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Question Paper Code: U2326

B.E./B.Tech. DEGREE EXAMINATION, MAY 2022

Second Semester

Civil Engineering

21UEE226- Basic Electrical and Electronics Engineering

(Regulations 2021)

(Common to Mechanical and Agriculture Engineering)

Duration: Three hours

Maximum: 100 Marks

Answer All Questions

PART A - (5x 1 = 5 Marks)

1. The resistance of a 100 W, 200 V lamp is _____. CO1- R
(a) 100 Ohm (b) 200 ohm (c) 400 ohm (d) 1600 ohm
2. What is the relationship between speed, back emf and flux? CO2- R
(a) $N = E_b \Phi$ (b) $N = \Phi / E_b$ (c) $N \propto E_b / \Phi$ (d) $\Phi \propto N E_b$
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

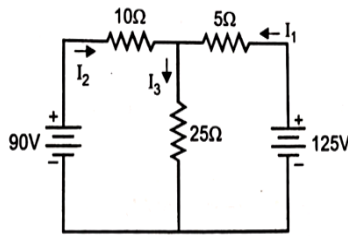
PART – B (5 x 3= 15 Marks)

6. A 200Ω resistor has a 2W power rating. What is the maximum current that can flow in the resistor without exceeding the power rating? CO1- App
7. What is the function of commutator in a 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 current supplied by the batteries in the network shown in figure. CO1-App (16)



Or

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

12. (a) Illustrate the characteristics of different types of DC Motor. CO3-U (16)

Or

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

13. (a) Explain the working principle of Capacitor start Capacitor run 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 AC servo motor. CO4-U (16)

Or

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

15. (a) Explain the Forward and Reverse biasing of a p-n junction diode with neat sketch. CO5-U (16)

Or

(b) Explain in detail about any two types of digital to analog converters with neat diagram. CO5-U (16)