



A Charutar Vidya Mandal's Institution
V.P. & R.P.T.P. SCIENCE COLLEGE
(AUTONOMOUS) (Grant-in-Aid)
Affiliated to Sardar Patel University
VALLABH VIDYANAGAR-388120



Bachelor of Science (Semester 2) External Examination - 2025
US02MIELEO3: ACTIVE Electronic Components

Date: 09-04-2025, (WEDNESDAY)

Time: 02:00 PM to 03:30 PM (1.50 HRS.)

Total marks: 25

NOTE: Figure to the write indicates the marks of the questions.

Q-1 Write the most appropriate answer from the following multiple-choice questions. [05]

- (1) The property of a material to convert electrical energy into light energy is called ____.
(a) Light emitting (b) Light reflecting
(c) electromechanical (d) Electron – Luminance
- (2) Solar cell converts light energy into electrical energy through the _____ effect.
(a) photoconductivity (b) Forward biasing
(c) Photovoltaic (d) Reverse biasing
- (3) The forward voltage at which the current starts increases is called _____ voltage of the diode
(a) Cut in (b) Breakdown
(c) Diffusion (d) depletion
- (4) The average or dc value of the output voltage in half wave rectifier is _____.
(a) V_m / π (b) $V_m / 2\pi$
(c) $2V_m / \pi$ (d) $V_m / 2$
- (5) In half wave rectifier, The ac output voltage is _____ dc output voltage.
(a) Equal to (b) More than
(c) Less than (d) None of above



Q-2 In brief write a note on PIN diode

[10]

OR

Q-2 Explain construction, working and modes of operation of photo diode.

[10]

Q-3 What is half wave rectifier? Derive an expression for its output dc voltage and PIV.

[10]

OR

Q-3 What is the function of filter circuit? Name various types of filter circuits. Explain construction and working of a Shunt capacitor filter in detail

[10]