Course Code: 23ES1T01

BONAM VENKATA CHALAMAYYA INSTITUTE OF TECHNOLOGY & SCIENCE

(AUTONOMOUS)

I - B. Tech I-Semester Regular/Supplementary Examinations (BR23), January - 2026

BASIC ELECTRICAL AND ELECTRONICS ENGINEERING (CE, EEE, ECE)

Time: 3 hours Max. Marks: 70

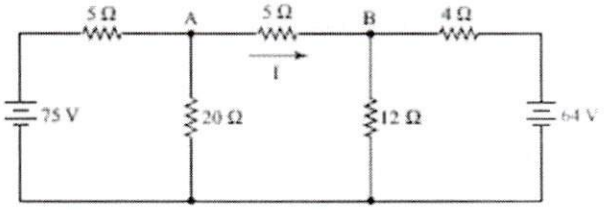
Question Paper consists of Part-A and Part-B
*Answer **ALL** the question in **Part-A and Part-B***

PART–A (1 X 5 = 5M)

		Marks	CO	BL
1. a)	What is the statement of Kirchoff's voltage law	(1M)	CO1	L1
b)	What is average value of sinusoidal signal with peak voltage 50V	(1M)	CO1	L1
c)	List out various types of transformers	(1M)	CO2	L2
d)	Moving coil instruments have linear scale. Justify this statement	(1M)	CO2	L3
e)	A lamp with 100W capacity is in on state for two hours. What is total energy consumed in units	(1M)	CO3	L3

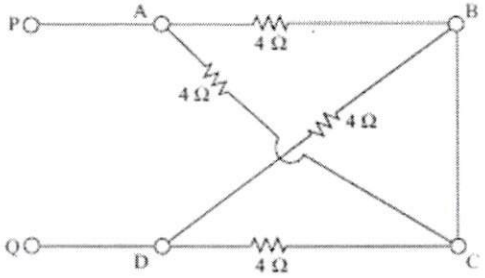
(10 X 3 = 30M)

2.a)	Calculate the current, I using the superposition theorem	10(M)	CO1	L3



(OR)

b)	Calculate the resistance between the terminals P and Q of the network shown	10(M)	CO1	L3



3.a)	Explain the principal of operation of Alternator with neat diagram	10(M)	CO2	L2

(OR)

b)	Discuss the principal of operation of permanent magnetic moving coil instruments	10(M)	CO2	L2
4.a)	Draw the layout and explain the operation of Hydro power plant	10(M)	CO3	L2

(OR)

b)	Explain working principal of Fuse and MCB with sketch	10(M)	CO3	L2

PART–B (1 X 5 = 5M)

		Marks	CO	BL
1. a)	Draw bipolar junction transistor symbol.	(1M)	CO4	L2
b)	Explain break down voltage in PN junction diode	(1M)	CO4	L2
c)	Draw full wave rectifier circuit	(1M)	CO5	L5
d)	What is the truth table of OR gate	(1M)	CO6	L1
e)	What is binary number representation of 100	(1M)	CO6	L1

(10 X 3 = 30M)

2.a)	Discuss PN junction diode VI characteristics with neat diagram	10(M)	CO4	L2
	(OR)			
b)	Explain common emitter configuration of transistor with required diagrams	10(M)	CO4	L2
3.a)	Discuss on process of conversion operation in half wave rectifier with capacitive filter	10(M)	CO5	L2
	(OR)			
b)	Explain working principal of simple Zener voltage regulator with neat sketch	10(M)	CO5	L2
4.a)	Discuss full adder circuit with a neat sketch	10(M)	CO6	L2
	(OR)			
b)	Discuss about below GATES with neat sketch and truth Table • NAND • XOR • XNOR • NOR	10(M)	CO6	L2

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