V.P. & R.P.T.P. SCIENCE COLLEGE
VALLABH VIDYANAGAR
2nd SEMESTER B. Sc. INTERNAL EXAMINATION 2016

Subject: **Physics** Title: **Electronics, Nuclear & Modern Physics** Course: **USO2CPHY02**

Date: **17-03-2016** Thursday Time: **01: 30 pm to 02:30 pm** Marks: **25**

Q.1 **Answer the following MCQs with the correct option. Each of 1 Mark** (3)

(1) Which rectifier uses two diodes?
(a) half-wave (b) centre-tap (c) bridge (d) All of these.

(2) Which diode is used in rectifier circuits?
(a) zener (b) LED (c) power (d) varactor

(3) The ripple factor of a half wave rectifier circuit is ...
(a) 1.21 (b) 2.21 (c) 0.48 (d) 1.12

Q.2 **Answer any TWO of the following questions in short. Each of 2 Mark.** (4)

(1) What is a rectifier circuit? Why we need it?
(2) What are zener diodes? Draw its circuit symbol and state its application.
(3) Define ripple factor and rectification efficiency of a rectifier.

Q.3 (a) What is a half wave rectifier? Explain its construction and working. (5)
(b) Explain working of a shunt capacitor filter with necessary diagram. (4)

OR

Q.3 (a) Explain construction and working of a full wave Centre-Tap rectifier. Determine values of ripple factor and rectification efficiency of a full wave rectifier. (9)

Q.4 (a) What is a varactor diode? Write a note on it. (5)
(b) What are light emitting diodes (LEDs)? State their advantages and applications. (4)

OR

Q.4 (a) Draw the circuit to determine static characteristics of PNP transistor in CE mode. Discuss its input and output characteristics and their importance. (9)

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