

B.E. 4/4 (Mech/Prod.) I-Semester (Supplementary) Examination, June / July 2011

Subject : **Design for Manufacture** (Elective-I)

Time : 3 Hours

Max. Marks: 75

**Note:** Answer all questions from Part-A and answer any **Five** questions from Part-B.

**PART - A** (25 Marks)

1. What do you mean by concurrent engineering?
2. What are the effects of geometric tolerances on manufacturability?
3. Name the suitable materials for extrusion process.
4. What do you mean by ram and press bending?
5. What do you mean by retention in case of assembly design?
6. What are the applications of investment casting process?
7. What do you mean by plasma arc welding?
8. How to improve weld strength?
9. What do you mean by retention of assembled parts?
10. What do you mean by QFD?

**PART - B** (5 x 10 = 50 Marks)

- 11.a) State and explain any five design principles for strength selection.  
b) State and explain typical characteristics of stainless steel shapes with diagrams.
- 12.a) What are the typical characteristics and applications of extruded parts?  
b) State and explain the design recommendations of electro forming process with diagrams.
- 13.a) Explain the die casting processes with their applications and economics.  
b) Explain the basic elements of die-sinking and wire EDM with the help of diagrams.
- 14.a) State and explain the design recommendations of injection moulding parts.  
b) Explain the plastics welding processes with the help of diagrams.
- 15.a) State and explain the design recommendations of computer aided manufacture parts.  
b) State and explain the design recommendations of bolted connection assemblies.
- 16.a) Explain the characteristics and applications of surface finished parts.  
b) State and explain the design recommendations of press fitted parts.
17. Write short notes on any **Four** of the following :
  - a) Bearing assembly design
  - b) Rolled finished parts
  - c) Spring and wire forms
  - d) Four slide parts
  - e) Shot-peened surfaces