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Question Paper Code : 70286

M.E./M.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2019

Second Semester

CAD/CAM

CC 5291 – Design for Manufacture, Assembly and Environments

(Common to M.E. Computer Aided Design/M.E. Engineering Design/M.E. Product Design and Development)

(Regulations 2017)

Time : Three Hours

Maximum : 100 Marks

Answer ALL questions

PART – A

(10×2=20 Marks)

1. Draw the five symbols of Geometric Tolerances.
2. Define tolerance stack.
3. List the factors involved in form design.
4. What are steps involved in Material Choice ?
5. Define Machinability.
6. Differentiate between clampability and accessibility.
7. What are the barriers to implement Group Technology ?
8. Mention any two computer application for DFMA.
9. State the objectives of environmental design.
10. List the steps involved in Recycalability.

PART – B

(5×13=65 Marks)

11. a) With the suitable example, explain the design principles for manufacturability. (13)
(OR)
b) Explain in detail about the assembly limits, datum features and tolerance stack. (13)

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12. a) Explain in detail about the influence of material in form design. (13)
(OR)
b) Explain the form design of welded and forged members with suitable example. (13)
13. a) Explain the design features to facilitate machining of drills and end mill cutters with sketches. (13)
(OR)
b) Illustrate the reduction of machined area by simplification by separation with suitable sketch. (13)
14. a) Explain the method of redesigning of castings based on parting line. (13)
(OR)
b) List the methods in identification of uneconomical design and explain with sketches. (13)
15. a) Define DFE. Describe the design guidelines for DFE. (13)
(OR)
b) List and explain techniques used to reduce environment impact. (13)
- PART - C (1×15=15 Marks)
16. a) Is DFMA improved with assistance of computer ? Justify your answer with suitable example. (15)
(OR)
b) Summarize the factors considered in design for manufacturing, assembly and environment. (15)