Register Number.....

B.TECH. DEGREE EXAMINATIONS: APRIL /MAY 2009

Third Semester

U 07EE311 BASICS OF ELECTRICAL AND ELECTRONICS ENGINEERING

(Common to **TEXTILE TECHNOLOGY** and
TEXTILE TECHNOLOGY (FASHION TECHNOLOGY) Branches)

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

Answer ALL the Questions:-

PART A (20 × 1 = 20 Marks)

1. The opposition offered by a substance to the flow of electric current is called
   A. Inductance B. Capacitance C. Resistance D. Resonance

2. The rate at which work is done in an electric circuit is called
   A. Voltage B. Electric Power C. Energy D. Current

3. The unit of capacitance is
   A. Ohms B. Henry C. Farads D. Hertz

4. In the series RL circuit
   A. PF=1 B. I=0 C. V=0 D. Current lags the voltage

5. The DC motor converts
   A. Coverts AC to DC B. Converts DC to AC
   C. Electrical Energy into Mechanical power D. VI = 0

6. In three phase induction motor, synchronous speed is given by
   A. $N_S = 120F/P$ B. $N_S = 120P/F$ C. $N_S = 0$ D. $N_S = 120PF$

7. In motors starters are used to
   A. To control the speed B. To limit the starting current
   C. To improve the PF D. To stabilize the voltage

8. Stepper motors are used in
   A. Hoists B. Mixer Grinders C. Ceiling Fans D. Printers

9. _____ meters has the non linear scale
   A. Moving Coil B. Moving Iron C. DC D. Digital

10. Wattmeter is used to measure the
    A. Energy B. Resistance C. Voltage D. Power

11. A device which converts physical quantities into electrical signals are called
    A. Resistance B. Inductance C. Transducer D. Starter

12. Ammeter should always connected in
    A. Parallel B. Series C. Series or parallel D. Open

13. The semiconductor is formed by _____ bonds
A. Electrovalent B. Covalent C. Co-ordinate D. Trivalent

14. The leakage current across a PN junction is due to _____ carriers
A. Majority B. Atoms C. Minority D. Capacitance

15. The decimal equivalent of 1010_2
A. 08 B. 02 C. 09 D. 10

16. Microprocessors are based on _____ architecture
A. Von-neuman B. Havell C. Harvard D. Ohm's

17. Speed control of an electric drive is an example for
A. Open Loop B. Closed Loop C. Starting D. Mechanical

18. Closed Loop system will have
A. Feed back B. with out feed back C. Forward path D. Individual loop

19. _____ improves the time response of a system
A. Feed back B. Open loop C. Forward path D. Individual loop

20. Due to negative feed back system the overall gain of the system
A. Increases B. Reduces C. Won't Change D. Positive

PART B (5 x 16 = 80 Marks)

21. a. (i) State and prove Kirchhoff's laws

(ii) Explain in detail about the RLC series circuit with phasor diagram and deriv equation for impedance.

(OR)

b. (i) Define the following terminologies

(1) RMS value (2) Power Factor
(3) Form Factor (4) Peak Factor

(ii) Explain in detail about the RC series circuit with phasor diagram and deriv equation for impedance.

22. a. Describe in detail with neat sketches about the construction and working princip DC generator.

(OR)

b. (i) Explain about the three point DC motor starter.

(ii) Explain about the operation of a stepper motor.

23. a. Explain about the construction and working principle of single phase induction type energy meter.

(OR)

b. (i) Compare PMMC, MI & electro-dynamo type meters. (8)
(ii) Compare Resistive, Inductive and Capacitive type transducers. (8)

24. a. Explain about the construction, working and characteristics of NPN transistor.

(OR)

b. Explain the following conversion system with suitable examples

(i) Decimal to Binary System
(ii) Binary to Decimal System
(iii) Decimal to Hexadecimal System
(iv) Hexadecimal to Decimal System

25. a. Differentiate open loop and closed loop control system with suitable application in textile industries.

(OR)

b. With neat sketch explain the block diagram of feedback control system.

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