Question Paper Code: R18A22EE01

R18

ANURAG Engineering College

(An Autonomous Institution)

II B.Tech II Semester Supplementary Examinations, June/July-2024

BASIC ELECTRICAL & ELECTRONICS ENGINEERING

(CIVIL ENGINEERING)

Time: 3 Hours **Max. Marks: 75**

Section – A (Short Answer type questions) (25 Marks)

Answer All Questions

		Course Outcome	B.T Level	Marks
1.	State the ohm's law.	CO1	L1	2M
2.	Define resistance. What is V-I relation of resistance?	CO1	L1	3M
3.	What is meant by Dynamically induced emf.	CO2	L2	2M
4.	What are the various losses in a DC motor.	CO2	L2	3M
5.	What is the purpose of using core in a transformer?	CO3	L2	2M
6.	What are the different losses in a 3 –phase induction machine?	CO3	L2	3M
7.	Distinguish between PNP and NPN transistor.	CO4	L1	2M
8.	Give the detailed construction of Bridge rectifier.	CO4	L1	3M
9.	State the magnetic deflection.	CO5	L2	2M
10.	What are the various components of CRT?	CO5	L2	3M

Section B (Essay Questions)

Answer all questions, each question carries equal marks. **(5 X 10M = 50M)**

11. A)	i) Give the detailed classification of independent sources.	CO1	L3	5M
	ii)For the circuit in Fig.1, find voltages V1 and V2.			5M

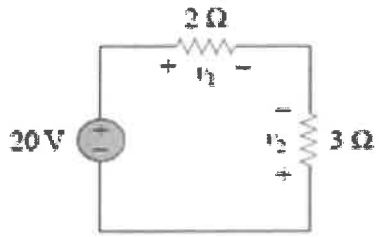

Fig.1.

OR **OR**

B)	Obtain the node voltages 1 &2 in the circuit in Fig.2	CO1	L3	10M

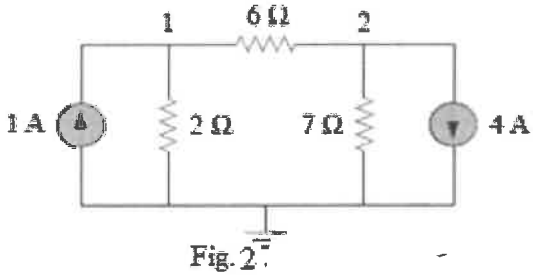

Fig. 2

12. A)	i)Derive an expression for EMF equation of a DC generator.	CO2	L3	5M
	ii)List various losses in DC generator.			5M
	OR			**OR**
B)	i)Write the torque equation of DC motor and explain	CO2	L3	5M
	ii)Explain different characteristics of DC shunt motor.			5M

13. A)	A 25 kVA , 2200/220 V, 50 Hz single phase transformer obtained the following test results, OC test (L.V side) = 220V, 12 A, 100 w SC test(H.V Side) = 100V, 7A, 310 w Calculate the parameters of the equivalent circuit of transformer referred to L.V side and draw the equivalent circuit.	CO3	L3	10M
	OR			**OR**
B)	i)Explain torque- slip characteristics of three phase induction motor. ii)Discuss various losses in three phase induction motor.	CO3	L3	5M 5M
14. A)	Draw the circuit diagram of a full bridge rectifier circuit and calculate i) I_{dc} ii) I_{rms} iii) ripple factor.	CO4	L3	10M
	OR			**OR**
B)	i)Sketch typical CB input characteristics curve for an NPN transistor. ii)How would you calculate the input dynamic resistance of the transistor?	CO4	L3	5M 5M
15. A)	i)Explain the block diagram of CRT. ii) Write short notes on Sensitivity and Deflection.	CO5	L3	5M 5M
	OR			**OR**
B)	i)Derive the expression for magnetic deflection sensitivity of CRO. ii)Discuss how current and frequency are measured with CRO.	CO5	L3	5M 5M