

Reg. No.

Question Paper Code

11960

M.E. / M.Tech. - DEGREE EXAMINATIONS, APRIL/MAY 2023

Second Semester

M.E - CAD / CAM

20PCDPC201 - DESIGN FOR MANUFACTURE, ASSEMBLY AND ENVIRONMENTS

(Regulations 2020)

Duration: 3 Hours

Max. Marks: 100

PART - A (10 × 2 = 20 Marks)

Answer ALL Questions

- | | <i>Marks,
K-Level, CO</i> |
|--|-------------------------------|
| 1. Name few evaluation methods used during manufacturing process. | 2,K1,CO1 |
| 2. What is a geometric tolerance? | 2,K2,CO1 |
| 3. What the design stages involved in designing a car door? | 2,K2,CO2 |
| 4. List out the stages involved in selecting a material. | 2,K1,CO2 |
| 5. List the types of milling cutters. | 2,K2,CO3 |
| 6. State the difference between machinability and capability. | 2,K1,CO3 |
| 7. Name any four challenges in die casting. | 2,K1,CO3 |
| 8. What is meant by true position tolerance? | 2,K2,CO3 |
| 9. List the factors to be considered for design for environmental manufacturing. | 2,K2,CO3 |
| 10. List the steps involved in recyclability. | 2,K2,CO3 |

PART - B (5 × 13 = 65 Marks)

Answer ALL Questions

11. a) Discuss the strength and mechanical factors involved during manufacturing. 13,K2,CO1
- OR**
- b) Explain in detail the methods used to evaluate the process capability. 13,K2,CO1
12. a) Discuss the stages involved and the advantages and disadvantages in manufacturing a form designed process. 13,K2,CO2
- OR**
- b) Explain how form design affects the forging process. 13,K2,CO2
13. a) Explain the design features to facilitate machining of drills and end 13,K2,CO3

K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze; K5 – Evaluate; K6 – Create

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mill cutters with a neat sketch.

OR

b) Describe briefly the designing process involved in designing a product economically. *13,K2,CO3*

14. a) Discuss possible and portable parting line in casting processes with suitable example. *13,K2,CO4*

OR

b) Explain the computer applications of DFMA. *13,K2,CO4*

15. a) Describe in detail about the design to minimize the material usage in design. *13,K2,CO5*

OR

b) Explain design rules and suggestions for modifying design. *13,K2,CO5*

PART - C (1 × 15 = 15 Marks)

16. a) Summarize the factors considered in design for manufacturing, assembly and environments. *15,K2,CO4*

OR

b) What are the general problems should come across while designing for machining operations? Explain how one can overcome those problems. *15,K2,CO3*