Question Paper Code	**12649**

B.E. / B.Tech. - DEGREE EXAMINATIONS, APRIL / MAY 2024

Second Semester

Civil Engineering

20ESEE202 - BASICS OF ELECTRICAL AND ELECTRONICS ENGINEERING

Regulations - 2020

Duration: 3 Hours   Max. Marks: 100
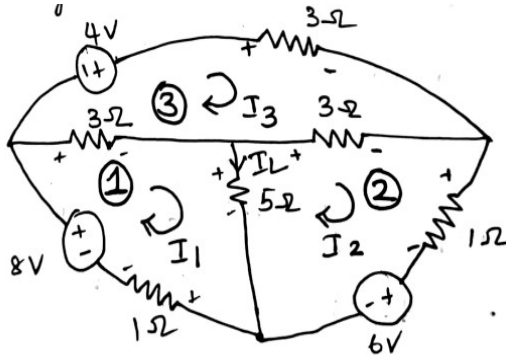
PART - A (10 × 2 = 20 Marks)
Answer ALL Questions

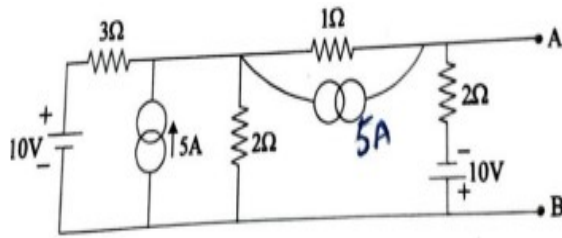|		Marks	K-Level	CO
1.	Define Kirchhoff's Current Law and Voltage Law.	2	K1	CO1
2.	State Thevenins theorem.	2	K1	CO1
3.	Recall about the industrial wiring.	2	K1	CO2
4.	Define apparent power.	2	K1	CO2
5.	Mention the function of carbon brush in DC machine.	2	K1	CO3
6.	What are the various losses in DC Machines?	2	K1	CO3
7.	Define Fermi level.	2	K1	CO4
8.	List the types of ADC.	2	K1	CO4
9.	Classify-transducer.	2	K2	CO5
10.	What are the suitable materials for piezoelectric transducer?	2	K1	CO5

PART - B (5 × 13 = 65 Marks)
Answer ALL Questions

11. a) Solve the given circuit and find the values of I and R.   13   K3   CO1

OR

b) Make use of Thevenin's equivalent for the network between A and B   13   K3   CO1
and compute the values.

K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze; K5 – Evaluate; K6 – Create   **12649**

12. a) A coil of resistance 10Ω and an inductance of 0.1H is connected in series with a capacitance of 150µF across a 200V,50 Hz supply calculate
a)the inductive reactance b)the capacitive reactance c)the net reactance d) the current e)the power factor of the circuit f)also find voltage across R,L and C.   13 K2 CO2

OR

b) Illustrate the wiring materials and its accessories used for House wiring.   13 K2 CO2

13. a) Explain the working principle and construction of single phase transformer and derive its emf equation.   13 K2 CO3

OR

b) i) Derive the emf equation of the DC generator.   7 K2 CO3

ii) Explain about DC separately excited DC generator.   6 K2 CO3

14. a) Explain the input and output characteristics of a CE transistor configuration.   13 K2 CO4

OR

b) Enumerate about Inverting and Non Inverting operational amplifier with neat diagram.   13 K2 CO4

15. a) Illustrate with neat diagram about Linear Variable Differential Transformer and discuss its waveform.   13 K2 CO5

OR

b) Describe the working principle and construction of Capacitive and Piezo electric Transducer.   13 K2 CO5

PART - C (1 × 15 = 15 Marks)

16. a) Explain the working principle and construction of MI-Attraction and Repulsion type Instrument.   15 K2 CO6

OR

b) With a neat sketch explain about the working of Permanent Magnet Moving Coil (PMMC) and derive its torque equation.   15 K2 CO6

K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze; K5 – Evaluate; K6 – Create   **12649**