैं। उनकी वीरता और कर्तव्य-भावना के लिए पूरा देश उन्हें सम्मान की नजरो से देखता है। जैसे तो हममें से लगभग सभी को उनके योगदान और उनकी उपलब्धियों के बारे में कुछ न कुछ तो पता ही है। परंतु यहाँ हम जिन बातों का जिक्र करने जा रहे हैं, उससे आपका भारतीय सेना के प्रति सम्मान और बढ़ जाएगा।

भारत के पास दुनिया की सबसे बड़ी “स्वैच्छिक” सेना है। भारतीय संविधान में अनिवार्य भर्ती का प्रविधान होते हुए भी भारतीय सेना को अपने पूरे इतिहास में कभी भी ऐसा करने की आवश्यकता नहीं पड़ी। पूरी सेना का हर एक सैनिक अपने स्वयं की इच्छासे इसमें शामिल हुआ है।

भारत की अन्य सरकारी संगठनों एवं संस्थाओं के विपरीत, भारतीय सेना में जातियाँ धर्म के आधार पर किसी भी तरह है आरक्षण का प्राधान्य नहीं है। सैनिकों को उनके परिक्षणों में केवल उनके द्वारा प्रदर्शित की गई उनकी योग्यताओं और शारीरिक क्षमताओं के आधार पर ही चुना जाता है।

सियाचिन ग्लेशियर इस दुनिया का सबसे ऊँचाई पर स्थित रणक्षेत्र है, जो कि समुद्र तल से 5000 मीटर की उंचाई पर है। यहाँ पर तापमान 50 डीग्री से नीचे चला जाता है और इतने कठिन वातावरण में भारतीय सेना हर पल सीमा की सुरक्षा करती रहती है।

लॉगेवाला की लड़ाई बहुत ही मशहूर लड़ाई है। बाद में जिसकी कहानी से प्रभावित होकर बॉलीवुड में ‘बोर्डर’ नाम से एक फिल्म भी बनाई गई। यह लड़ाई सन् 1971 में भारत और पाकिस्तान के बीच हुई थी। इसमें जहाँ एक तरफ तो 2000 पाकिस्तानी सैनिक थे, तो दूसरी तरफ सिर्फ 120 भारतीय सैनिक थे। भारतीय सैनिकों के पास एक जीप पर लगी हुई एक एम 40 राइफल – लेस के अलावा कोई भी विशेष घातक हथियार नहीं था। वहीं दूसरी ओर पाकिस्तानी सैनिकों के पास 45 टैंक और एक मोबाइल इन्कैंड्री ब्रिगेड था। बहुत ही कम संख्या और लगभग हथियार-विहीन होने की विपरीत परिस्थितियों में भी भारतीय सैनिकों ने दुश्मनों को अपनी पीठ नहीं दिखाई। वो मेदान ए जंग में पूरी रात तब तक दटे रहे जब तक कि उनकी मदद को सुबह वायुसेना न आ गई और दुश्मनों को उल्टे पैर भागने को मजबूर न कर दिया।

ओपरेशन राहत (2013) अब तक का किया जाने वाला दुनिया का सबसे बड़ा असैनिक बचाव कार्य है। इस अभियान को भारतीय वायुसेना ने उतराखंड में बाढ़ से प्रभावित नागरिकों को बचाने के लिए संचालित किया था। इसके पहले चरण, 17 जून 2013 से आगे, में वायुसेना के हेलीकॉप्टरों की मदद से कुल 2 लाख लोगों को बचाया और 3 लाख 82 हजार 4 सौ किलोग्राम की राहत सामग्री और उपकरणों को पहुँचाया।

इस लिए मुझे भारतीय होने पर गर्व है।

जय हिन्द

Arun P. Kachot  
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## सपने

तुटे सपने एक सहमे से किनारे कि तरह है। जिसमें बस एक दबी हुई आवाज है जो ना सुनी जा सकती है और ना सुनाई जा सकती है। बस महसूस की जाती है। लोग कहते है सपने तुट जाते है तो इंसान बिखर जाता है। लेकिन ये भी सच है कि इंसान बिखर जरूर जाता है, पर उसका हौंसला नही क्युकि सपने वो नहीं होते जो पूरे किये जाते है। बल्कि सपने वो होते है जिसे पुरा करने का जूनून हो पर तुट जाने का गम नहीं।

सपने जिना सिखाते है, कुछ पाने का हौंसला दिलाते है, कुछ पाने का जब्बा देते है। इंसान तब नहीं बिखरता जब उसका सपना उसकी ख्वाहिशे तुटती है, लेकिन वो तब बिखर जाता है जब उसका हौंसला उसका आत्मविश्वास तुटता है। और तुटे हुए हौंसले को जोडना ही, आत्मविश्वास है। अंधेरा चाहे कितना भी गहरा हो, पर उस अंधेरे मे भी जो रोशनी बिछाडे वो ही हौंसला होता है। समुंदर चाहे कितना भी गहरा हो वो आसमान को कभी डुबो नहीं सकता, वैसे हि मुश्किले कितनी भी कठिन हो वो अंदर समाये जुनुन को कभी नहीं तोडे सकती। विफलता चाहे कितनी भी बार टकरा जाये लेकिन उसे भी पार करने की क्षमता को सपने कहते है। और सपने को हकिकत मे बदलने की चाह को हौंसला कहते है।

जिने के लिए मकसद नहीं वजह दुंदो  
जिने के लिए यादे नहीं पल दुदो  
क्युकी वजह हंमेशा मकसद देती है और  
पल जिवन की यादे देता है।

धन्यवाद

Ekta Luhar  
S.Y. Microbiology

## जिंदगी से दो बातें

गीता में लिखा है कि अगर कोई बहुत हँसता है तो अंदर से बहुत अकेला है। अगर कोई इंसान बहुत सोता है तो अंदर से बहुत उदास है। अगर कोई इंसान खुद को बहुत मजबूत दिखाता है तो अंदर से कमजोर है। अगर कोई इंसान हर बात पर नाराज हो जाता है तो अंदर से वह अकेला महसूस करता है। लोगो को समझने की कोशिश कीजिए जिंदगी किसी का इंतजार नही करती। लोगो को अहेसास कराईये कि वो आपके लिए कितने खास है। अगर जिंदगी मे कुछ पाना है तो तरीके बदलो, इरादे नहीं। जि सके पास उम्मीद है वह लाख बार हार के भी नहीं हार सकता।

रुक बहुत अच्छी बात जिंदगी भर याद राखेरु : आपका खुश रहना ही आपका बुरा चाहने वालों के लिए सबसे बडी सजा है। बेहतरीन इंसान अपनी मीठी जूबान से ही जाना जाता है, वरना अच्छी बातों तो दीवारों पर भी लिखी रहती हैं। पहले मैं होंशियार थी इसलिए दुनिया बदलने चली थी, आज मैं समजदार हूँ इसलिए खुद की बदल रही हूँ।

Dhrashti S. Patel  
S.Y. B.Sc.



## जिन्दगी की सच्चाई

मिली थी जिन्दगी किसी के काम आने के लिए,  
पर वक्त बीत रहा है, कागज के टुकड़े कमाने के लिए ।  
क्या करोगे ? इतना पैसा कमाकर ना कफन में जेब है,  
और ना कब्र मे अलमारी, और ये मौत के फरीश्ते तो रीश्त भी नहीं लेते....।

आगे बढ़ने वाला व्यक्ति कभी किसी को बाधा नहीं पहुँचाता,  
और दुसरो को बाधा पहुँचाने वाला व्यक्ति कभी आगे नहीं बढ़ता ।

गुस्सा अकेला आता है मगर हमसे सारी अच्छाई ले जाता है,  
सब्र भी अकेला आता है, मगर हमे सारी अच्छाई दे जाता है ।

समाज मे बदलाव क्यों नहि आता, क्योंकि गरीब मे हिम्मत नहीं,  
मध्यम मे फुर्सत नहीं और अमिर को जरूरत नहि ।

मंदिर मे वो भगवान है जिसे हमने बनाया है,  
लेकिन घर मे माँ-बाप वो भगवान है जिन्होंने हमे बनाया ।

जो आपकी खुशी के लिए हार मान लेता है,  
आप उससे कभी जीत नहि सकते ।

समय जिसका साथ देता है, वह बड़े बड़े को मात देता है,  
अमिर के घर पर बैठा कौवा भी सबको मोर लगता है,  
और गरीब का भूखा बच्चा भी सबको चोर लगता है ।

कौन कहता है जैसा संग वैसा रंग..?  
इंसान लोमड़ी के साथ नहीं रहता फिर भी “शातिर” है,  
इंसान शेर के साथ नहीं रहता फिर भी “क्रूर” है,  
और तो और इंसान वो फितरत है जो कुत्ते के साथ रहता है,  
फिर भी वफादार नहीं है ।

संसार जरूरत के नियमो पर चलता है,  
सर्दियो मे जिस सूरज का इंतजार होता है,  
उसी सूरज का गर्मियो मे तिरस्कार भी होता है,  
आपकी किमत तब होगी जब आपकी जरूरत होगी ।

मंदिरों मे क्यों दूढ़ते हो उसे, वो वहा भी है,  
जहां तुम गुनाह और अपराध करते हो ।

किसी की अर्थी यात्रा मे जाओ तो ये मत समझना कि आप उसे उसकी मंजिल पर ले जा रहे है,  
बल्कि यह समझना की अर्थी पर भेटा इंसान, मुर्दा होकर भी तुम्हे तुम्हारी मंजिल दिखाने ले जा रहा है ।

Pooja Munnabhai Sharma  
T.Y. B.Sc. Microbiology



## यह मत सोचो की दुनिया क्या सोचेंगी

आपकी हर अच्छाई को दुनिया सहारेगी,  
पर एक गलती पर आप ही को कोसेंगी,  
यह मत सोचो की दुनिया क्या सोचेंगी ॥1॥

आपके संघर्ष मे दूसरो की खामोशी सवालो में बदलेगी,  
लेकीन खुद के होंसले ले ही मंजिल मिलेगी,  
यह मत सोचो की दुनिया क्या सोचेंगी ॥2॥

बिना हार माने संघर्षों का सिलसिला जारी रखना,  
आपकी महेनत के आगे एक दिन तकदीर भी झूकेगी,  
यह मत सोचो की दुनिया क्या सोचेंगी ॥3॥

मत देखो खुद को दुसरो के नजरिये से,  
एक दिन आपकी सोच सबका नजरिया बदलेगी,  
यह मत सोचो की दुनिया क्या सोचेंगी ॥4॥

आज भले ही अंधेरो से शाम ढलेगी,  
आपके मजबूत इरादो से सुनहरी सुबह भी निकलेगी,  
यह मत सोचो की दुनिया क्या सोचेंगी ॥5॥

कहने दो जिनको जो भी कहना है,  
पर अपने इरादों पे कायम रहना है,  
रहा अगर खुद पे भरोसा,  
तो जिंदगी भी एक दिन मिसाल बनेगी,  
यह मत सोचो की दुनिया क्या सोचेंगी ॥6॥

Devanshi J. Rathod  
T.Y. B.Sc Microbiology



## ॥ श्री विष्णु सप्तकम् ॥

## गुरुदेव पावन चरण में

परमेश्वरम् जगदिश्वरं, हे राम जनकसुटावरं,  
अखिलेश्वर रासेश्वर, हे कृष्ण गोपिहृदयहरम् ।  
मत्स्यावतार त्वम प्रभु मम्, हे मधुकेटब संहारकम्,  
कश्यपावतार त्वम प्रभु मम्, हे मोहिनी ती सुंदरम् ।  
वारहावतार त्वम प्रभु मम्, हे भूमिमुकुटधारकम् ,  
नरसिंहम् त्वम प्रभु मम्, प्रहलाद तारणहारकमे ।  
हे वामन त्वम प्रभु मम्, दैत्यराज बलिस्य कल्याणकम्,  
नमामि श्री परशुराम, हे दुष्टबुद्धि संहारकम् ।  
सर्वशक्तिमान पुरुषोत्तम, हे राम सर्व दुखोंहरम् ,  
त्वमासि नयनकमल विशालकुंज, हे कंसरावण मर्देनम् ।  
नटबेश्वरम् सर्वेश्वरं, त्वम् पादपंकज अतिमनोहरम् ,  
रणचोड कृष्ण विष्णेश्वरं, मुरलीमनोहर जगतगुरे ।  
अर्पित त्वम दयाद्रिष्टि, शिवांशस्य नाथम्,  
नमामि त्वम् केशवम्, मम् बुद्धितारणहारकम् ।  
प्रभु त्राहिमाम्, प्रभु त्राहिमाम्, प्रभु त्राहिमाम् ॥

Shivansh K. Shukla  
F. Y. B.Sc.

गुरुदेव पावन चरण मे निर्मल हो मेरी भावना,  
संसार को, इस जगत को, विकसित करे यह धारणा ।  
मन मे यही विश्वास है जब तक ये चालित श्वास है,  
गुरुवर तुम्हारी दया द्रष्टि खास है, कुछ खास है ।  
बन जाऊँ सूरज हो प्रकाशित, तिमिरमय है ये जीवन,  
आशिर्वचन दो है प्रभु, बंदा तुम्हारी है शरण ।  
यदि आप है तो सफल है गुरुवर हमारा ये जनम,  
दीर्घायु चलित हो प्रकाशित आपकी जो है शरण ।  
साथ वही इस जगत मे, जो है गुरु की शरण मे  
भूले है, भटके है, जो नहीं गुरुवर तम्हारे शरण मे ।  
हूँ रुक नाविक भँवर मे फँसता गया मैं क्या करुं,  
गुरुवर प्रभु महान हो तुम्हारी बडाई क्या करुं ।  
विद्या भी हो, और शक्ति भी तुम हीं जगत के सार हो,  
सिद्धार्थ कर दो है प्रभु, कितना भी चाहे भार हो ।  
नायक तुम्ही हो जगत के विद्या जरा सा दान दो,  
अच्छी हो नीयत सदैव ही, गुरुवर जरा सा ध्यान दो ॥

Shivansh K. Shukla  
F. Y. B.Sc.

## मेरा शिक्षक

जीवन में जो राह दिखाए  
सही तरह चलना रिखाए ।  
माता-पिता से भी पहले आता,  
जीवन में सदा आदर पाता ।  
सबको मान प्रतिष्ठा जिससे,  
सीखी कर्तव्यनिष्ठा जिससे ।  
कभी रही न दूर मैं जिससे,  
वह मेरा पथदर्शक हैं जो ।  
मेरे मन को भाता, वह मेरा शिक्षक कहलाता ।  
कभी है शांत, कभी है धीर,  
स्वभाव में सदा गंभीर,  
मन मैं दबी रहे थे इच्छा  
काश मैं उस जैसा बन पाती,  
जो मेरा शिक्षक कहलाता ।

Shruti B. Patel  
S.Y. B.Sc. (Physics)



## बचपन

एक बचपन का जमाना था,  
जिसमें खुशीयो का खजाना था,  
चाहत चाँद को पाने की थी,  
पर दिल तितली का दिवाना था,  
खबर ना थी कुछ सुबहा की  
ना शाम का ठिकाना था,  
चक्कर आना स्कूल से,  
पर खेलने भी जाना था,  
माँ की कहानी थी,  
परीओ का कसाना था,  
हाथ में कागज की नाव थी,  
हरमोसम सुहाना था,  
रोने की वजह ना थी,  
ना हसने का बहाना था  
क्यो हो गई हम ईतनी बडे  
ईससे अच्छा तो बचपन का  
जमाना था,  
वो बचपन का जमाना था

Anjali Joshi  
S. Y. B.Sc. (Zoology)

## मेरा स्वर्ग

मेरे लिये दुनिया दो हिस्सो में बाँटी है  
एक जिसमें मां रहती हूँ  
और दूसरी जो मुझमें रहती है  
दोनो के अलग अलग कानून है  
एक मुझे जकडने की कोशिश करता है  
तो दूसरा चाहता है विस्तार  
इन दोनों विश्वों की सीमा पर बैठी मैं  
चुप रहकर इनका युद्ध देखती हूँ  
तुम्हे इस जंग का हिस्सा बनाने से  
डरती तो हूँ  
लेकिन तुम्हारे बिना,  
यह युद्ध ही औचित्य - हीन हो जायेगा  
अजीब सी बात है ।  
युद्ध का कारण हथियार, उदेश्य  
सब एक ही हैं ।  
तुम्हारे बिना दोनों की जीत निरर्थक है  
और तुम्हारे साथ तो  
हार भी सार्थक होगी  
मेरे लिये दुनिया दो हिस्सों में बडी है  
और तुम जहाँ होते हो  
उस मैं स्वर्ग कहती हूँ ।

Maulika D. Andariya  
F. Y. B.Sc.

## वो बचपन का ...

वो बचपन का जमाना था,  
जिसमे खुशियों का रुजाना था ।  
चाहत चाँद को पाने की थी  
पर दिल तितली का दिवाना था ।  
खबर ना थी कुछ सबह की  
ना शाम का ठिकाना था ।  
थककर आना स्कूल से  
पर खेलने भी जाना था ।  
माँ की कहानी थी,  
परियो का अफसाना था ।  
बारिश मे कागज की नाँव थी,  
हर मौसम सुहाना था ।  
हर खेल मे साथी थे,  
हर रिश्ता निभाना था ।  
गम को जुबान ना होती थी,  
ना जख्मो का पैगाना था ।  
रोने की वजह ना थी,  
ना हसने का बहाना था ।  
क्यो हो गये इतने बडे यार हम ?  
इससे तो अच्छा....  
वो बचपन का जमाना था ।

"MY BETU"  
Dr. J. P. Patel



## सफर

निकले हम सफर मे  
कही नवाजा कही नकाला  
रुकने लगी थी जिवन की कडिया  
जिसका आवाज हमारे कानो मे था  
दिल बोलता था कही तु रुक न जाना  
लेकिन कापते पाँव ने कही साथ छोड दिया  
जैसे रास्ता भी खतम और मंजिल भी खतम  
दूर दूर अंधेरा था  
कही सहमा हुवा हमारा ठिकाना था  
ना आरजू, ना तमन्ना  
ना आशा, ना निराशा  
बस चल पडे थे किसी मंजील की और  
की शायद कही तो होगी हमारी रोशनी की किरण  
जिसे हम दिखाय देंगे .....

ना जिवन ने कुछ खोया था  
ना ऊसे कभी कुछ पाने की चाह थी  
जिंदगी को जहा बसेरा मिलता था  
वही अपना ठिकाना बना लेती थी  
जीवन क्षण भर के लिए जुडता था  
किस्मत भी बडी अजीब चीज है  
कुछ माँगोगे तो जिंदगी भर नही देगा  
और जो नही चाहोगे तो पल पल देगा ।

**Ekta Luhar**  
S.Y. Microbiology

## मेरी माँ

माँ तु सबसे अच्छी है  
हा, माँ तु ही सबसे अच्छी है ।  
तेरे जैसा देखा नहीं यहाँ पर  
तुजको ही पाती हूँ हर एक माँ में  
तुं नहीं होती है जब मेरे पास माँ,  
दिल रोता है तेरे बीना माँ ।  
किसीसे कह नहीं सकती, तु मेरे लिये  
क्या है, क्योंकि ये लोग हसते है मुझपे ॥  
सोचती हूँ मै तुझसे दूर जाऊँगी तो  
तेरे बिना कैसे जाऊँगी जींदगी माँ  
तेरे जैसा दुजा दोस्त मिला नहीं.  
मिले बहुत पर सबने धोखा दिया,  
एक तु ही है जिसने सच्चे  
दोस्त की तरह हमेशा मेरा साथ दिया  
और मुझे आगे बढाया ।  
मैं कभी तुझसे जुठ बोलुं और  
कभी कोई भुल हो जाए मुझसे  
अभी भी बच्चा समझकर माफ कर देना माँ ॥

**Priya D. Vyas**  
F.Y. Microbiology

# STUDENTS' CENTRAL COMMITTEE 2018-19

