

(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 1120 Roll No.

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B. Tech

(Semester-I) Theory Examination, 2012-13

MANUFACTURING SCIENCE

Time : 3 Hours]

[Total Marks : 80

Note : Attempt questions from all Sections as per instructions.

Section-A

1. Attempt *all* parts of this question. Each part carries 2 marks. 2×8=16

- (a) Define Stress and Strain.
- (b) What is tool steel ?
- (c) What is hot working ?
- (d) What is Moulding ?
- (e) What is counter boring ?
- (f) What is facing operation ?
- (g) What is straight and reverse polarity ?
- (h) Mention die design parameters in case of forging.

- (i) What is meant by plant layout and mention various types?
- (j) Mention four advantages of powder metallurgy.

Section-B

2. Attempt any *three* parts of this question. Each part carries 8 marks. $8 \times 3 = 24$

(a) Define the following mechanical properties :

- (i) Elasticity
- (ii) Ductility
- (iii) Toughness
- (iv) Hardness
- (v) Malleability.

(b) What is the important of heat treatment and explain :

- (i) Annealing
- (ii) Normalizing
- (iii) Case harden process in detail.

(c) In detail explain Gating System.

(d) With a neat sketch explain Double housing planner.

(e) Explain Blending, Compacting and Sintering.

Section-C

Attempt *all* questions. Each question carries 8 marks.

$$8 \times 5 = 40$$

3. Attempt any two parts : $4 \times 2 = 8$
- (a) Write a note on :
- (i) Creep
 - (ii) Fatigue.
- (b) Write a note on Alloy Steel, Wrought iron in detail.
4. Attempt any one part : $8 \times 1 = 8$
- (a) Explain various Rolling mills with neat sketches.
- (b) With neat sketch explain various zones of Cupola Furnace.
5. Attempt any one part : $8 \times 1 = 8$
- (a) With neat sketch of a lathe label the parts.
- (b) With neat sketch explain the working principle of Radial Drilling Machine.
6. Attempt any one part : $8 \times 1 = 8$
- (a) Mention the objectives of plant layout.
- (b) (i) Mention the advantages of powder metallurgy.
- (ii) Write a note on materials required for processing plastics.

7. Attempt any two parts : $4 \times 2 = 8$

- (a) Differentiate Welding, Soldering and Brazing ?
- (b) Explain the Hydrostatic Extrusion.
- (c) Explain the Product Layout.

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