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SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)

B.Tech I Year I Semester Regular Examinations February-2024

BASIC ELECTRICAL & ELECTRONICS ENGINEERING
(Common to EEE & CSIT)

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

PART-A (ELECTRICAL)
(Answer all the Questions **5 x 1 = 5** Marks)

1	a	State Kirchoff's laws.	CO1	L1	1M
	b	Write any three applications of a DC Motor.	CO2	L1	1M
	c	What are the Conventional Energy sources?	CO3	L1	1M
	d	What is the power rating of Air Conditioner and Fan?	CO3	L1	1M
	e	Define unit of Electrical Energy.	CO3	L1	1M

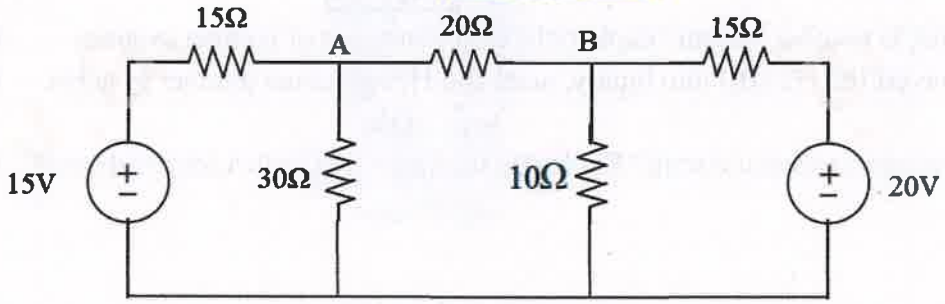
(Answer all Three Units 3 x 10 = 30 Marks) **(ELECTRICAL)**

UNIT-I

2	a	Determine the Equivalent Capacitance when the Capacitors are connected in Series & Parallel.	CO2	L3	5M
	b	Explain about the Energy Sources.	CO4	L2	5M

OR

3	a	State the Super position theorem and explain with an example in detail.	CO2	L3	4M
	b	Determine the current in a branch A-B by using Superposition theorem.	CO2	L3	6M



UNIT-II

4		Draw and explain the construction features of a dc machine.	CO2	L4	10M

OR

5		Explain construction and operating principle of Permanent Magnet Moving Coil (PMMC) instruments.	CO2	L2	10M

UNIT-III

6		Explain Layout and operation of Wind power generating station.	CO3	L2	10M

OR

7	a	What are the working principles of fuse and MCB?	CO1	L1	4M
	b	What is an electric shock? How to prevent electric shock at home?	CO4	L1	6M

PART-B (ELECTRONICS)

(Answer all the Questions **5 x 1 = 5** Marks)

1	**f**	What is meant by semiconductor?	**CO1**	**L1**	**1M**
	g	How PN diode is formed?	**CO1**	**L1**	**1M**
	h	Define amplifier.	**CO2**	**L4**	**1M**
	i	What is the function of a transducer?	**CO2**	**L1**	**1M**
	j	Write the names of basic logical operators.	**CO4**	**L3**	**1M**

(Answer all Three Units 3 x 10 = 30 Marks) **(ELECTRONICS)**

UNIT-IV

8		With a neat sketch Explain the input and output and current gain characteristics of a transistor in common base (CB) configuration.	**CO2**	**L1**	**10M**

OR

9		Explain the operation of pn junction diode under forward bias and reverse bias conditions with the help of V-I characteristics curve.	**CO1**	**L5**	**10M**

UNIT-V

10		Explain the working of a full wave bridge rectifier with a neat diagram with wave forms.	**CO2**	**L1**	**10M**

OR

11		What is a Voltage Regulator? How the Zener Diode works as a Voltage Regulator?	**CO2**	**L1**	**10M**

UNIT-VI

12	**a**	What is number system? explain the different types of number systems	**CO3**	**L2**	**5M**
	b	Convert the (555)10 into binary, octal and Hexadecimal number systems.	**CO3**	**L1**	**5M**

OR

13		Define combinational circuit? Explain Half Adder and Full Adder with truth table.	**CO3**	**L2**	**10M**

***** END *****