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**Question Paper Code : 50856****B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2017****Third/Fifth Semester****Mechanical Engineering****ME 6302 – MANUFACTURING TECHNOLOGY – I****(Regulations 2013)****(Common to : Industrial Engineering/Industrial Engineering and Management/  
Mechanical Engineering (Sandwich)/Mechanical and Automation Engineering)****Time : Three Hours****Maximum : 100 Marks****Answer ALL questions.****PART – A****(10×2=20 Marks)**

1. What is natural moulding sand ? Give its Constituents.
2. What are hot spots and hot tears ?
3. How does penetration vary for DCSP and DCRP welding ?
4. Define the terms 'weld decay' and 'dilution'.
5. Differentiate flat rolling and shape rolling.
6. What is precision forging ?
7. What is spring back in sheet metal bending ?
8. Distinguish redrawing and reverse drawing.
9. What are commonly used fillers ?
10. Define 'potting' and 'encapsulation'.



## PART – B

(5×13=65 Marks)

11. a) Draw the cupola furnace and Indicate the various zones in it. Describe its operations and various zones present.

(OR)

- b) Name any 2 casting defects and its remedies of the following categories

(i) Metallic projection (ii) Cavities (iii) Defective surfaces.

(4+4+5)

12. a) With suitable diagram, discuss the principle and variables of operation in TIG welding. What are functions and names of shielding gases used in TIG and MIG ?

(OR)

- b) What is explosive welding ? Describe its principle, process parameters and applications.

13. a) Name the different types of rolling mills. Explain any 4 types with neat sketch.

(OR)

- b) i) Explain the process of making seamless tube.

(7)

- ii) Discuss how the tubes for shaving creams/tooth paste is produced.

(6)

14. a) i) What is stretch forming ? Explain how it is useful for forming large sheet metal parts.

(6)

- ii) Discuss any one method of testing the formability of sheet metal.

(7)

(OR)

- b) What is High Energy Rate Forming ? List the different types and explain any 2 in detail.

15. a) Describe the process of extrusion of plastics. Name some products made by this process.

(OR)

- b) Name and explain the suitable process for producing the barrel and plunger of a syringe.

## PART – C

(1×15=15 Marks)

16. a) Name and describe any one of the methods of joining dissimilar materials having different coefficient of thermal expansion.

(OR)

- b) Suggest and explain suitable process for forming Hearing-aide. Also, highlight its capabilities.