

GBCS SCHEME

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18ME825

Eighth Semester B.E. Degree Examination, June/July. 2023 Tool Design

Time: 3 hrs.

Max. Marks: 100

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

Module-1

- 1 a. What are the steps involved in the design of a tool? Describe in brief. (10 Marks)
b. What do you mean by Chip breaker? What are the advantages and disadvantages of chip breaker? (05 Marks)
c. List the objectives of tool design. (05 Marks)

OR

- 2 a. With a sketch, explain the basic elements of design of single point cutting tool. (10 Marks)
b. Explain desirable properties of tool materials and also list the tool materials in increasing order of their hardness. (10 Marks)

Module-2

- 3 a. What are the important elements to be considered while designing a milling cutter? Explain any two. (10 Marks)
b. Draw a twist Drill point and show the important points. Also explain dead center. (10 Marks)

OR

- 4 a. Explain the different types of tool holders used for milling. (10 Marks)
b. Briefly explain the selection of tool geometry in designing the milling cutter. (10 Marks)

Module-3

- 5 a. List the differences between Jig and Fixture. (05 Marks)
b. With a neat sketch, explain the 3 – 2 – 1 principle for locating rectangular work piece. (08 Marks)
c. What are clamping principles? Explain a toggle type clamp with a neat sketch. (07 Marks)

OR

- 6 a. Explain a milling fixture with a neat sketch. (10 Marks)
b. What are the essential points to be considered for a lathe fixture? Explain with sketch. (10 Marks)

Module-4

- 7 a. Define the following press operations :
i) Blanking ii) Punching iii) Notching iv) Lancing v) Parting. (10 Marks)
b. What is centre of pressure? Describe the general method for finding the center of pressure of a contour. (10 Marks)

OR

- 8 a. Explain spring back with a neat sketch. What are the methods used to overcome spring back? (10 Marks)
- b. Briefly classify the different types of power press and explain any 2 of them. (10 Marks)

Module-5

- 9 a. List the factor affecting drawing process and explain any two briefly. (10 Marks)
- b. What are the advantages and disadvantages of die casting? (04 Marks)
- c. What are the composition of the following : (06 Marks)
- i) Zn alloy ii) Al alloys iii) Cu base alloy.

OR

- 10 a. Define the following terms : (10 Marks)
- i) Spruce ii) Gate iii) Runner iv) Ejector v) Nozzle.
- b. Briefly classify the methods of Die casting and explain any 2 of them with a neat sketch. (10 Marks)

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