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SEM – 2-5 (RC 07-08)

F.E. (Sem. – II) (Revised in 2007-08) Examination, May/June 2008
BASIC ELECTRONIC ENGINEERING

Duration : 3 Hours Max. Marks : 100

Instructions : *1) Attempt **five** questions, choosing at least **one** from **each** Module.*
*2) Assume any additional data, if **necessary**.*
*3) Graph papers will be provided on **request**.*

MODULE – I

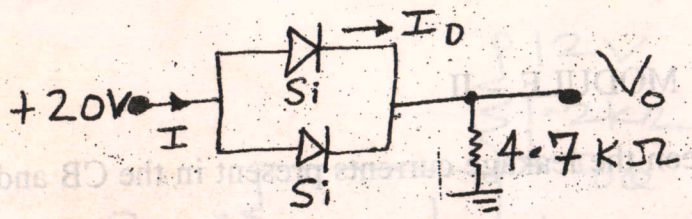
1. a) What is a diode and how is the depletion region formed ? 4

b) Define Knee Voltage, Reverse Saturation Current, Peak Inverse Voltage and Reverse Breakdown Voltage for a diode. 4

c) Differentiate between Zener and Avalanche breakdowns. 6

d) With the help of diode circuit and necessary equations, explain how the Q-point is determined. 3

e) Determine I, V_0 and I_D for the given network. 3



2. a) A bridge rectifier uses load resistor $R_L = 2K\Omega$. Each diode has ideal characteristics with slope resistance $R_f = 10\Omega$. (Cut-in voltage is assumed to be zero). Input voltage V_i in each half cycle has amplitude of 20 volts and frequency is 50 Hz. Calculate :

i) Peak, dc and rms values of load current

ii) DC output voltage and dc output power

iii) TuF. 6

P.T.O.