

Roll no. _____

ID: 180931/170931/120931/030931/117531

Semester: 3rd

Branch: Electrical, Power Station Engg., Elect. & Eltx. Engg., Fire Tech & Safety

Subject Name: Electrical and Electronics Engineering Materials

Time Allowed : 3 Hrs.

MM:100

Section -A

Note: Multiple Choice questions. All questions are compulsory.

10x1=10

- Q.1 Conductivity of a good conductor should be (CO-2)
a) Very low b) Low c) Medium d) High
- Q.2 In case of Insulators, valence band and conduction bands have (CO-1)
a) More gap b) Less gap c) Over lapped d) Moderate gap
- Q.3 Electrical contact resistance is better between (CO-2)
a) Carbon and Carbon b) Metal and Metal
c) Carbon and Metal d) Carbon and Insulator
- Q.4 Basic Ceramic material is (CO-4)
a) Lime Stone b) Clay c) Cellulose d) Sand
- Q.5 Field Coils of electrical motors are insulated by (CO-5)
a) Varnish b) Cotton c) Mica paper d) Jute
- Q.6 Which of the following is used in permanent magnet? (CO-6)
a) Mu Metal b) Silicon iron c) Nickel iron d) Cobalt steel
- Q.7 The transformer winding is made from (CO-8)
a) Copper b) Aluminium c) Iron d) Silicon steel
- Q.8 Thermocouple works on (CO-7)
a) Thomson effect b) See back effect c) Peltier effect d) Joule effect
- Q.9 The Frame of an induction motor is made of (CO-8)
a) Silver b) Aluminium c) Copper d) Stainless steel
- Q.10 Material used for making fuse wire should have melting point. (CO-7)
a) High b) Medium c) Low d) Any of the above

Section-B

Note: Objective type questions. All questions are compulsory.

10x1=10

- Q.11 What is conduction band? (CO-1)
- Q.12 Conductivity of a good conductor should be _____. (CO-1)
- Q.13 Define Resistance. (CO-2)
- Q.14 Brass is an alloy of copper and _____. (CO-2)
- Q.15 Define Semiconductor. (CO-3)
- Q.16 What is Insulator? (CO-4)
- Q.17 Natural rubber is obtained from _____. (CO-5)
- Q.18 Define Permeability. (CO-6)
- Q.19 Expand HRC. (CO-7)
- Q.20 The outer frame of DC machine is made of _____. (CO-8)

Section -C

Note: Short answer type Questions. Attempt any twelve questions out of fifteen questions.

12x5=60

- Q.21 Write short notes on: a) Conducting Materials b) Semi-Conducting Materials
c) Insulating Materials (CO-1)
- Q.22 Draw and explain energy band for Insulating materials. (CO-1)
- Q.23 Explain Superconductivity. (CO-2)
- Q.24 What are different factors affecting resistivity of conductors? (CO-2)
- Q.25 State and explain characteristics of good insulating material. (CO-4)
- Q.26 What is an extrinsic semiconductor? (CO-3)
- Q.27 Explain electrical properties of Insulating materials. (CO-4)

- Q.28 State the properties and applications of Bakelite. (CO-5)
Q.29 Differentiate between the thermosetting and thermoplastic materials. (CO-5)
Q.30 Classify the ferromagnetic material in detail. (CO-6)
Q.31 Differentiate between soft magnetic and hard magnetic materials. (CO-6)
Q.32 What is Fuse? State the important properties of a fuse wire. (CO-7)
Q.33 What is a thermocouple and its use? (CO-7)
Q.34 Write various engineering materials necessary for fabrication of DC Motor. (CO-8)
Q.35 Give a brief description of materials used in Electrical machines? (CO-8)

Section-D

Note: Long answer questions. Attempt any two questions out of three questions.

2x10=20

- Q.36 Discuss the important properties and applications of Aluminum. (CO-2)
Q.37 What are insulating materials? Explain different thermal properties of insulating materials. (CO-5)
Q.38 Explain various engineering materials necessary for fabrication of Transformer. (CO-8)