

V P & R P T P Science College
Vallabh Vidyanagar – 388 120



First Internal Test

F Y B Sc [Semester-II]

Subject: Physics

US02CPHY02

Date: 14/03/2014 Friday

Time: 11.00 am to 12.00 pm

Total Marks-30

Q. 1 (attempt any three questions)

6

1. What is a rectifier? Why we need it?
2. Define: (i) ripple factor and (ii) rectification efficiency.
3. Explain how LED is different than ordinary diode.
4. Draw circuit diagram of CB configuration of PNP transistor.
5. What is alpha decay?
6. What is electron capture?

Q. 2

- a. Explain construction and working of a full wave centre tap rectifier and discuss its PIV. **4**
- b. Explain construction and filtering action of a LC filter. **4**

Or

- a. With necessary diagram explain V-I characteristics of a PN junction diode. **4**
- b. What is a bleeder resistor? Discuss its importance. **4**

Q. 3

- a. Write a note on varactor diode. **4**
- b. Draw basic amplifier circuit and discuss DC load line. **4**

Or

- a. Write a note on LED diode. **4**
- b. Derive the relationship between alpha and beta of a transistor. **4**

Q. 4. Discuss the binding energy with suitable example. **8**

Or

Q. 4. Discuss liquid-drop model in detail. **8**