

No. of Printed Pages : 4
Roll No.

202022

2nd Year / Advance Diploma in Tool and Die Making
Subject : Heat Treatment

Time : 3 Hrs.

M.M. : 50

SECTION-A

Note: Multiple Choice questions. All questions are compulsory. (5x1=5)

- Q.1 Sorbite is obtained when
- a) steel is quenched b) steel is annealed
 - c) steel is hardened d) none of the above
- Q.2 While hardening of steel, the component is cooled in
- a) still air b) water or oil
 - c) furnace d) none of the above
- Q.3 The object of annealing is
- a) To soften the metal
 - b) To refine grain structure
 - c) To relieve internal stresses
 - d) All of the above

Q.4 Hyper-eutectic cast iron contains _____ 4.3%

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

Q.5 The essential constituent of a hardened steel is

- a) Martensite
- b) Troostite
- c) Pearlite
- d) All of the above

SECTION-B

Note: Objective type questions. All questions are compulsory. (5x1=5)

Q.6 Jominy test is a methods of measuring the _____ of steel.

Q.7 Normalising is used to _____ the structure of steel.

Q.8 If Steel is cooled in still air, the micro structure obtained is sorbite (True/False)

Q.9 Case hardening process is for nitriding

- a) True
- b) False

Q.10 In heat treatment, the metal and alloy are holding at _____ phase.

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SECTION-C

Note: Short answer type questions. Attempt any six questions out of Eight questions. (6x5=30)

Q.11 Define Hardenability and write its application.

Q.12 Explain Various steps in process of flame hardening.

Q.13 What is tempering? What is the purpose of tempering?

Q.14 How will you classify the tool steel?

Q.15 Define cast iron also list the different type of cast iron.

Q.16 Write a short note on thermo-chemical treatment.

Q.17 Enlist the various Objective of heat treatment.

Q.18 What are various requirements of a heat treatment furnace?

SECTION-D

Note: Long answer type questions. Attempt any one questions out of two questions. (1x10=10)

Q.19 What is heat treatment furnace? Classify its different type? Explain any two.

Q.20 Describe transformation into various phases of steel with help of TTT curve.

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