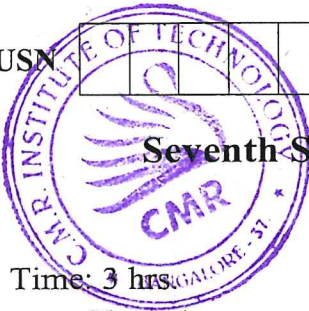


CBCS SCHEME

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17ME744



Seventh Semester B.E. Degree Examination, Jan./Feb. 2021

Design for Manufacturing

Time: 3 hrs

Max. Marks: 100

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

Module-1

- Briefly explain the phases of design. (08 Marks)
 - Explain:
 - Cost per unit property method (06 Marks)
 - Weighted property method. (06 Marks)
 - List the guidelines for design for manufacturability. (06 Marks)

OR

- Explain briefly the relationship between attainable tolerance grades and machining processes. (06 Marks)
 - Explain i) C_p ii) C_{pk} (08 Marks)
 - Briefly explain the cumulative effect of tolerance. (06 Marks)

Module-2

- Differentiate between selective Assembly and Interchangeability. (08 Marks)
 - Briefly explain the procedure to decide number of groups-Model 1. (08 Marks)
 - Explain the use of Laminated shims. (04 Marks)

OR

- Compare between coordinate and True position method of feature location and explain in detail. (10 Marks)
 - Explain: i) Floating fasteners ii) Fixed fasteners. (10 Marks)

Module-3

- Briefly explain Functional Datum and Manufacturing Datum. (10 Marks)
 - For the Pin component shown in Fig.Q.5(b), obtain the manufacturing sequence and manufacturing limits. (10 Marks)

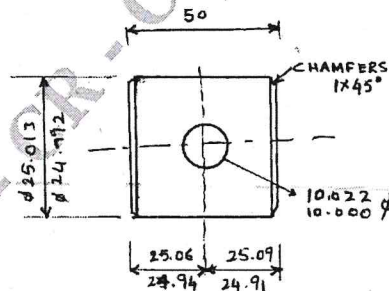


Fig.Q.5(b)

OR

- 6 a. With a neat sketch, explain the design features for reduction of machined areas. (10 Marks)
b. With neat sketch, explain simplification by separation. (10 Marks)

Module-4

- 7 a. Explain: i) Mold ii) Parting line. (10 Marks)
b. With a neat sketch, explain the process of identifying parting line with any example. (10 Marks)

OR

- 8 a. What are the requirements for welding consideration? (10 Marks)
b. With neat sketch, explain the design guidelines for welding. (10 Marks)

Module-5

- 9 a. What are the design guidelines for forging? (08 Marks)
b. List and explain steps in powder metallurgy. (08 Marks)
c. What are the guidelines for redesigning components by powder metallurgy? (04 Marks)

OR

- 10 a. Briefly explain working of injection molding. (10 Marks)
b. List and explain the guidelines of injection molding. (10 Marks)

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