

- Q.23 Write short notes on Creep and Fatigue.
- Q.24 Explain Co-ordination number of various crystal systems.
- Q.25 What is dendritic solidification of metals?
- Q.26 Explain Phase Rule in detail.
- Q.27 Write general characteristics and uses of composite material.
- Q.28 Give classification of steel.
- Q.29 What is hardening? Write its benefits.
- Q.30 Describe the manufacturing of Cast iron in Cupola furnace.
- Q.31 Write any five properties of High Speed Steel.
- Q.32 Explain Phase diagram for stainless steel.
- Q.33 Explain the purpose and procedure of the following
a) Annealing b) Surface Hardening
- Q.34 Write short note on refractory materials.
- Q.35 Explain briefly about Thermal insulating materials.

SECTION-D

- Note:** Long answer type questions. Attempt any two questions out of three questions. (2x10=20)
- Q.36 Explain the difference between:
a) Elastic limit and proportional limit
b) Yield point and ultimate stress.
- Q.37 Explain Iron-Carbon diagram with neat diagram.
- Q.38 What is a Solid solution alloy? What are its different types? Explain.

No. of Printed Pages : 4

202014

Roll No.

1st Year / Advance Diploma in Tool and Die Making Subject:- Material Science

Time : 3Hrs.

M.M. : 100

SECTION-A

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

- Q.1 The property of the material by virtue of which it can be rolled into thin sheet is called
a) Malleability b) Plasticity
c) Ductility d) toughness
- Q.2 No. of atoms per unit cell in S.C., F.C.C. and B.C.C. crystal structures are
a) 1,4,2 b) 1,2,4
c) 4,2,1 d) 1,2,3
- Q.3 The value of co-ordination number for simple cubic structure is
a) 6 b) 8
c) 12 d) 14
- Q.4 A physically homogenous distinct portion of a system is called
a) Component b) constituent
c) Phase d) all of the above

- Q.5 A thermal equilibrium diagram is also known as
- Phase diagram
 - constitutional diagram
 - both (a) and (b)
 - Neither (a) nor (b)
- Q.6 Which is the primary element used for making stainless steel alloy?
- Chromium
 - Zirconium
 - Vanadium
 - Indium
- Q.7 Which of the following is an alloy?
- Gold
 - silver
 - Aluminium
 - brass
- Q.8 Coal used in cupola is
- Charcoal
 - Coke
 - Cooking coal
 - pulverized coal
- Q.9 Pearlite steel has carbon content
- 0.8%
 - 1.8%
 - 2%
 - 6.67%
- Q.10 A steel with carbon_____ is called hypo eutectoid steel.
- 0.8%
 - above 0.8%
 - Below 0.8%
 - none of the above

SECTION-B

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

- Q.11 When a doped semiconductor contains excess free electrons, then it is called" _____ semiconductor"
- Q.12 Conductors have very high electrical resistivity. (True/False)
- Q.13 A_____ is the separation of an object or material into two or more pieces under the action of stress.
- Q.14 The plastic deformation is the permanent deformation.
- Q.15 A solid solution is a single phase system. (True/False)
- Q.16 Hematite contains about_____ iron.
- Q.17 The spring steels are used under compression, tension and torsion.
- Q.18 The major alloying elements in stainless steels are_____. And_____.
- Q.19 Full Annealing process is performed to refine grain structure. (True/False)
- Q.20 Dolomite is a type of limestone that is high in_____

SECTION-C

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

- Q.21 Explain how Plastic Deformation occurs?
- Q.22 Explain any four electrical properties of materials.