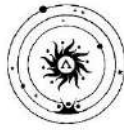


H.T.No: 

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CourseCode:241EE001



# ADITYA UNIVERSITY

B.Tech – I Semester End Examinations Regular (B.Tech2024)  
**BASIC ELECTRICAL AND ELECTRONICS ENGINEERING**  
(Common to CE, ME, ECE, CSE & Min.E)

**Time: 3 hours**

**Max. Marks: 50**

**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 State and Explain Ohm's Law and its limitations L1 CO1 [4M]  
b Define RMS value and derive the expression for the same of a  
sinsoidal alternating quantity L2 CO1 [6M]

**(OR)**

- 2 a State and Explain Kirchhoff's laws with examples L2 CO1 [5M]  
b Define Average value and derive the expression for the same of  
a sinsoidal alternating quantity L2 CO1 [5M]

## UNIT-II

- 3 a With a neat sketch explain working principle of DC motor. L2 CO2 [5M]  
b Explain the working principle of Megger with neat diagram L2 CO2 [5M]

**(OR)**

- 4 a With a neat sketch explain working principle of Induction motor L2 CO2 [5M]  
b Explain the Wheatstone Bridge with neat diagram L2 CO2 [5M]

## UNIT-III

- 5 a Draw and explain the schematic diagram of a Hydroelectric  
Power Plant L2 CO3 [6M]  
b Explain the working principle of Fuse with neat diagram L2 CO3 [4M]

**(OR)**

- 6 a Draw the neat schematic diagram of a Thermal Power Plant L2 CO3 [5M]  
b Explain the working principle of MCB with neat diagram L2 CO3 [5M]

## UNIT-IV

- 7 a What is PN Diode and explain its Characteristics with neat  
diagram. L2 CO4 [5M]  
b Explain CE configuration of BJT L2 CO4 [5M]

**(OR)**

- 8 a Explain the working of NPN transistor with neat diagram. L2 CO4 [5M]  
b Explain CC configuration of BJT L2 CO4 [5M]

**UNIT-V**

- 9 a Explain Full wave Rectifier with neat diagram L2 CO5 [6M]  
b Convert i)  $(3F4)_{16} = ( )_{10}$  L3 CO5 [4M]  
ii)  $(22)_{10} = ( )_2$   
iii)  $(56)_8 = ( )_{10}$   
iv)  $(1101)_2 = ( )_{10}$   
**(OR)**
- 10 a Explain DC regulated supply block diagram with neat sketch L2 CO5 [5M]  
b Explain Full adder circuit with the help of truth tables L2 CO5 [5M]

MODEL QUESTION PAPER