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3rd Sem / Electrical Engg., PSE, Elect. & Eltx. Engg., Fire Tech & Safety

Subject:- Electrical and Electronics Engineering Materials

Time : 3Hrs. M.M. : 100

SECTION-A

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

Q.1 Solder is an alloy of
a) Copper and aluminum
b) tin and lead
c) nickel, copper and zinc
d) silver, copper and lead

Q.2 _____ is the main constituent of glass
a) Fe_2O_3 b) S_iO_2
c) AI_2O_3 d) B_2O_3

Q.3 A good electric contact material should have all of the following properties except
a) high resistivity
b) high resistance to corrosion
c) good thermal conductivity
d) high melting point

Q.4 Addition of 0.3 to 4.5% silicon to iron _____ the electrical resistivity of iron.
a) increases b) decreases
c) does not change d) None of the Above .

Q.5 Which of the following materials is used for making coil of standard resistances?
a) Copper b) Nichrome
c) Platinum d) Manganin

Q.6 The conduction of electricity, in semiconductors, takes place due to movement of
a) positive ions only
b) negative ions only
c) positive and negative ions
d) electrons and holes

Q.7 For germanium the forbidden energy gap is
a) 0.15eV b) 0.25eV
c) 0.5eV d) 0.7eV

Q.8 The minority carrier concentration is largely a function of
a) forward biasing voltage
b) reverse biasing voltage
c) temperature
d) the amount of doping

Q.9 The conductivity of an extrinsic semiconductor with temperature
a) decreases b) increases
c) remains constant d) None of the above

Q.10 Super conductivity can be destroyed by
a) adding impurities
b) reducing temperatures
c) application of magnetic field
d) any of the above

SECTION-B

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

Q.11 Define Eddy Current .
Q.12 Define Conductivity .
Q.13 What is Thermocouple.
Q.14 Name any two Low resistivity copper alloys.
Q.15 What is the full form of ACSR.
Q.16 Define Breakdown Voltage .
Q.17 What is Superconductivity .
Q.18 Name any two Conducting Materials.
Q.19 What is Bundle Conductor.
Q.20 What is Extrinsic Semiconductor.

SECTION-C

Note: Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)

Q.21 Explain the Conductors, Semiconductors and Insulators with their energy bands.
Q.22 Mention the Classifications of conducting materials.
Q.23 Explain the general properties of Aluminium as conductor.

Q.24 Explain the applications of Steel in the field of electrical engineering.
Q.25 What is bundle Conductors and its applications.
Q.26 Describe the practical applications of Brass and Bronze .
Q.27 Write the applications of Platinum.
Q.28 Discuss the applications of manganin.
Q.29 Describe Superconductors and their applications.
Q.30 Explain the properties of Semiconductors.
Q.31 Explain the electrical properties of Insulating Materials.
Q.32 What are the Classifications of plastic.
Q.33 Explain the Concept of eddy current and Hysteresis Loss for magnetic materials.
Q.34 Describe the Thermocouple materials and their applications
Q.35 What are the materials used for Resistor, inductor and capacitors.

SECTION-D

Note: Long answer type questions. Attempt any two questions out of three questions. (2x10=20)

Q.36 Explain the Insulating materials with their properties and applications.
Q.37 Explain the various engineering materials used for Electrical machines.
Q.38 Describe the magnetic materials and their applications.