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## Question Paper Code : 91836

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2019
Third/Fifth Semester
Mechanical Engineering
ME 6302 – MANUFACTURING TECHNOLOGY – I
(Common to Mechanical Engineering (Sandwich)/Industrial Engineering/ Industrial Engineering and Management/Mechanical and Automation Engineering)
(Regulations 2013)
(Also common to PTME 6302 – Manufacturing Technology – I for B.E. (Part-Time) – Second Semester (Regulations 2014))

Time : Three Hours | Maximum : 100 Marks

Answer ALL questions.

PART – A (10×2=20 Marks)

1. What is the ideal profile of a sprue ?
2. What is meant by core print ?
3. Name various causes for the defect porosity in the welding.
4. Write the difference between brazing and soldering.
5. Why is the surface finish of a rolled product better in cold rolling than in hot rolling ?
6. Define the term rate sensitivity.
7. What are the two most common shearing operations ?
8. What is meant by spring back in sheet metal work ?
9. Define Thermo forming process .
10. Mention any two applications of Blow moulding process.

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PART – B **(5×13=65 Marks)**

11. a) i) Explain the properties required for moulding sand.
ii) Explain the preparation of moulding sand process.

(OR)

b) i) Explain any one type of centrifugal casting with neat diagram.
ii) Name any five casting defects and explain the remedies for those defects.

12. a) i) What are the advantages and disadvantages of welding compared to other types of assembly operations ?
ii) What is the principle of resistance welding processes ?

(OR)

b) Explain gas metal arc welding process with a neat diagram.

13. a) i) Explain with neat sketches various types of rolling stand arrangement.
ii) Explain with a neat sketch the process of wire drawing.

(OR)

b) i) Discuss the advantages and limitations of hot working and cold working.
ii) Explain the steps involved in drop forging with neat sketches.

14. a) With neat sketches explain the sequence of the Stretch forming process. **(13)**

(OR)

b) With a neat sketch explain the explosive forming process. **(13)**

15. a) Describe the following plastic processing methods with neat sketches (i) Compression moulding (ii) Blow moulding. **(7+6)**

(OR)

b) i) Why is the thermoforming a valuable method for the plastic manufacturer ? Explain the process with neat sketch. **(7)**
ii) State the purpose of the following in plastics (1) Plasticizers (2) Fillers and (3) Stabilizer. **(6)**

PART – C **(1×15=15 Marks)**

16. a) Discuss the principle and applications of friction welding and friction stir welding processes for joining different configurations of Aluminium alloys used in automotive sector. **(15)**

(OR)

b) Explain how the explosive forming technique differs from other high speed forming operations. Discuss its principle and key applications in military. **(15)**