

Q.22 What is a composite material? Write its applications.
(CO5)

SECTION-D

Note: Long answer type questions. Attempt any two questions out of three questions. (2x8=16)

Q.23 Explain the process of Annealing and Normalising.
(CO6)

Q.24 Explain Iron Carbon Phase Diagram with a neat sketch.
(Co4)

Q.25 Write short notes on (CO6)

- a) Flame Hardening
- b) Carburizing

(40)

(4)

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2nd Year / Advance Diploma in Tool and Die Making

Subject : Material Science and Heat Treatment

Time : 3 Hrs.

M.M. : 60

SECTION-A

Note: Multiple choice questions. All questions are compulsory (6x1=6)

Q.1 The compressive strength of cast iron is _____ that of its tensile strength. (CO1)

- a) Equal to
- b) Less than
- c) More than
- d) None of these

Q.2 The ratio of the volume occupied by the atoms to the total volume of the unit cell is called (CO2)

- a) Coordination number
- b) Atomic packing factor
- c) Space lattice
- d) None of these

Q.3 Dislocations in materials refer to the following type of defect (CO2)

- a) Point defect
- b) Line defect
- c) Plane defect
- d) Volumetric defect

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- Q.4 The toughness of a material _____ when it is heated. (CO4)
- a) Remain same b) Decreases
c) Increases d) None of these

- Q.5 The material in which the atoms are arranged chaotically, is called (CO2)
- a) Amorphous material
b) Mesomorphous material
c) Crystalline material
d) None of these

- Q.6 An eutectoid steel consists of (CO3)
- a) Wholly pearlite
b) Wholly austenite
c) Pearlite and ferrite
d) Pearlite and cementite

SECTION-B

Note: Objective/ Completion type questions. All questions are compulsory. (6x1=6)

- Q.7 Muntz metal have _____ composition. (CO5)
- Q.8 Slip represents _____ deformation of the crystal. (CO2)
- Q.9 The white cast iron contains carbon in the form of _____. (CO4)
- Q.10 Fast quenching of steel in water from austenite temperature forms _____. (CO3)

- Q.11 Ductility of metal is a property related to _____. (CO1)

- Q.12 Hardenability is tested by _____. (CO6)

SECTION-C

Note: Short answer type questions. Attempt any eight questions out of ten questions. (8x4=32)

- Q.13 Define Work Hardening and Twinning. (CO2)
- Q.14 What is stool steel? What are the types of Toolsteel? (CO7)
- Q.15 Distinguish between Crystalline and Amorphous solids. (CO2)
- Q.16 Explain the effects of grain size on the properties of metals. (CO3)
- Q.17 Explain Miller indices and bravais lattice. (CO2)
- Q.18 What are the properties and applications of High-speed steel. (CO7)
- Q.19 Differentiate between Grey Cast Iron and White Cast Iron. (CO6)
- Q.20 Write a short note on Powder metallurgy. (CO5)
- Q.21 What are plastics? Explain Thermoplastics and thermosetting plastics. (CO5)