
Question Paper. Code **10406**

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

Third Semester

Mechanical Engineering

ME 22011114306/ME 32/10122 ME 302/PR 12041080120005 - MANUFACTURING
TECHNOLOGY - I

(Regulation .2008)

Time: Three hours

Maximum: 100 marks

Answer ALL questions. PART

A - (10 x 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 x 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 x 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)

1 Question Paper Code : 21557

B.E.IB.Tech. DEGREE EXAMINATION, MAY/JUNE 2013.

Third Semester

Mechanical Engineering

ME 2201/ME 32/10122 ME 302/PR 1204/08012/0005 - MANUFACTURING
TECHNOLOGY -I

(Common to Industrial Engineering and Industrial Engineering and Management)

(Regulation 2008/2010)

Time: Three hours

Maximum: 100 marks

Answer ALL questions ..

PART A- (10 x 2 = 20 marks)

1. Compare the advantages of metal moulds over sand (expendable) moulds.
2. What are the functions of flux in melting metals and alloys?
3. What is the minimum distance maintained between two successive spot welds made by resistance welding? Why?
4. Write short notes on transferred and non transferred arc and plasma arc welding.
5. What is ironing?
6. What is meant by fullering?
7. Define spring back.
8. Why is it necessary to provide proper clearance between the punch and die in a shearing operation?
9. What is polymerization?
- 10; What is calendaring in processing of plastics?

PART B - (5 x 16 = 80 marks)

11. (a) (i) What are the allowances given while making pattern? Explain. (8)
(ii) Describe the process of Investment casting. What process controls are needed in this case? (8)

Or

- (b) (i) Briefly explain the Principle, operation, advantages, disadvantages and application of CO₂ moulding. (8)
 - (ii) Describe with a neat sketch of cold chamber die casting machine. Give its Advantages' and Limitations. (8)
12. (a) (i)" Explain any four major ways to control the output of arc welding transformer. (8)
- (ii) Explain the three variables involved 'in Continuous drive friction welding. (8)

Or

- (b) (i) What are the nondestructive tests used in welding inspection? Explain any one method. (8)
 - (ii) Explain with a neat sketch the Equipment and process of submerged arc welding. (8)
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) (i) Explain the basic nomenclature of tube bending with a simple sketch. (8)
- (ii) Discuss Super plastic forming with necessary sketches. (8)

Or

- (b) (i) What are the different types of stretch forming? Explain anyone. (8)
 - (ii) Explain with a neat sketch the principle and operation of magnetic pulse forming. (8)
15. (a) (i) What is rotational moulding? State its advantages and limitations. (8)
- (ii) Explain briefly any two bonding methods of thermoplastics. (8)

Or

- (b) Explain briefly with neat sketches two commercially used methods of blow moulding for blowing of plastics bottles and mention their specific advantages. (16)

Question Paper Code: 11517

B.E.IB.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2012.

Third Semester

Mechanical Engineering

ME 2201/114306IME 32/10122 ME 302IPR 1204/080120005 - MANUFACTURING
TECHNOLOGY - I

(Common to Industrial Engineering and Industrial Engineering and Management)

(Regulation 2008)

Time: Three hours

Maximum: 100 marks

Answer ALL questions. PART

A - (10 x 2 = 20 marks)

1. What is meant by core print?
2. Name the different melting furnaces employed for metal casting.
3. What is meant by 'carburising flame' in gas welding?
4. What is the principle of 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. What is 'Lancing' operation that is done on sheet metals?
8. What are the limitations of explosive forming?
9. Name two important differences between thermoplastics and thermosetting plastics.
10. What is film blowing?

PART B -(5 x 16= 80marks)

11. (a) (i) Describe the various pattern allowances which can be quantitatively specified. (8)
- (ii) What are the desirable properties of moulding sand for sand casting? Explain briefly each one. (8)

Or

- (b) (i) With illustrative sketches, explain the various casting defects indicating, their causes and remedies. (8)
- (ii) Explain the stages of preparing shell mould, with suitable sketches. List the unique advantages of making castings in shell moulds. (8)
12. (a) (i) Discuss the gas welding process and the necessary equipments needed with suitable sketches. (10)
- (ii) Explain the metal arc welding process with a sketch. (6)

Or

- (b) (i) Explain the plasma arc welding process with a neat sketch and list out its advantages: (10)
- (ii) Sketch the different types of weld defects and mention how they occur. (6)
13. (a) With neat sketches, explain the following smith forging operations:

- (i) Upsetting (2)
- (ii) Bending (3)
- (iii) Swaging (3)
- (iv) Fullering (3)
- (v) Punching and drifting (3)
- (vi) Edging. (2)

Or

- (b) -With suitable sketches, explain the following:
- (i) Stages involved in 'Shape rolling' of structural sections. (5)
- (ii) Cold extrusion forging. (5)
- (iii) Seamless tube drawing. (6)

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 briefly the plunger type injection moulding process for producing plastic components. (8)
- (ii) Explain, with neat diagrams, the thermoforming process. State its advantages over other processes. (8)

Or

- (b) With neat sketches, explain the working principle and applications of the following moulding processes for plastics:
- (i) Compression moulding. (8)
 - (ii) Transfer moulding. (8)

Question Paper Code: 31557

B.E.f.B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2013.

Third Semester

Mechanical Engineering

ME 2201/ME 32/101/ME 302/PR 1204/080.120005 - MANUFACTURING TECHNOLOGY - I

(Common to Industrial Engineering and Industrial Engineering and Management)

(Regulation 2008/2010)

Time: Three hours

Maximum: 100 marks

Answer ALL questions.

PART A - (10 x 2 = 20 marks)

1. Differentiate shrinkage and porosity.
2. List the various sand casting defects.
3. What is the purpose of flux in welding?
4. Write short notes on thermic welding.
5. What is the difference between hot and cold forging?
6. Differentiate extrusion and forging.
7. Define spring, back effect in sheet forming process.
8. List the advantages of superplastic forming processes.
9. What are the different types of compression moulds?
10. Define pulforming.

PART B - (5 x 16 = 80 marks)

11. (a) (i) Explain any four casting defects and its remedies. (8)
(ii) Explain shell moulding with sketches and also list the advantages over other casting methods. (8)
Or
- (b) (i) Explain how pipes and cylinder liners are made by centrifugal casting process. (8)
(ii) Explain lost wax processes with neat sketch. (8)
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) Explain the steps involved in the forging operation. (8)
(ii) Explain the precision forging process with neat sketch and also compare with closed die forging process. (8)
Or
- (b) (i) Explain the various defects present on the rolled plate surfaces with suitable sketch. (8)
(ii) Write short notes on impact extrusion and hydro static extrusion. (8)
14. (a) (i) Explain the various sheet metal forming process with its important characteristics. (10)
(ii) Describe forming limit diagram. (6)
Or
- (b) (i) Explain the explosive forming process with neat sketch. (10)
(ii) How curvatures are made on thin sheet metals, explain the suitable process with neat sketch. (6)
15. (a) Explain compression moulding and transfer moulding process with neat sketch, (16)
Or
- (b) Explain the various moulding process for reinforced plastics. (16)