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170931/120931/030931

3rd Sem. / Trade-III Electrical

Subject : Electrical and Electronics Engg. Materials

Time : 3 Hrs. M.M. : 100

SECTION-A

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

(Course Outcome/CO)

Q.1 Silicon and Germinium are the examples of _____ materials (CO-1)

Q.2 Nichrome is an alloy of _____ and chromium (CO-2)

Q.3 Resistivity of steel is _____ (more/less) than copper. (CO-2)

Q.4 In p-type semiconductors, the minority carriers are _____ (CO-3)

Q.5 Good insulating materials have _____ resistance. (CO-4)

Q.6 Dielectric losses decrease with increase in temperature (True/False) (CO-5)

Q.7 Babelite is obtained by the controlled hydrolysis of triacetate solution at a temperature of about 60°C. (True/False) (CO-5)

Q.8 The variation of flux density with magnetising force will be represented by a close loop called _____ loop. (CO-6)

Q.9 A _____ range voltmeter is connected in the circuit of themocouple. (Low/High) (CO-7)

Q.10 The materials used for construction field coil of a d.c. machine is _____ (CO-8)

SECTION-B

Note: Very Short answer type questions. Attempt any ten parts 10x2=20

Q.11 Define energy band? (CO-1)

Q.12 Define bundle conductor? (CO-2)

Q.13 State applications of Nichrome. (CO-2)

Q.14 Name anytwo pentavalent impurities. (CO-3)

Q.15 Write two applications of hygroscopicity? (CO-4)

Q.16 Give any two applications of babelite (CO-5)

Q.17 List type of Mica. (CO-5)

Q.18 State curie temperature? (CO-6)

Q.19 Define eddy current loss? (CO-6)

Q.20 Name two commonly used flux materials. (CO-7)

Q.21 Name the material used in biametallic strip? (CO-7)

Q.22 For what purpose the transformer oil is filled in the transformer tank? (CO-8)

SECTION-C

Note: Short answer type questions. Attempt any eight questions. 8x5=40

Q.23 Explain the classification of materials on the basis of their energy bands. (CO-1)

Q.24 Define superconductor? Give its three applications (CO-2)

Q.25 Enumerate five properties of Copper. (CO-2)

Q.26 Differentiate between intrinsic and extrinsic semiconductor. (CO-3)

Q.27 State characteristics of good insulating materials. (CO-4)

Q.28 Define varnish? Classify it. (CO-5)

Q.29 Differentiate between soft ferrite and hard ferrite. (CO-6)

Q.30 Enumerate permeability? Explain its relations? (CO-6)

Q.31 State the properties of soldering materials. (CO-7)

Q.32 Name the materials used in the manufacture of following parts of machines-

Pole core of d.c. machine, brush of d.c. machine commutator of d.c. machine, bearing of d.c. machine shaft of d.c. machines. (CO-8)

SECTION-D

Note: Long answer type questions. Attempt any three questions. 3x10=30

Q.33 Discuss properties and applications of Tungsten. (CO-2)

Q.34 Define & explain dielectric strength? State the factors affecting it. (CO-4)

Q.35 Explain various types of rubber with their applications. (CO-5)

Q.36 Write short note on

i) C.R.G.O. (Cold Rolled Grain Oriented) silicon steel (CO-6)

ii) Thermo Couple. (CO-7)

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