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

MLRS

I B.Tech II Sem Supply End Examination, March 2022
Basic Electrical Engineering
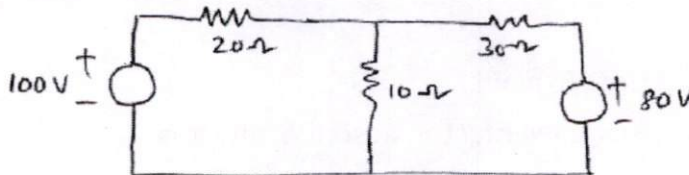### (EEE)

Time: 3 Hours.   **Max. Marks: 70**
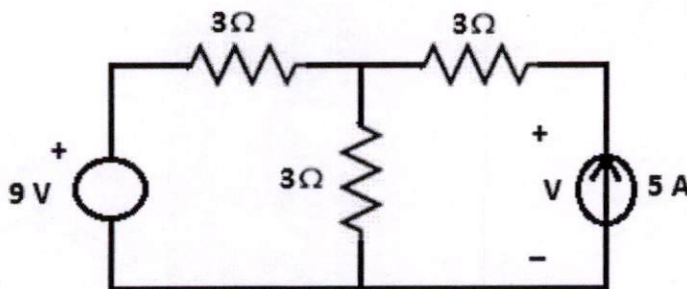
Note: 1. Answer any FIVE questions.
     2. Each question carries 14 marks and may have a, b as sub questions.

1	a)	Explain the Kirchoff's current and voltage laws.	7M	CO1 BL2
	b)	Find the current in the 10Ω resistance of the following circuit shown in figure.	7M	CO1 BL3

2	a)	State and explain superposition theorem with an example.	7M	CO1 BL2
	b)	In the circuit shown in figure , determine 'V' using Thevenin's theorem	7M	CO1 BL3

3	a)	Define the following terms:	7M	CO2 BL1

i) Frequency

ii) Peak factor

iii) Form factor

iv) Average value of an alternating quantity.

	b)	Describe phasor representation of RL,RC series circuits?	7M	CO2 BL2
4	a)	Derive the relation between line and phase quantities of voltage and current for a delta system.	7M	CO2 BL3
	b)	With the help of diagram explain the principle of operation of transformer.	7M	CO3 BL2

5	a)	Define and explain efficiency and regulation of a transformer.	7M	CO3 BL2
	b)	Discuss the various three phase transformer connections with diagrams.	7M	CO3 BL2
6	a)	Explain the principle of production of rotating magnetic field in a 3-phase induction Motor.	7M	CO4 BL2
	b)	Analyze the torque -slip characteristics vary with the variation in input voltage of induction motor?	7M	CO4 BL3
7	a)	Explain the working principle of synchronous generator.	7M	CO4 BL2
	b)	Calculate total energy consumed per day by the use of following loads:	7M	CO5 BL3

i) 5 number of 40 W lights operated 5 hours per day
ii) 1 h.p. motor is operated 2 hours per day
iii) 1 k.W heater is operated 1 hour per day
iv) 1 computer 150W is used for 6 hours per day with printer about 30 minutes.

8	a)	What are the types of batteries? Explain.	7M	CO5 BL2
	b)	What are the drawbacks of low power factor, describe how it is improved?	7M	CO5 BL2

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