Course Code: 2030202 Roll No: **MLRS- R20**

MARRI LAXMAN REDDY
INSTITUTE OF TECHNOLOGY AND MANAGEMENT
(AN AUTONOMOUS INSTITUTION)
(Approved by AICTE, New Delhi & Affiliated to JNTUH, Hyderabad)
Accredited by NBA and NAAC with 'A' Grade & Recognized Under Section2(f) & 12(B)of the UGC act,1956

II B.Tech I Sem Supply End Examination, July-2022

Basic Electrical and Electronics Engineering

(CIVIL, MECH)

Time: 3 Hours. **Max. Marks: 70**

Note: 1. Question paper consists: Part-A and Part-B.
2. In Part – A, answer all questions which carries 20 marks.
3. In Part – B, answer any one question from each unit.
Each question carries 10 marks and may have a, b as sub questions.

PART- A

(10*2 Marks = 20 Marks)

1.	a)	State KVL.	2M	CO1	BL1
	b)	Define reactive power.	2M	CO1	BL1
	c)	What is the function of switch fuse unit (SFU)?	2M	CO2	BL1
	d)	State different types of wires used in houses.	2M	CO2	BL1
	e)	Define efficiency of a transformer.	2M	CO3	BL1
	f)	State the different parts of a d.c motor.	2M	CO3	BL1
	g)	Give the applications of a Zener Diode.	2M	CO4	BL1
	h)	What is the need for a filter?	2M	CO4	BL1
	i)	Draw the circuit diagram of CC configuration of BJT.	2M	CO5	BL1
	j)	What is the difference between BJT and FET in any two aspects?	2M	CO5	BL1

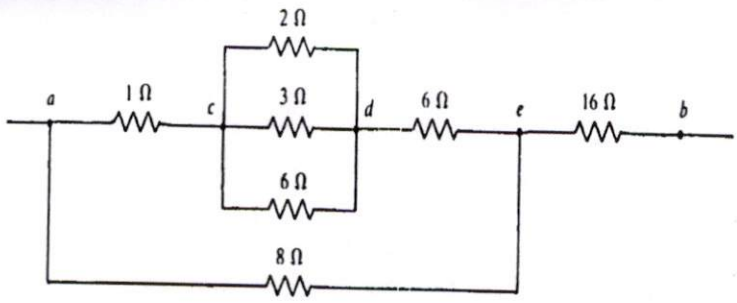
PART- B

(10*5 Marks = 50 Marks)

2	a)	Explain various voltage and current sources.	5M	CO1	BL4
	b)	Explain the following: (i) R.M.S. value (ii) Average value and (iii) Form Factor of a sinusoidal quantity.	5M	CO1	BL4

OR

3		Find the equivalent resistance across the terminals of 'a' and 'b' of the circuit shown below. Also, calculate the total current and each current flowing through each resistance, if 230V battery is connected across the terminals "a" and "b".	10M	CO1	BL3



4	a)	What is the need for power factor improvement? Explain.	5M	CO2	BL4
	b)	State various types of earthing methods. Explain any one of them.	5M	CO2	BL4
		OR			
5		Explain the working principle of MCCB with a neat sketch.	10M	CO2	BL4
6	a)	Derive the e.m.f equation of a single phase transformer.	5M	CO3	BL6
	b)	Explain the speed control methods of D.C motor.	5M	CO3	BL4
		OR			
7		Explain the construction and working principle of 3-phase Induction motor.	10M	CO3	BL4
8	a)	Draw and explain Volt-ampere characteristics of P-N junction diode.	5M	CO4	BL4
	b)	Draw the equivalent circuit of a PN junction diode.	5M	CO4	BL1
		OR			
9		Draw the circuit diagram of a full-wave bridge rectifier circuit. Explain its working with waveforms.	10M	CO4	BL4
10	a)	What is biasing of a transistor? Explain.	5M	CO5	BL4
	b)	Compare CB, CC and CE configurations of a BJT.	5M	CO5	BL2
		OR			
11		Draw the typical CE configuration of an NPN transistor. Label all variables. Also, explain its working.	10M	CO5	BL4

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