B.E. / B.Tech. - DEGREE EXAMINATIONS, NOV/DEC 2022

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.	2,K1,CO1
2.	State Norton's theorem.	2,K1,CO1
3.	Give the line and phase values in star connection	2,K1,CO2
4.	What are the three types of power used in AC circuits?	2,K1,CO2
5.	What is the function of carbon brush in DC machine?	2,K1,CO3
6.	Define transformation ratio.	2,K1,CO3
7.	What is Depletion region in a PN junction diode?	2,K1,CO4
8.	List the types of DAC.	2,K1,CO4
9.	What is piezo electric effect?	2,K1,CO5
10.	Define an Inverse transducer. Give an example.	2,K1,CO5

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

11. a) Use mesh analysis to determine the three mesh currents in the circuit.   13,K3,CO1
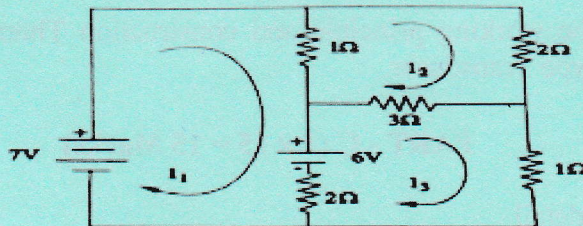
OR

b) Apply Superposition theorem, find the current through 5Ω resistor in   13,K3,CO1
the circuit.
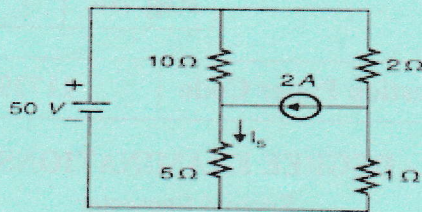
12. a) (i) Explain the different types of wiring systems with neat diagram in detail.
     7,K2,CO2

       (ii) Explain the general wiring rules for houses.
     6,K2,CO2

OR

   b) A series combination of 10Ω and 50mH inductance is connected to a 220V, 50 Hz supply. Estimate the current, active power, 50Hz supply. Estimate the current, active power, reactive power and apparent power. Also estimate the voltage across R and L draw the phasor diagram.
     13,K2,CO2

13. a) Describe the working principle and construction of DC motor and give the expression for torque.
     13,K2,CO3

OR

   b) Explain the principle working of Single phase Induction motor.
     13,K2,CO3

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

OR

   b) Explain about Operational amplifier and its characteristics.
     13,K2,CO4

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

OR

   b) Illustrate the working principle and construction Thermoelectric and Inductive type Transducer.
     13,K2,CO5

PART - C (1 × 15 = 15 Marks)

16. a) Explain in detail
       (i) Current Transformer
       (ii) Potential transformer
     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　**11729**