R22 Regulation *Subject code: 4E1AC*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

(Autonomous, Accredited by NAAC with 'A+' Grade)

B.Tech I Semester Supplementary Examinations, June 2024

Basic Electrical and Electronics Engineering

(Civil Engineering)

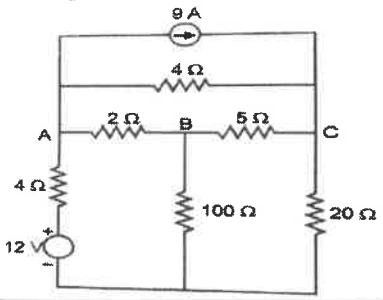
Maximum Marks: 60 Date:03.07.2024 Duration: 3 hours

Note: **1.This question paper contains two parts A and B.**
2. Part A is compulsory which carries 10 marks. Answer all questions in Part A.
3. Part B consists of 5 Units. Answer any one full question from each unit.
4. Each question carries 10 marks and may have a, b, c, d as sub questions.

Part-A

All the following questions carry equal marks (10X1M=10 Marks)			CO No.	Bloom Tx
1.	a	State Ohm's law and its limitations.	CO1	I
	b	Define power factor.	CO1	I
	c	What are the types of cables?	CO2	I
	d	List the reasons for earthing.	CO2	II
	e	Give some applications of DC generator.	CO3	I
	f	Distinguish between induction motor and synchronous motor.	CO3	III
	g	Compare Zener and avalanche breakdown.	CO4	II
	h	Define rectifier efficiency.	CO4	I
	i	List out the difference between BJT and FET	CO5	II
	j	Give the applications of FET.	CO5	I

Part-B

Answer All the following questions. (5X10M=50Marks)				
2		Use Nodal Analysis to determine the voltage across 5 ohm resistor and current in 12 V source. [10M] 	CO1	IV
		OR		
3		Three 80 Ω resistors are connected first in star and then in delta across 410 V, 3-phase supply. Calculate the line and phase currents in each case and also the power taken from source. [10M]	CO1	IV

4	Describe in detail about ELCB and MCCB with neat diagrams. [10M]	CO2	II
	OR		
5	Give a detailed account of the characteristics that must be taken into consideration while selecting a battery. [10M]	CO2	III
6	Explain the working principle of three phase induction motor with neat circuit diagram. [10M]	CO3	II
	OR		
7	Describe the principle of single-phase transformer and develop an equivalent circuit from the tests. [10M]	CO3	II
8	Discuss the working of bridge rectifier and derive its ripple factor. [10M]	CO4	III
	OR		
9	Explain the working principle of PN junction Diode in detail. Add a note on its applications. [10M]	CO4	II
10	Describe the operation of BJT in common emitter mode along with its characteristics. [10M]	CO5	II
	OR		
11	Discuss your understanding on construction, operation and characteristics of N Channel JFET. [10M]	CO5	III