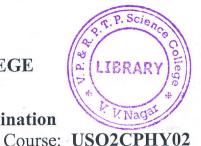
V.P. & R.P.T.P. SCIENCE COLLEGE VALLABH VIDYANAGAR



Second Semester B.Sc. Internal Examination

| Subj | ect: | Physics Course: USO2CPH | Y02 |
|--|------|---|--------|
| Title: Electronics, Nuclear and Modern Physics | | | |
| Date: | 11-0 | 3-2017, Saturday Time: 1:30pm to 2:30pm Total Man | rks:25 |
| Q1 | | Multiple Choice Questions (Each of One Mark) | (3) |
| | 1 | The bridge rectifier circuit uses diodes. (a) 2 (b) 4 (c) 1 (d) 3 | |
| | 2 | In a PNP transistor, base is made up of material. (a) P type (b) N type (c) metal (d) insulator. | |
| | 3 | The nuclear radius is proportional to power of mass number A (a) 1/2 (b) 2/3 (c) 1/3 (d) 3 | ١. |
| Q-2 | 100 | Answer any Two questions in short (Each of two Mark) | (4) |
| | 1 | Draw the circuit of a Half Wave Rectifier and label its components. | |
| | 2 3 | What are LEDs? State their applications. State any two types of nuclear transformation decay processes | with |
| | 3 | suitable example. | With |
| Q-3 | | What is a rectifier? Explain construction and working of a centre-tap rectifier circuit. OR | (6) |
| Q-3 | | What is a filter circuit? Why it is required? Explain action of choke input LC filter circuit. | (6) |
| Q-4 | | What is a zener diode? Draw its circuit symbol. Discuss its application in voltage regulator circuit. OR | (6) |
| Q-4 | | Draw the necessary circuit to determine characteristics of a PNP transistor in CE mode and explain its output characteristics. | (6) |
| Q-5 | | With proper illustration explain binding energy and binding energy per nucleon. Draw the curve for mass number against binding energy per nucleon and state any two features of it. OR | (6) |
| Q-5 | | Discuss Liquid Drop Model of a nucleus. | (6) |
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