Q.17 Explain flame hardening processes? (CO5)

Q.18 Define Iron-carbon diagram and give its applications. (CO2)

SECTION-D

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

Q.19 Explain various defects, their causes and prevention in the heat treatment processes. (CO2)

Q.20 Explain Time-Temperature - Transformation (TTT) curve in detail. (CO3)

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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 Which of the following properties gets affected due to heat treatment? (CO1)

a) Hardness b) Ductility

c) Strength d) All of the above

Q.2 A given component is cracked after heat treatment. What may be the possible reason (CO9)

a) Cooled slowly in air

b) cooled suddenly in brine solution

c) not cleaned properly

d) None of these

Q.3 Which of the following has carbon percentage 4.3 to 6.67 (CO7)

a) Cast Iron b) Pig Iron

c) Dead Iron d) None of these

Q.4 On Annealing, eutectoid converts to_____ (CO2)

a) Martensite b) Pearlite

c) Cementite d) Austenite

Q.5 Cyaniding and Nitriding are the two methods of _____ (CO5)

a) Case Herdening b) Annealing

c) Normalizing d) Tempering

SECTION-B

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

Q.6 Cast steel crankshaft surface is hardened by _____ heating. (CO5)

Q.7 _____ hardening is a method of producing hard skin on the low carbon steel. (CO3)

Q.8 In 18-4-1 tool steel 4 is related to _____ (CO6)

Q.9 Lower critical point for all steel is at temperature _____ (CO2)

Q.10 The process of heat treatment, Quenching improves ductility. (True/False) (CO4)

SECTION-C

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

Q.11 Differentiate between Annealing and Normalizing (CO4)

Q.12 Describe the method of consumable disposals in heat treatment. (CO9)

Q.13 Discuss the concept the transformation at constant temperature. (CO3)

Q.14 Explain the effects of different alloying elements on tool steel? (CO6)

Q.15 Explain briefly Cast Iron and its type? (CO2)

Q.16 Discuss the principle of heat treatment for cast iron, malleable iron and spheroidal cast iron (CO7)