Q.29 Explain heat treatment. List its application.

Q.30 Explain Allotropic forms of Iron with Diagram.

Q.31 Write the advantages of Pack carburizing.

Q.32 What is the classification Iron?

Q.33 Define Normalizing. Explain its procedure.

Q.34 Write the Properties of High speed steel.

Q.35 What is the requirement of heat treatment furnace?

Section-D

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

Q.36 Explain T.T.T. Diagram in brief.

Q.37 Classify heat treatment Furnaces and explain any one of them in detail with its diagram.

Q.38 Explain Iron Carbon Equilibrium diagram with its neat labeled diagram.

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5th Sem., Branch : T&D Found & Forg
Subject : Heat Treatment

Time : 3 Hrs. M.M. : 100

SECTION-A

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

Q.1 _____ structure is obtained if steel is Quenched in water.

a) Sorbite b) Martensite
c) Troostite d) None of the above

Q.2 _____ gives maximum hardness to the surface

a) Nitriding b) Cyaniding
c) Pack carburizing d) None of the above

Q.3 A steel with carbon _____ is called hypoeutectiod steel.

a) 0.8% b) Above 0.8%
c) Below 0.8% d) None of the above

Q.4 The object of annealing is

a) To soften the metal
b) To refine grain structure
c) To relive internal stresses
d) All of the above

Q.5 Sorbite is obtain when

a) Steel is quenched b) Steel is annealed

c) Steel is hardened d) None of the above

Q.6 Which of the following iron exists between 910 deg C and 1400 degC?

a) Alpha -Iron b) Beta Iron

c) Gamma Iron d) Delta Iron

Q.7 Iron-Carbon alloy with 2 to 4.3% carbon is known as

a) Entectic cast iron

b) Hypo eutectic case iron

c) Hyper eutectic cast iron

d) None of above

Q.8 In pack carburizing carbon is supplied

a) Through gas

b) In form of charcoal

c) In the foarm of hydrocarbon

d) None of these

Q.9 Austenite is a solid solution of carbon in

a) Alpha iron b) Gamma Iron

c) Delta iron d) None of the above

Q.10 NItriding is a process for

a) Annealing b) Normalizing

c) Case hardening d) None of the above

Section-B

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

Q.11 Delta iron is also knows as _____.

Q.12 Define Martensite.

Q.13 What is a Fe_3C called?

Q.14 Define density of material.

Q.15 What is the material of Axel?

Q.16 Write any two Application of Carburizing.

Q.17 Give the purpose of Optical Pyrometers in metallurgy.

Q.18 Write the purpose of Tempering?

Q.19 What is cyaniding?

Q.20 What is the boiling point of iron?

Section-C

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

Q.21 Write any five applications of heat treatment.

Q.22 Explain the working of Thermo-electrical Pyrometer.

Q.23 Define any five micro constituents of iron and steel.

Q.24 Explain the concept of Flame hardening.

Q25 Write a short note on Low carbon steel.

Q.26 What is a quenching? Write its purposes?

Q.27 Explain Electric Furnace in detail.

Q.28 Explain the following :

a) Quenching cracks b) Soft spots