Course Code:23ES2T01

BONAM VENKATA CHALAMAYYA INSTITUTE OF TECHNOLOGY & SCIENCE

(AUTONOMOUS)

I - B. Tech II-Semester Supplementary Examinations (BR23), Sep/Oct - 2024

BASIC ELECTRICAL AND ELECTRONICS ENGINEERING (CSE.CSE-AI&DS, AI&ML)

Time: 3 hours Max. Marks: 70

Question Paper consists of Part-A and Part-B

*Answer **ALL** the question in **Part-A and Part-B***

PART–A (1 X 5 = 5M)

		Marks	CO	BL
1. a)	State the limitations of superposition theorem?	(1M)	1	1
b)	A single ac waveform has an rms value of 230 V and 50 HZ frequency? Draw the waveform indicating peak value and time period?	(1M)	2	2
c)	Write few applications of AC machines	(1M)	2	2
d)	What is voltage and frequency of 1-phase supply in India?	(1M)	3	1
e)	Write the function of fuse	(1M)	3	2

(10 X 3 = 30M)

2.a)	Write down the expression for active and apparent power?	10(M)	1	3
	(OR)			
b)	Derive the expression RMS value of sinusoidal wave form $v(t) = V_m \sin\omega t$.	10(M)	3	3
3.a)	Explain the working principle of three phase induction generator?	10(M)	2	3
	(OR)			
b)	Illustrate the principle of working of a PMMC instrument with neat diagram.	10(M)	2	3
4.a)	Explain the operation of solar power generation	10(M)	3	3
	(OR)			
b)	Sketch and explain Pipe Earthing	10(M)	4	3

PART–B (1 X 5 = 5M)

		Marks	CO	BL
1. a)	What is the application of Zener diode?	(1M)	1	1
b)	Name the different configurations of transistor?	(1M)	1	1
c)	Draw the block diagram of electronic commutation?	(1M)	2	1
d)	Name the universal gates?	(1M)	3	1
e)	Write the difference between sequential and combinational circuit?	(1M)	3	1

(10 X 3 = 30M)

2.a)	Compare PN junction diode and Zener diode and list the applications of Zener diode.	10(M)	1	3
	(OR)			
b)	Draw and explain the input and output characteristics of a transistor in CE configuration	10(M)	1	3
3.a)	Illustrate the operation of full wave rectifier with neat sketch.	10(M)	2	3
	(OR)			
b)	Draw the block diagram of an electronic instrumentation system and explain its working	10(M)	2	3
4.a)	Convert the following number system into indicated system. i) $(256)_{10}$ = $(\ldots\ldots\ldots)_2$ ii) $(F32C)_{16}$ = $(\ldots\ldots)_{10}$	10(M)	3	3
	(OR)			
b)	Explain the principle of JK flip flop with the help of a block diagram and truth table	10(M)	3	3

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