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Roll No. /030931/117531

Electrical Engg

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 Brushes of dc machines are made up of (CO7)
a) cast iron b) Silicon Steel
c) carbon d) Copper

Q.2 Conduction band in insulating materials is (CO3)
a) filled b) empty
c) partly filled d) none of above

Q.3 The property of materials by which they can be drawn into wires is known as, (CO2)
a) Ductility b) Creep
c) Malleability d) Elasticity

Q.4 Which is most used semi-conducting material. (CO1)
a) Gold b) Copper
c) Silver d) silicon

Q.5 Solder is an alloy of (CO5)
a) Copper and lead
b) Nickle, copper, zinc
c) Tin and lead
d) Silver, copper, and lead

- Q.6 The common household glass is (CO3)
a) Boro silicate glass b) High Leaded glass
c) Soda lime glass d) High silica glass

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 Most commonly used Overhead transmission line conductor are. (CO2)
a) Copper b) Steel
c) Galvanized iron d) ACSR

Q.10 Class E insulation has a working temperature of $^{\circ}$. (CO3)
a) 90 b) 120
c) 130 d) 180

SECTION-B

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

- Q.11 ACSR stands for _____. (CO2)

Q.12 In a P-type semiconductors, the minority carriers are _____. (CO1)

Q.13 Name any two insulating materials. (CO3,8)

Q.14 Thermocouple is used for measuring _____. (CO5)

Q.15 Name any two hard magnetic material. (Co6)

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- Q.16 Body of the kit kat fuse is made up of _____.(CO5)
Q.17 The magnetic material losses its magnetic properties at _____. (CO6)
Q.18 Write any two properties of Bakelite. (CO3)
Q.19 Nichrome is an alloy of _____ and chromium. (CO2)
Q.20 Armature winding of a d.c machine is made up of _____. (CO7)

SECTION-C

- Note:** Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)
- Q.21 Discuss working of thermocouple with their materials . Mention its important applications. (CO4,5)
Q.22 Explain different factors affecting the resistivity of conducting materials. (CO2)
Q.23 Define super conductivity with two examples and Mention its applications. (CO2,4)
Q.24 What is fuse? Discuss the important properties of a fuse wire. (CO5)
Q.25 Explain why and where Mica are used? (CO3)
Q.26 Explain the process soldering and properties of materials used as solder. (CO5)
Q.27 Define semiconductor. Discuss its engineering applications. (CO1)
Q.28 Classify ferromagnetic materials. Give two examples of each. (CO6)
Q.29 Mention the factors affecting dielectric strength of insulating materials. (CO3)

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- Q.30 Write the properties and applications of copper. (CO2)
Q.31 Make a list of materials used for making the part of transformer. (CO7)
Q.32 Write a short note on Bi-metals and its applications. (CO5)
Q.33 Mention the electrical and chemical properties of insulating material. (CO4)
Q.34 Write the different types of insulating materials with two examples each. (CO3)
Q.35 Define eddy current losses and discuss the factors on which eddy current loss depends. (CO6)

SECTION-D

- Note:** Long answer type questions. Attempt any two questions out of three questions. (2x10=20)
- Q.36 Explain the difference between conducting, semiconducting and insulating material on the basic of their energy bands. (CO1,8)
Q.37 Explain the thermoplastic resin and thermosetting plastic resin with examples, their properties and uses. (CO3,4)
Q.38 Write various engineering materials necessary for fabrication of induction motors along with their part name. Also explain the reasons of using these materials for that particular application. (CO7)
(Note: Course outcome/CO is for office use only)

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