B.TECH. DEGREE EXAMINATIONS: NOV/DEC 2010

Third Semester

FASHION TECHNOLOGY

EEE255: ELECTRICAL AND ELECTRONICS ENGINEERING

Time: Three Hours   **Maximum Marks: 100**

Answer ALL Questions:-

PART A (10 x 1 = 10 Marks)

1. The resistivity or specific resistance is measured in

   A) Ω - m   B) Ω / m C) Ω / m^3 D) Ω / m^2

2. The form factor is the ratio of

   A) Average value to RMS value   B) RMS value to average value

   C) Peak value to average value   D) Peak to RMS value

3. The speed of rotor of an induction motor is always_____synchronous Speed

   A) Equal to   B) More than   C) Less than   D) Half of

4. The input to a stepper motor is in the form of

   A) Frictional form   B) Electric pulses   C) Mechanical inertia   D) Viscous damping force

5. Moving iron and PMMC instruments can be distinguished from each other by looking at

   A) Pointer   B) Terminal SIZE   C) Scale   D) Scale range

6. Thermocouple is used to measure

   A) Flow   B) Pressure   C) Temperature   D) Liquid level

7. A JFET is a

   A) Two p-n junction, three terminals, current driven device

   B) Two p-n junction, three terminals, bipolar device

   C) Two p-n junction, three terminals, voltage driven device

   D) Three p-n junction, two terminals, unipolar device

8. Which of the following gates is universal gate?

   A) NOT   B) OR   C) AND   D) NOR

9. A closed loop control system is basically different from open loop control system due to

   A) Feedback   B) Servo mechanism   C) Actuating signal   D) Error signal

10. The order of the system determined by the number of

   A) Stable roots of the system   B) Multiplying terms in the denominator

   C) Poles at the origin   D) Unstable roots of the system1

PART B (10 x 2 = 20 Marks)

11. State Ohm's law?
12. Define form factor.
13. Give the condition to obtain maximum torque in three phase induction motor.
14. Name any two dc motor starters.
15. What are the forces acting on the moving system of an indicating instrument?
16. What is a transducer?
17. Define diffusion current.
18. Write the truth table for EX-NOR gate.
19. Give an example for open loop and closed loop systems.
20. Define transfer function.

PART C (5 x 14 = 70 Marks)

21. a) (i) State and prove Kirchhoff's laws.   (7)
     (ii) Define RMS value and obtain the same for sinusoidal waveform.   (7)
(OR)
  b) Derive the expression for impedance, current, phase angle, power factor and power for the RLC series circuit.

22. a) (i) What is rotating magnetic field? Explain how is it produced?   (7)
     (ii) Draw and explain torque-slip characteristics of three-phase induction motor.   (7)
(OR)
  b) Explain the speed control methods of DC Motors.

23. a) With neat sketch, explain the construction and working of attraction and repulsion type of moving iron instruments.
(OR)
  b) What is LVDT? Explain the principle of operation of LVDT with relevant diagrams.

24. a) (i) Draw and explain the V-I characteristics of PN junction diode.   (7)
     (ii)Explain the operation of NPN transistors   (7)
(OR)
  b) With neat block diagram, explain the architecture of 8085 microprocessor.

23. a) Draw the block diagram of open loop and closed loop control systems and explain.
(OR)
  b) With suitable example explain the position feedback control system.

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