

Q.22 What is D.O.L starter? Also, write its working.

### SECTION-D

**Note:** Long answer type questions. Attempt any two questions out of three questions. (2x8=16)

Q.23 Explain the construction & working principle of transformer with the help of suitable diagram. What are the various cooling methods of transformer.

Q.24 Explain the working principle of DC motor. Explain the various parts of a DC. motors with the help of neat diagram.

Q.25 Briefly explain the characteristics of common base, common emitter and common collector configurations.

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**3rd Sem / Automobile, Mechanical Engg., Mechanical (Tool & Die Design), Agri, Chem, P & P, Civil, Plastic, Prod, CNC, CAD/CAM, Found. & Forg, Metallurgy, Print Making Tech., Mech (Ad. Manu. Tech.), Mech Engg (Fabrication Tech), Mech. Engg. (Prod.)**

**Subject :Basics of Electrical and Electronics Engineering**

Time : 3 Hrs.

M.M. : 60

### SECTION-A

**Note:** Multiple choice questions. All questions are compulsory (6x1=6)

Q.1 The resistance of 100W, 200V lamp is

- a) 100  $\Omega$                       b) 200  $\Omega$   
c) 400  $\Omega$                       d) 1600  $\Omega$

Q.2 The power factor at resonance in RLC series circuit is ?

- a) Zero                              b) 1  
c) 2                                  d) Infinite

Q.3 The frequency of DC supply is \_\_\_\_\_.

- a) Zero                              b) 220 Hz  
c) 440 Hz                          d) 50 Hz

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Q.4 The voltage of single phase supply to residential consumers is

- a) 110 V                      b) 210 V
- c) 230 V                      d) 400 V

Q.5 The insulation resistance of a cable can be measured by

- a) Watt meter                b) Earth tester
- c) Volt meter                d) Meggar

Q.6 The majority charge carriers in PNP transistor are

- a) Electrons                b) Protons
- c) Neutrons                d) Holes

### SECTION-B

**Note:** Objective/ Completion type questions. All questions are compulsory. (6x1=6)

Q.7 Define Alternating current.

Q.8 What is doping?

Q.9 The full form of H.R.C. fuse is \_\_\_\_\_ fuse.

Q.10 In a circuit, the current is measured by \_\_\_\_\_.

Q.11 In delta connected system,  $I_L = \sqrt{3}X$  \_\_\_\_\_.

Q.12 A.D.C. motor operates on the principle of \_\_\_\_\_.

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### SECTION-C

**Note:** Short answer type questions. Attempt any eight questions out of ten questions. (8x4=32)

Q.13 Two resistances of 5 ohm and 10 ohm are used to form a circuit. Find the effective resistance if both resistance are connected in

- a) Series
- b) Parallel

Q.14 State and briefly explain the types of D.C motors.

Q.15 What are the advantages of electrical energy over other forms of energy?

Q.16 Explain Faraday's laws of electromagnetic induction.

Q.17 Enlist the various instruments used for measuring electrical quantities.

Q.18 Differentiate between feeder, distributor and service main.

Q.19 Enlist the various accessories and parts of domestic electrical installation.

Q.20 What is an ELCB? Explain the working and the field of its applications.

Q.21 Give the classification of materials on the basis of energy band structure.

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