

VITHALBHAI PATEL & RAJRATNA P.T. PATEL SCIENCE COLLEGE  
VALLABH VIDHYA NAGAR

S.Y. B.Sc. SEM: IV

INTERNAL TEST

DATE: 11<sup>th</sup> March 2014

SUB: INSTRUMENTATION (VOC.)

TIME: 1:00 pm to 2:30 pm

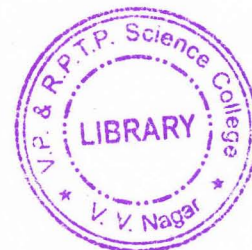
SUB CODE: US04CINV02

TOTAL MARKS: 30

Q.1 Answer the following in short.(Attempt Three, each two marks)

[06]

- (1) State Barkhausen criteria.
- (2) Give in detail just classification of oscillator.
- (3) Write difference between Led and laser.
- (4) Explain in short spontaneous emission and stimulated emission with figure.
- (5) Explain principle of fiber optics.
- (6) What are the basic requirements of LED?



Q.2 (A) Explain phase shift oscillator.

[04]

(B) Explain Wein bridge oscillator.

[04]

OR

Q.2 (A) Explain Astable multi vibrator in detail with block diagram of 555 timer ic.

[08]

Q.3 (A) Explain ruby laser.

[04]

(B) Explain laser cutting application.

[04]

OR

Q.3 (A) Explain edge emitting LED.

[04]

(B) Explain surface emitting LED.

[04]

Q.4 (A) Explain pin diode.

[05]

(B) Explain advantages of fiber optical cable.

[03]

OR

Q. 4 (A) Discuss fiber optics construction.

[05]

(B) Give comparisons of fiber optical cables and metal cables.

[03]

-: ALL THE BEST:-