SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B Tech II Year II Semeste Supplementary Examinations May/June-2024
BASIC ELECTRICAL & ELECTRONICS ENGINEERING
(Mechanical Engineering)

Time: 3 Hours

Max. Marks: 60

(Answer all Six Units **6 X 10 = 60** Marks)

PART-A

UNIT-I

|				
1	Three resistances of values 20, 30 and 50 are connected in series across 20 V DC supply. Calculate, i) Equivalent resistance of the circuit. ii) Total current from the supply. iii) Voltage drop across each resistor. iv) Power dissipated in each resistor	CO1	L3	10M

OR

2	Find the current through 12Ω resistor for the given circuit using Kirchoff's laws.	CO1	L3	10M
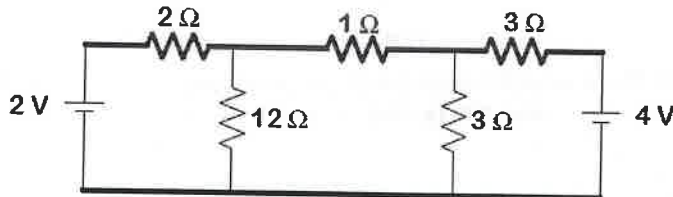
UNIT-II

3	Calculate the current in 20Ω resistor in the given circuit using super position theorem.	CO2	L3	10M
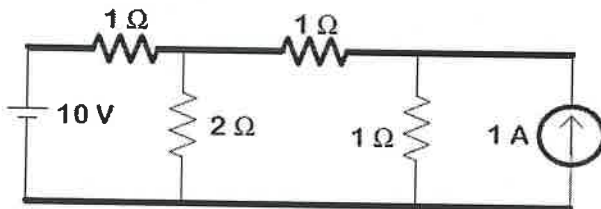
OR

4	Find Norton's equivalent circuit across AB for the circuit shown.	CO2	L3	10M
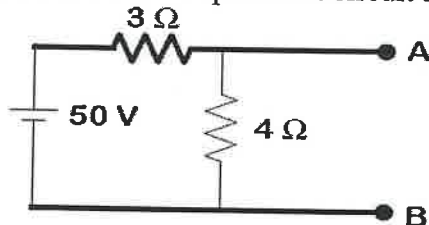
UNIT-III

5	Discuss about the principle of operation and constructional Details of DC motor.	CO3	L2	10M

OR

6	a	Derive EMF equation of a transformer	CO3	L3	5M
	b	A 100 kVA, 11000/400 V, 50 Hz transformer has 40 secondary turns. Calculate the number of primary turns and primary and secondary currents.	CO3	L3	5M

PART-B

UNIT-IV

7   Discuss the conduction properties of semiconductors and explain the process of electron hole Pair generation and recombination.   **CO4**   **L3**   **10M**

OR

8   Explain the working of a PN junction diode when it is connected in forward bias and reverse bias. Draw VI Characteristics of PN Junction Diode.   **CO4**   **L2**   **10M**

UNIT-V

9   Draw the circuit diagram for a common base circuit arrangement and plot its input and Output characteristics. Show the different regions of the output characteristics and explain their occurrence.   **CO5**   **L3**   **10M**

OR

10   With neat circuit diagram and equations, explain Fixed Bias circuit of BJT.   **CO5**   **L2**   **10M**

UNIT-VI

11   a   Explain the construction and principle of operation of N-channel JFET.   **CO6**   **L2**   **5M**
     b   Define the JFET Volt-Ampere Characteristics and determine FET parameters.   **CO6**   **L2**   **5**

OR

12   Explain the CS configuration With construction and its operation.   **CO6**   **L2**   **10M**

*** END ***