C   **Reg. No. :**

Duration: Three hours   Maximum: 100 Marks

Answer All Questions

PART A - (5x 1 = 5 Marks)

1. Ohm's law is stated as   CO1- R

    (a) V = IR   (b) R = VI   (c) I = VR   (d) V=I^2R

2. What is the relationship between speed, back emf and flux?   CO2- R

    (a) N= E_b Φ   (b) N = Φ / E_b (c) Nα E_b /Φ   (d) Φ α N E_b

3. A capacitor start, capacitor run single phase induction motor is basically a   CO3- U

    (a) ac series motor   (b) dc series motor

    (c) 2 phase induction motor   (d) 3 phase induction motor

4. Which of the following is not a component of a stepper motor?   CO4- U

    (a) Windings   (b) Rotor and Stator   (c) Commutator   (d) Brush

5. The majority carriers of P-type semiconductor are _____ .   CO5- U

   (a) Electrons   (b) Holes   (c) Electron-hole pair   (d) all of the above

PART – B (5 x 3= 15 Marks)

6. Three resistors 4Ω, 12Ω and 6Ω are connected in parallel. If the total current   CO1- App
   taken is 12 A, Solve the current through each resistor.

7. What is the basic principle of DC Motor & DC Generator.   CO2- R

8. Mention the methods of starting of 3-phase synchronous motor.   CO3- U

9. Outline types of AC servo motor.   CO4- U

10. What is meant by data acquisition system? What are the types of DAS?   CO5- U

PART – C (5 x 16= 80Marks)

11. (a) Solve the total current taken from the source.   CO1-App   (16)
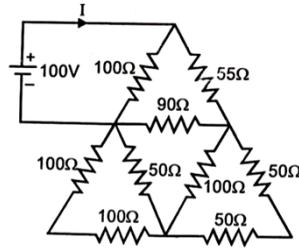
Or

(b) Develop an expression for RMS value and average value of a   CO1-Ana   (16)
sinusoidal waveform.

12. (a) Explain briefly about the construction of a DC Machines   CO3-U   (16)

Or

(b) Illustrate and explain the general layout of single phase   CO3-U   (16)
transformer.

13. (a) Explain the working principle of Shaded pole induction motor. .   CO3-U   (16)

Or

(b) Explain the construction of hysteresis type Synchronous motor.   CO3-U   (16)

14. (a) Explain the Construction, Principle of operation and applications of   CO4-U   (16)
AC servo motor.

Or

(b) Explain the Construction, Principle of operation and applications of   CO4-U   (16)
Linear induction motor.

15. (a) Why is a Zener diode considered as a special purpose   CO5-Ana   (16)
semiconductor diode? Draw the I-V characteristics of Zener diode.
Describe briefly with the help of a circuit diagram.

Or

(b) Illustrate in detail the working of BJT in CE configuration with its   CO5-Ana   (16)
input & output characteristics

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