R09

Code No: C3304, C0404, C5204

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
M.Tech I - Semester Examinations, March/April -2011
DESIGN FOR MANUFACTURING ASSEMBLY
(ADVANCED MANUFACTURING SYSTEMS, CAD/CAM, DESIGN FOR MANUFACTURING)

Time: 3hours **Max. Marks: 60**

Answer any five questions
All questions carry equal marks

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1.(a) Draw the schematic diagram of the basic elements of a design process and explain them briefly.
(b) Distinguish between design for manufacturing and detailed design explaining the various terms involved. [12]

2.(a) As a design engineer discuss the relationship between material selection and process selection for a given component.
(b) With an example explain process selection chart, state the advantages of this chart. [12]

3.(a) Explain with a suitable example the steps in improving the design of a component from the point of view of machining.
(b) Discuss the general design guidelines for drilling. [12]

4.(a) Explain the importance of solidification simulation in casting design?
(b) Compare product design rules for sand casting with general design rules? [12]

5.(a) Explain the chief factors in the design of a weldment.
(b) Discuss the effects of thermal stresses in welding. [12]

6.(a) With a neat sketch explain design of closed die forging design and drop forging die design?
(b) Explain various material s used for forging dies with their advantages. [12]

7.(a) Discuss the important design recommendations for joining of plastics.
(b) Explain the design considerations for regard to important mechanical properties. [12]

8. Explain the following operations with their applications?
i) Punching
ii) Bending
iii) Blanking
iv) Deep Drawing

[12]

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