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**Question Paper Code : 10406**

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2012.

Third Semester

Mechanical Engineering

ME 2201/114306/ME 32/10122 ME 302/PR 1204/080120005 – MANUFACTURING  
TECHNOLOGY – I

(Regulation 2008)

Time : Three hours

Maximum : 100 marks

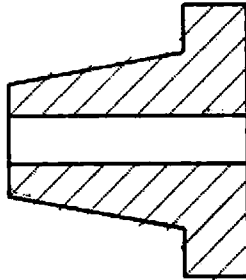
Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. State any four types of pattern.
2. What are the causes for the formation of blow holes in the sand casting?
3. What are the functions of flux in welding electrode?
4. What are the types of adhesives used in adhesive bonding?
5. Distinguish between hot working and cold working of metals.
6. Define extrusion, as a manufacturing process.
7. What is the spring back effect in sheet metal component?
8. What are the advantages of hydro forming process?
9. Name two adhesives that are used for adhesive bonding of plastics.
10. What is film blowing?

## PART B — (5 × 16 = 80 marks)

11. (a) Figure shows the cross section of a conical component (having a Flange and an axial hole).



Describe briefly, with sketches, the steps involved in making a sand mould to cast this component. Sketch also the shape of the casting as soon as it is removed from the mould. (16)

Or

- (b) (i) Explain the various steps involved in 'Lost wax process', with suitable sketches. (8)
- (ii) Write short notes on the following:
- (1) Ceramic mould (4)
  - (2) Centrifugal casting. (4)
12. (a) With the help of suitable diagrams, explain the following types of welding:
- (i) TIG welding process. (8)
  - (ii) Electro slag welding process. (8)

Or

- (b) (i) What is the principle of thermit welding? Explain the same with a neat sketch of the welding arrangement. (8)
- (ii) Explain the principle of operation, advantages and limitations of electron beam welding. (8)
13. (a) (i) With a neat sketch, explain the working of a Pneumatic hammer for forging. (10)
- (ii) List four tools used for forging. Sketch any two of them. (6)

Or

- (b) (i) With neat sketches, explain the different types of roll stand arrangements used in the rolling mills. (6)
- (ii) State clearly for what purpose each arrangement is used. (4)
- (iii) With a neat sketch, explain the principle used in tube drawing process. (6)
14. (a) Describe with illustrative sketches, the following sheet metal operations : (4 × 4 = 16)
- (i) Bending edge of a sheet using wiping-die.
- (ii) Roll bending.
- (iii) Stretch forming.
- (iv) Deep drawing.

Or

- (b) (i) With a neat sketch, explain the rubber pad forming process. How does it differ from rubber hydro forming process? (8)
- (ii) Describe the metal spinning process with a neat sketch and state its advantages and specific uses. (8)
15. (a) Illustrate with a suitable sketches, the working principles of (i) plunger type plastic injection moulding machine (ii) screw type plastic injection moulding machine. (16)

Or

- (b) (i) Explain the various steps required to manufacture a plastic bottle using blow moulding process, with neat sketches. (8)
- (ii) What is 'Rotational moulding'? Explain the same with necessary sketch. Mention also its applications. (8)