BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(MID SEMESTER EXAMINATION)

CLASS: BTECH   SEMESTER: V
BRANCH: EEE   SESSION: MO/2022

SUBJECT: EE357 ELECTRONIC DEVICES AND ANALOG CIRCUITS

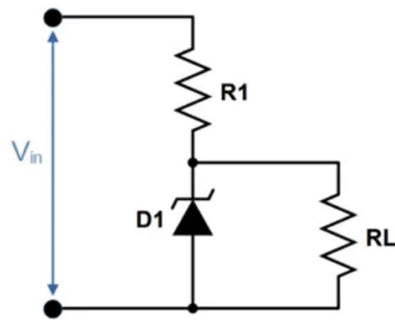TIME: 2 HOURS   FULL MARKS: 25

INSTRUCTIONS:
1. The total marks of the questions are 25.
2. Candidates attempt for all 25 marks.
3. Before attempting the question paper, be sure that you have got the correct question paper.
4. The missing data, if any, may be assumed suitably.
5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.

				CO	BL
Q1	(a)	What is diffusion capacitance?	[2]	CO1,CO2	L1
Q1	(b)	Prove that transition capacitance $C_T = \varepsilon A/W$	[3]	CO1,CO2	L2
Q2	(a)	Find out the ripple factor of half wave rectifier.	[2]	CO1,CO2	L2
Q2	(b)		[3]	CO1,CO2	L3

Given that: R1-220 ohm, V_Z=20V, I_{ZM}=60mA, R_L=1.2kohm, Find the range of Vin.

Q3	(a)	What are the advantages and disadvantages of LED.	[2]	CO1,CO2	L2
Q3	(b)	In a half wave rectifier diode resistance= 10 ohm load resistance= 100ohm, secondary of transformer supply 50V(rms). Find (a) the peak current (b) the total input ac power (c) the DC voltage.	[3]	CO1,CO2	L3
Q4	(a)	What are the different modes of BJT.	[2]	CO1,CO2	L2
Q4	(b)	Draw the input and output characteristics of CE configuration, also explain in brief.	[3]	CO1,CO2	L2
Q5	(a)	Draw the transductance curve of a JFET, also write the current equation Id.	[2]	CO1,CO2	L2
Q5	(b)	What is IGBT? Explain its characteristics.	[3]	CO1,CO2	L2

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