R22 Regulation *Subject code: 4E1AC*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech I Semester Regular/Supplementary Examinations, January 2024

Basic Electrical and Electronics Engineering

(Civil Engineering)

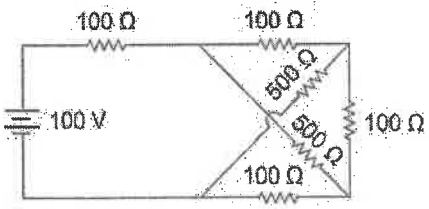
Maximum Marks: 60 Date:24.01.2024 Duration: 3 hours

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	List the uses of a capacitor.	CO1	I
	b	Define apparent power and reactive power.	CO1	I
	c	Mention two common materials used for wires.	CO2	II
	d	Enlist the difference between MCB and MCCB.	CO2	III
	e	Give some applications of DC motor.	CO3	I
	f	Write the significance of back EMF.	CO3	II
	g	What is breakdown voltage in a Zener diode?	CO4	I
	h	Define ripple factor.	CO4	I
	i	What are the types of FET?	CO5	I
	j	Give the consequences of 'Early Effect' in CB configuration.	CO5	III

Part-B

		Answer All the following questions. **(5X10M=50Marks)**		
2		A. Give the differences between AC and DC Circuit. (5) B. State and explain Kirchoff's laws. (5)	CO1	II
		OR		
3		A. Determine the equivalent resistance for the network shown below. (6)  B. List the differences between Star and Delta Connection. (4)	CO1	IV
4		Discuss the primary cell and secondary cell with special reference to reactions at anode and cathode. (10)	CO2	IV
		OR		
5		Describe in detail about ELCB and MCB with neat diagrams. (10)	CO2	II

6	With a neat diagram, discuss the principle of operation of DC Generator also derive the EMF equation of DC Generator. (10)	CO3	II
	OR		
7	Give an account of the different Speed Control Methods of DC Motor. (10)	CO3	III
8	Explain the construction, principle of operation and VI characteristics of Diode in detail with neat diagrams. (10)	CO4	III
	OR		
9	With neat circuit diagram and waveform, Elucidate the working principle of half wave and full wave rectifier. (10)	CO4	III
10	Describe the operation of BJT in common collector mode with its characteristics. (10)	CO5	II
	OR		
11	Explain in detail about FET V-I characteristics with neat diagram. (10)	CO5	II