



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
US02IDELE03 Semi-conductor Diodes and Power Supply

Date: 10-04-2025, (Thursday)

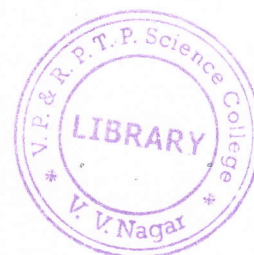
Time: 2:00 PM to 3:30 PM (1.5 Hrs.)

Total marks: 25

NOTE: - Figures on the right indicates marks.

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

- (1) Which of following is used to convert high ac voltage to low ac voltage?
(A) Rectifier. (B) Filter.
(C) Capacitor. (D) Transformer.
- (2) The voltage drop of a forward biased Germanium diode is ____
(A) 0.3 (B) 0.5
(C) 0.7 (D) 1.0
- (3) How much is the PIV of diode in center tap rectifier?
(A) V_m (B) $2V_m$
(C) $3V_m$ (D) $4V_m$
- (4) The junction capacitance of a p-n junction diode is ____ proportional to the width of the depletion layer.
(A) Inversely. (B) Directly.
(C) Square of. (D) Square root.
- (5) What is the name of the region containing the uncompensated acceptor and donor ions?
(A) Diffusion. (B) Barrier.
(C) Intrinsic. (D) Depletion.



Q.2 Why we need Filter circuit? Explain function of shunt capacitor filter with necessary diagrams. [10]

OR

Q.2 Explain construction and working of a bridge type full wave rectifier and discuss its PIV. [10]

Q.3 With necessary circuit diagram explain forward and reverse VI characteristic of PN junction diode [10]

OR

Q.3 Explain construction and working of photo diode. Also explain different mode of its operation. [10]