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3rd Sem / Electrical Engineering Materials

Subject:- Electrical Engineering Materials

Time : 3Hrs. M.M. : 60

SECTION-A

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

Q.1 Brushes of 3-phase slip-ring Induction motor are made up of (CO2)

a) cast iron b) silicon steel
c) carbon d) copper

Q.2 The material has zero temperature coefficient of resistance is (CO1)

a) Aluminium b) Copper
c) Carbon d) Maganin

Q.3 Class E insulation has a working temperature of _____°C. (CO1)

a) 90 b) 120
c) 130 d) 180

Q.4 Solder is an alloy of (CO3)

a) Copper and lead b) Nickle, copper, zinc
c) Tin and lead d) Silver, copper and lead

Q.5 Semiconductors have _____ conduction band and _____ valence band. (CO1)

a) A lightly filled; a moderately filled
b) an almost filled; a moderately filled
c) an almost empty; an almost filled
d) an almost filled; an almost empty

Q.6 The relative permeability of superconducting material is (CO3)

a) normal b) zero
c) one d) infinitely large

SECTION-B

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

Q.7 Commutator of a.d.c. motor is made up of ___ (CO2)

Q.8 Bronze is alloys of _____ (CO2)

Q.9 Define Doping. (CO1)

Q.10 Write any two properties of Glass. (CO1)

Q.11 Body of the cartridge fuse is made up of ____. (CO3)

Q.12 The magnetic material losses its magnetic properties at _____ (CO3)

SECTION-C

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

Q.13 Write the properties and applications of SF6. (CO3)

Q.14 Define semiconductor. Mention any four applications of semiconductors. (CO1)

Q.15 Discuss working of thermocouple and mention its important applications. (CO3)

Q.16 Define Hysteresis losses and discuss the factors on which hysteresis loss depends. (CO2)

Q.17 Write a short note on thermoplastic materials. (CO1)

Q.18 Write the properties and applications of copper. (CO-1,2)

Q.19 Discuss fuse and important properties of a fuse wire. (CO-1,3)

Q.20 Explain in brief mechanical properties of insulating material. (CO1)

Q.21 Write a short note on soft ferrites and its uses. (CO3)

Q.22 Explain the process soldering and properties of materials used as solder. (CO3)

SECTION-D

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

Q.23 Classify materials into conducting, semiconducting and insulating material on the basis of their atomic structure. (CO1)

Q.24 Write various engineering materials necessary for fabrication of Transformer along with their part name. Also explain the reasons of using these materials for that particular application. (CO2)

Q.25 Discuss high resistivity conducting material with their properties and applications. (CO1)

(Note : Course outcome/CO is for office use only)