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Question Paper Code : 51844

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2016

Third Semester

Mechanical Engineering

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

**(Common to Industrial Engineering, Industrial Engineering and Management,
Mechanical and Automation Engineering and Fifth Semester Mechanical Engineering
(Sandwich))**

(Regulations 2008/2010)

**(Common to 10122 ME 302 – Manufacturing Technology – I for B.E. (Part-Time) Second
Semester – Mechanical Engineering – Regulations 2010)**

Time : Three Hours

Maximum : 100 Marks

Answer ALL questions.

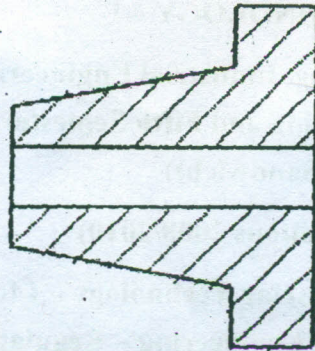
PART – A (10 × 2 = 20 Marks)

1. State any four types of pattern.
2. What are the causes for the formation of blow holes in the sand casting ?
3. What is the purpose of flux in welding ?
4. Write short notes on thermit welding.
5. Working on the metal Lead at room temperature, is considered to be hot working. Why ?
6. List two advantages of cold extrusion over hot extrusion.

7. Define spring back.
8. Why is it necessary to provide proper clearance between the punch and die in a shearing operation?
9. What are reinforced plastics and where is it applied ?
10. What are the industrial uses of fibres and filaments ?

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 : (8)
- (1) Ceramic mould
 - (2) Centrifugal casting.

12. (a) (i) Differentiate electro gas welding and electro slag welding with its principles and applications. (8)
- (ii) Explain the gas metal arc welding processes with neat sketch and its process capabilities. (8)

OR

- (b) Explain the following welding process with neat sketch.
- (i) Resistance seam welding
- (ii) Friction Stir welding. (16)

13. (a) (i) Briefly explain about seamless rolled ring forging. (8)
- (ii) Briefly explain flat strip rolling operation. (8)

OR

- (b) (i) Explain Hot working and Cold working with their advantages and limitations. (8)
- (ii) Explain with a neat sketch the process of wire drawing. (8)

14. (a) Sketch and explain the following sheet metal bending operations :
- (i) Sheet bending using V-die. (4)
- (ii) Bending edge of a sheet using wiping-die. (4)
- (iii) Roll bending. (4)
- (iv) Bending a sheet to a round shape using four-slide machine. (4)

OR

- (b) (i) With a neat diagram, explain the principle of explosive forming. (8)
- (ii) Explain the hydro forming process with neat sketches. Make a brief comparison of this process with conventional deep drawing. (8)

15. (a) (i) Describe with a neat sketch the procedure for producing plastic films and sheets by extrusion process. (8)
- (ii) Enumerate the various processes of joining plastics. (8)

OR

- (b) (i) Describe with suitable illustrations the procedure of producing plastic components by injection moulding. (8)
- (ii) Discuss in detail the various thermosetting and thermoplastic compounds and their application. (8)