Reg. No.												

Question Paper Code	12137

11 AUG 2023

B.E. / B.Tech. - DEGREE EXAMINATIONS, APRIL / MAY 2023

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)

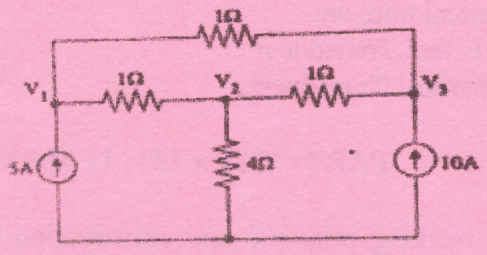
Answer ALL Questions

		Marks, K-Level, CO
1.	State superposition theorem.	*2,K1,CO1*
2.	Define super node.	*2,K1,CO1*
3.	Draw the power triangle for AC circuits.	*2,K2,CO2*
4.	Which type of wire is used in house?	*2,K1,CO2*
5.	Give the essential parts of DC machine.	*2,K1,CO3*
6.	What are the two types of rotors of an induction motor?	*2,K1,CO3*
7.	Define the different operating regions of transistor.	*2,K1,CO4*
8.	List the types of DAC.	*2,K1,CO4*
9.	What is LVDT?	*2,K1,CO5*
10.	State the basic requirement of a measuring instrument.	*2,K1,CO5*

PART - B (5 × 13 = 65 Marks)

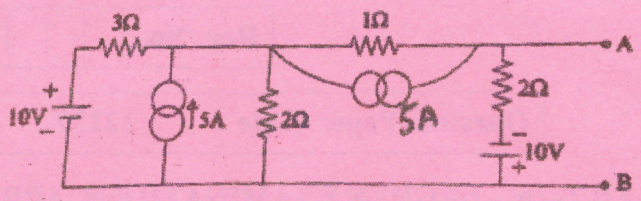
Answer ALL Questions

11. a) By applying nodal method find the voltages V_1, V_2 and V_3 for the given circuit. *13,K3,CO1*



OR

b) Draw the thevenin's equivalent circuit for the network between A and B. Also determine the thevenin's resistance & thevenin's voltage. *13,K2,CO1*



12. a) An inductive coil of power factor 0.8 lagging is connected in series with a 120μF capacitor. When the series circuit is connected to a source to frequency 50Hz, it was observed that the magnitude of voltage across the coil and capacitor are equal. Determine the parameters of the coil. *13,K2,CO2*

OR

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

13. a) (i) Derive the emf equation of the DC generator. *8,K2,CO3*
(ii) Explain about DC separately excited DC generator. *5,K2,CO3*

OR

b) Explain the principle and construction of any two types of single phase induction motor. *13,K2,CO3*

14. a) Illustrate the construction and working of PN diode and its characteristics with a neat sketch. *13,K2,CO4*

OR

b) Discuss about the following:-
(i) Weighted Resister type. *7,K2,CO4*
(ii) R-2R type. *6,K2,CO4*

15. a) With neat diagram explain about Linear Variable Differential Transformer and discuss its waveform. *13,K2,CO5*

OR

b) Write a technical note on:-
(i) Hall Effect Transducer. *7,K2,CO5*
(ii) Mechanical Transducer. *6,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*