



CBCS SCHEME

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Fifth Semester B.E. Degree Examination, Dec.2019/Jan.2020
Metal Forming

Time: 3 hrs.

Max. Marks: 80

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

- 1 a. Explain Tresca and Von Mises Yield Criteria. (07 Marks)
b. State the characteristics of Wrought Product. (04 Marks)
c. List the advantages and limitations of Metal Working Process. (05 Marks)

OR

- 2 a. Explain the following Parameters which affects Metal Working Process :
i) Temperature ii) Strain rate iii) Friction. (12 Marks)
b. Write a note on Deformation Zone Geometry. (04 Marks)

Module-2

- 3 a. With a neat sketch, explain the working of board drop hammer. (07 Marks)
b. List and explain briefly the die design Parameters in forging dies. (05 Marks)
c. Explain the Probable defects obtained in forging. (04 Marks)

OR

- 4 With a neat sketch, explain the following :
a. Two high mill b. Cluster mill c. Three high mill d. Planetary mill. (16 Marks)

Module-3

- 5 a. Explain Optimal cone angle and dead zone formation in drawing. (05 Marks)
b. What is redundant work in drawing and How it is estimated? (06 Marks)
c. With a neat sketch, explain following tube drawing process :
i) Tube sinking (Tube drawing without mandrel).
ii) Tube drawing with fixed mandrel. (05 Marks)

OR

- 6 a. Explain with sketch, the Direct extrusion and Indirect extrusion process. (06 Marks)
b. Explain with neat sketch, the following Extrusion process :
i) Hydrostatic extrusion ii) Cold extrusion. (06 Marks)
c. Explain the defects occurred in Extrusion Product. (04 Marks)

Module-4

- 7 a. With a neat sketch, explain briefly :
i) Progressive die ii) Combination die. (06 Marks)
b. With a neat sketch, explain Open back Inclined Press. (06 Marks)
c. Write a short note on Blanking and Piercing Operation. (04 Marks)

OR

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg. 42+8 = 50, will be treated as malpractice.

- 8 a. Define Limiting draw ratio and Explain the effect of Anisotropy on LDR. (05 Marks)
b. Explain Die and Punch design Parameters in Deep drawing. (06 Marks)
c. Explain the defects occurred in deep drawn products. (05 Marks)

Module-5

- 9 a. Discuss with flow chart Powder Metallurgy Process. (08 Marks)
b. Explain the different methods used for the Production of Metal Powders in Powder Metallurgy. (08 Marks)

OR

- 10 a. With a neat sketch, explain the following Forming methods : (10 Marks)
i) Explosure forming ii) Electromagnetic forming. (06 Marks)
b. List the advantages , limitations and application of Powder Metallurgy. (06 Marks)
