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**3rd Sem / Electrical, Power Station Engg., 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 Most commonly used Overhead transmission line conductor are_____. (CO2)

a) Copper b) Steel
c) Galvanized iron d) ACSR

Q.2 Forbidden energy band in semiconductors is (CO1)

a) Low b) Large
c) medium d) none of above

Q.3 The relative permeability of superconducting material is (CO2)

a) normal b) zero
c) One d) Infinitely Large

Q.4 Which is most used semi-conducting material. (CO1)

a) Gold b) Copper
c) Silver d) Silicon

Q.5 The stator core of 3-phase induction motos is made up of (CO7)



a) Cast iron b) Silicon Steel
c) Carbon d) Copper

Q.6 Class H insulation has a working temperature of_____ degree C. (CO3)

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

Q.7 Which of the following material is used for making the permanent magnet. (CO6)

a) Cobalt Steel b) Mu-Metal
c) Silicon Iron d) Nickel Iron

Q.8 By laminating the rotor core of an induction motor, which of the following losses are reduced (CO7)

a) Hysteresis losses b) Eddy current losses
c) Frictional losses d) All of the above

Q.9 The common household glass is (CO3)

a) Boro silicate glass b) High Leaded glass
c) Soda lime glass d) High silica glass

Q.10 The temperature coefficient of resistance is negative for. (CO1)

a) Mercury b) Steel
c) Silicon d) Copper

## SECTION-B

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

Q.11 Thermocouple is used for measuring _____. (CO5)

Q.12 Write any two properties of asbestos. (CO4)

Q.13 Define soldering. (CO5)

Q.14 PVC stands for_____. (CO3)

Q.15 Define Doping. (CO1)

Q.16 Name any two gaseous insulating materials. (CO8)

Q.17 Slip ring of A.C. machine is made up of _____. (CO7)

Q.18 Air is an example of insulating material. (True/False). (CO3)

Q.19 Nichrome is an alloy of_____ and chromium. (CO2)

Q.20 The magnetic material losses its magnetic properties at _____ (CO6)

## SECTION-C

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

Q.21 Define super conductivity and Mention its applications. (CO4)

Q.22 Write in brief about the mechanical properties of insulating material. (CO3)

Q.23 Make a list of materials along with name used for making the part of induction motor. (CO7)

Q.24 What is fuse? Discuss the important properties of a fuse wire? (CO5)

Q.25 Write the properties of Mica and its types. (CO3)

Q.26 Explain the process soldering and properties of materials used as solder. (CO4)

Q.27 Define semiconductor. Mention any four applications of semiconductors. (CO1)

Q.28 Differentiate between soft and hard magnetic materials. (CO6)



Q.29 Define Dielectric Strength and dielectric loss. Mention their SI units. (CO3)

Q.30 Write the properties and applications of Brass. (CO2)

Q.31 Explain the thermal classification of insulating material. (CO3)

Q.32 Write a short note on Bi-metals and its applications. (CO5)

Q.33 Write the properties of low resistivity conducting material. (CO2)

Q.34 Discuss thermocouple with their materials. Mention its important applications. (CO5)

Q.35 Define eddy current losses and discuss the factor on which these depends. (CO6)

## SECTION-D

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

Q.36 Classify materials into conducting, semiconducting and insulating material on the basis of their atomic structure. (CO1)

Q.37 Write note on : (CO5,6)

a) Transformer oil

b) Hard magnetic materials

Q.38 Explain the thermoplastic resin and thermosetting plastic resin along with examples, their properties and uses. (Co3)

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