H.T.No: | | | | | | | | | | | Course Code: **241EE001**

ADITYA UNIVERSITY

B.Tech – I Semester End Examinations Supplementary – Mar 2026

BASIC ELECTRICAL AND ELECTRONICS ENGINEERING
(Common to CE, ME, ECE, CSE & Min.E)

Time: 3 hours **Max. Marks: 100**

Answer ONE question from each unit
All Questions Carry Equal Marks
All parts of the questions must be answered at one place only

UNIT-I

1	a	Explain kirchoffs laws with examples	L2	CO1	[10M]
	b	Define ohms law and write it's limitations	L2	CO1	[10M]
		(OR)			
2	a	Explain the following terms i) Cycle ii) Amplitude iii) Time period iv) Frequency v) Instantaneous value vi) Peak to peak value	L2	CO1	[10M]
	b	Explain the series and parallel connection of resistance with neat diagram and derive the equivalent resistance	L3	CO1	[10M]

UNIT-II

3	a	Explain the operation of DC motor with neat diagram.	L2	CO2	[10M]
	b	Explain the operation of transformer with neat diagram.	L2	CO2	[10M]
		(OR)			
4	a	Explain the working of Megger with neat diagram	L2	CO2	[10M]
	b	Explain the construction and working of repulsion type moving iron instrument.	L2	CO2	[10M]

UNIT-III

5	a	Explain the differences between conventional and non-conventional energy resources.	L2	CO3	[10M]
	b	Describe the layout and working principles of hydel power station	L2	CO3	[10M]
		(OR)			
6	a	Explain how electrical energy consumption is calculated for domestic appliances.	L2	CO3	[10M]
	b	Explain the causes and effects of electric shock and safety precautions	L2	CO3	[10M]

UNIT-IV

7	a	Explain the operation of zener diode and draw V-I characteristics with neat circuit diagram.	L2	CO4	[10M]
	b	Explain the operation of P-N junction diode and draw V-I characteristics.	L2	CO4	[10M]
		(OR)			
8	a	Explain common base mode of transistor & draw input, output characteristics.	L2	CO4	[10M]
	b	Compare the CB, CE, and CC configurations of a Bipolar Junction Transistor	L1	CO4	[10M]

(P.T.O)

UNIT-V

9	a	Explain the operation of bridge rectifier & draw the wave forms & derive the expression for output voltage & current.	L2	CO5	[10M]
	b	Explain the types of filters used in rectifier circuits	L2	CO5	[10M]
		(OR)			
10	a	Explain the basic logic gates with truth table	L2	CO5	[10M]
	b	Explain the concept and importance of coding systems such as BCD, Excess-3, Gray code, and Hamming code.	L2	CO5	[10M]

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