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4th Sem. Auto. Mech. Prod, T&D, GE,CAD/CAM/CNC, Metallurgy, Found & Forg. Adv. Manuf. Tech., Mech Engg. (Fabrication Tech) Mech Engg. (CAD/CAM Dsgn. & Robotics)
Subject : Materials & Metallurgy/Mat. Sci.

Time : 3 Hrs. M.M. : 100

SECTION-A

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

Q.1 The ability of the material to resists fracture due to high impact loads is. (C0-2)

a) Toughness b) Hardness
c) Brittleness d) None of these

Q.2 Which of the following is a non-metal? (C0-1)

a) Iodine b) Graphite
c) Carbon d) All of the above

Q.3 Number of atoms shared by a unit cell of FCC crystal structure

a) 1 b) 2
c) 4 d) 6

Q.4 Which of the following is a case hardening Process

a) Annealing b) Nitriding
c) Tempering d) None

Q.5 Which of the following is a thermoplastic material

a) Wood b) Iron
c) PVC d) Clay

Q.6 Plastic deformation may take place due to. (C0-4)

a) Slip only b) Twinning only
c) Slip or Twining d) None of these

Q.7 Which of the following is an example of solid solution alloy? (C0-4)

a) Au-Ag b) Au-Pt
c) Cu-Ni d) Al of these

Q.8 The best quality of steel is produced in (C0-4)

a) Cupola b) Bessemer
c) Induction Furnace d) Open hearth furnace

Q.9 Hook's law holds good upto. (C0-3)

a) Limit of proportionality b) Elastic limit
c) Yield point d) Breaking point

Q.10 Polythene and PVC are manufactured by the process of. (C0-6)

a) Addition condensation
b) Co-polymerization
c) Condensation polymerization
d) None of these

SECTION-B

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

Q.11 In grey cast iron.....present act as lubricant. (C0-1)

Q.12 Lack of ductility is called..... (C0-1)

Q.13 Name any two Iron ores. (C0-2)

Q.14 What is a Semi - Conductor? (C0-7)

Q.15 Define Asbestos. (C0-6)

Q.16 The smallest components of space lattice is known as..... (C0-2)

Q.17 Define ceramics. (C0-5)

Q.18 Carburizing is not a surface hardening process. (True/ False) (C0-3)

Q.19 Lustre is a physical property (True/ False) (C0-2)

Q.20 In iron carbon diagram lower critical temperature is..... (C0-4)

SECTION-C

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

Q.21 What is metal/ What are its different types? (C0-1)

Q.22 Differentiate between ferrous metals and non-ferrous metals. (C0-2)

Q.23 Write the uses of plastic.(any five) (C0-3)

Q.24 Write any five advantages of composite materials. (C0-6)

Q25 Write the properties of high speed steel. (C0-4)

Q.26 State the forms of carbon present in cast iron. (C0-2)

Q.27 Describe the desired properties of bearing materials. (C07)

Q.28 Differentiate between Slip and Twinning. (C0-3)

Q.29 Explain nuclear energy materials. (C0-5)

Q.30 What is Ceramics? Classify Ceramics also write its properties? (C0-6)

Q.31 Define any five physical properties of materials. (C0-1)

Q.32 Explain Thermoelectric Pyrometer with neat diagram. (C0-6)

Q.33 Explain the effect of Grain size on the properties of materials. (C0-2)

Q.34 Write short note on body centred cubic. (C0-2)

Q.35 Draw cooling curve of a pure metal. (C0-3)

SECTION-D

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

Q.36 Explain T.T.T. diagrams. (C0-5)

Q.37 Describe cast iron and its types. (C0-2)

Q.38 What are smart materials? What are their different types? Explain. (C0-6)