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## **3rd Sem / Agri, Auto, Chem, P & P, Civil, Mech, Plastic, Prod, T & D, CNC, CAD/CAM, Found. & Forge, Metallurgy, Print Making Tech, Mech ( Ad. Manu. Tech.), Mech Engg. (Fabrication Tech.), Mech Engg ( Production)**

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

Time : 3Hrs. M.M. : 100

## **SECTION-A**

**Note:** Multiple choice questions. All questions are compulsory (10x1=10)

- Q.1 An Ammeter is used to measure (CO2)  
a) energy                          b) voltage  
c) power                            d) current

Q.2 Power is measured by (CO2)  
a) Wattmeter                      b) energy meter  
c) voltmeter                      d) ammeter

Q.3 Expand R.M.S value (CO3)  
a) Root mean square            b) Root mean sum  
c) Root maximum sum           d) None of above

Q.4 M in MCB stands for (CO7)  
a) Minimum                        b) maximum  
c) miniature                      d) moisture

Q.5 Stator core of Induction motor is usually made of (CO6)

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- a) mild steel  
b) aluminum  
c) laminated silicon steel  
d) cast iron

Q.6 The resistance of earth wire should be (CO7)  
a) low b) medium  
c) high d) very high

Q.7 The frequency of the generated voltage is (CO6)  
a) 60 Hz b) 50 Hz  
c) 100 Hz d) 40 Hz

Q.8 A fuse is (CO6)  
a) Always connect in series with the circuit  
b) Always connect in parallel with the circuit  
c) Normally connect parallel  
d) None of the above

Q.9 Holes are the majority carriers in (CO9)  
a) N-type b) P-type  
c) PN-type d) NP-type

Q.10 The time period of AC quantity is the time required it to complete one cycle (CO6)  
a) Cycle b) frequency  
c) time period d) peak value

## **SECTION-B**

**Note:** Objective type questions. All questions are compulsory. (10x1=10)

- Q.11 The instrument used to measure electrical energy is called \_\_\_\_\_ (CO1)

Q.12 What is resistance? (CO2)

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- Q.13 Define electric power. (CO2)  
 Q.14 Define power factor. (CO3)  
 Q.15 Write the full form of ACSR conductor. (CO5)  
 Q.16 Write the transformation ratio of the transformer. (CO4)  
 Q.17 Full form of HRC. (CO6)  
 Q.18 Write the full form of TPIC. (CO7)  
 Q.19 What is Intrinsic semiconductor. (CO9)  
 Q.20 Explain the term Earthing. (CO6)

### **SECTION-C**

- Note:** Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)
- Q.21 What are the advantages of electrical energy over other forms of energy. (CO1)  
 Q.22 Examine importance of earth wire and neutral wire in a distribution system. (CO5)  
 Q.23 Write expression for real power, apparent power and reactive power for AC circuit. (CO2)  
 Q.24 List any five electrical parameter of circuit along with their unit of measurement and measuring device. (CO2)  
 Q.25 State Faradays law of electromagnetic induction with lenz law. (CO3)  
 Q.26 Define electrical energy, time period, form factor, average value and peak factor. (CO7)  
 Q.27 Define Power factor and explain disadvantages of low power factor. (CO3)

- Q.28 State and explain flaming left hand and Right hand rule. (CO3)  
 Q.29 Explain disadvantage of power factor. How PF can be improved. (CO3)  
 Q.30 Draw a circuit diagram to measure voltage, current, power and electrical energy in AC circuit with load. (CO3)  
 Q.31 Explain and draw the key diagram of Transmission system. (CO5)  
 Q.32 Differentiate between high voltage and low voltage distribution system. (CO5)  
 Q.33 What is the need of a starter? Explain star-delta starter with suitable diagram. (CO6)  
 Q.34 How we reverse the direction of rotation of three phase IM and single phase IM. (CO6)  
 Q.35 Derive the relationship between the beta and alpha of a transistor. (CO3)

### **SECTION-D**

- Note:** Long answer type questions. Attempt any two questions out of three questions. (2x10=20)
- Q.36 Describe type of transformer according to their output voltage. (CO4)  
 Q.37 Explain various accessories and parts of domestic electrical installation. (CO7)  
 Q.38 What is three phase system? Draw its phasor diagram? Write five advantages of Three phase system over single phase system. (CO5)