# ME6352 – Manufacturing Technology

## QUESTION BANK

## UNIT 1 - CASTING

### TWO MARK QUESTIONS

1. Why casting is preferred over other methods of manufacturing? (Nov/Dec 2010)
2. What is the difference between a 'temporary mould 'and permanent mould . (Nov/Dec-2010)
3. State any four properties of moulding sand.(Nov/Dec-2012)
4. What are the remedies for casting defects?. (Nov/Dec-2012)
5. What is a split pattern? (Nov/Dec-2008)
6. What do you understand by core prints?, (May/Jun 2011)
7. How the blow holes are formed in a casting?(May/Jun 2011)
8. What are the different types of casing ?(May/Jun 2013)
9. List out the casing defects.(May/Jun 2013)
10. What are the properties of core sand. (Apr/May-2009),
11. State the advantages of shell moulding.(Apr/May-2009)
12. What do you mean by core print?(Nov/Dec-2008)
13. What is the difference between gravity die casting and pressure die casting?.(Nov/Dec-2008)
14. What is core print and its function?
15. Differentiate the terms 'mould' and 'core'.
16. State any 4 properties of moulding sand?
17. What are the pattern materials?
18. What is core venting?
19. State any four types of patterns.
20. What are the advantages of applications of ceramic mould?

### 16 MARK QUESTIONS

1. (i) Discuss briefly the various methods employed to inspect the castings.
   (ii) Name the common defects found in casting. (Nov/Dec-2010)
2. Explain the following casting process
   (i) Investment casting (ii) die casting (Nov/Dec-2010) (Nov/Dec-2008)
3. (i) with a neat diagram ,briefly explain the shell moulding process.(10)
   (ii) What are the different types of core boxes? explain about the core binders.(6) (Nov/Dec-2012)

4. (i) Describe the procedure of making casting by the pressure die casting process.(8)
   (ii) What are the advantages & limitations of $co_2$ moulding & investment casting process? (Nov/Dec-2012)
5. (i) explain the steps in making green sand mould.(10)
   (ii) What are the major draw backs of the casting process & how they are over come?(6) (May/June -2011)
6. (i) compare centrifugal & semi centrifugal casting.(6)
   (ii) What is the permanent mould casting? Why it is so called? Explain the important features of permanent mould casting process.(10) (May/June -2011)
7. (i) what are the problems encountered with pressure die catsting.(4)
   (ii) What are the factors which influence the choice of casting method?(4)
   (iii) Explain the working principle of centrifugal casting.(8) (Nov/Dec 2008)
8. (i) Enumerate the steps in sequence for producing casting from shell moulding. (Nov/Dec 2008)
   (ii) Briefly explain the various casting defects.(May/June 2013)
9. (i) What are the defects caused by pattern and moulding Box Equipment? Briefly explain (April/May 2009)

UNIT 2 - WELDING

TWO MARK QUESTIONS

1. What are the qualities of flame used for welding? (Aoril/May-2009)
2. What do you understand by arc blow? (April/May 2009)
3. What is filler rod? (Nov/Dec-2008)
4. Distinguish between brazing and soldering (Nov/Dec-2008) (Nov/Dec-2008
5. What is meant by gouging? (Nov/Dec-2012)
6. What are the differences between fusion welding and solid welding? (Nov/Dec-2012)
7. Whether Arc fluxes are necessary in brazing? If so Why? (May/apr 2011)
8. Differentiate fore hand and back hand welding techniques.(May/Jun 2011)
9. What are the advantage and disadvantage of D.C and A.C welding? (Nov/Dec 2010)
10. List the advantage and disadvantage of gas welding. (Nov/Dec 2010)
11. What are the parameters to be controlled in resistance welding process? (Nov/Dec-2008)
12. State the working principle of oxy-acetylene gas welding.(May/June-2013)
13. List out the limitations of electron beam welding.(May/June-2013)
14. Why is flux used in soldering & brazing?
15. Differentiate fission welding and fusion welding?

16. What do you mean by friction welding?
17. List out any four arc welding equipments?
18. Define the term 'electrode' and mention its major classification
19. What is the application of carburizing flame?
20. Why is flux coated on filler rods?

16 MARK QUESTIONS

1. (i) Exlain the mechanism of metal transfer in MIG welding (April/May-2009)
   (ii) state the advantage of laser welding over electron beam welding. (April/May-2009)
   (ii) Describe the process of Brazing and Soldering with paste and enumerate its advantages
2. (i) How is gas cutting of brass different from that of mild steel? (2) (Nov/Dec-2008)
   (ii What are the advantages and disadvantages of resistance welding? (6) (Nov/Dec 2008)
   (iii) Sketch and explain the process of friction welding. (8) ) (Nov/Dec-2008)
3. (i) Sketch and explain the process of electron beam welding, (8) (Nov/Dec-2008)
   (ii) Explain the process of electric arc welding. (8) (Nov/Dec-2008)
4. (i) With a help of neat sketch briefly describe the Gas Metal Arc Welding (GWAG) process. (10) ) (Nov/Dec-2012)
   (ii) What are the functions of flux coating? Explain the mode of metal transfer in MIG welding process. (6). (Nov/Dec-2012)
5. (i) Briefly explain the working principle of the laser beam welding process and mention their applications. (10) (Nov/Dec-2012)
   (ii) Explain the various welding defects, causes and remedies. (6) (Nov/Dec-2012)
6. (i) Sketch the different types of flames in gas welding and mention the composition of oxygen and acetylene in each case. (6) (May/Jun -2011)
   (ii) Explain the principle of thermit welding and its applications. (10) (May/Jun -2011)
7. (i) With aid of a neat sketch explain electron beam welding process. (10) (May/Jun -2011)
   (ii) Name some of the common welding defects and methods to overcome it. (6) (May/Jun -2011)
8. (i) Explain the principle of Plasma Arc Welding with a neat sketch (Nov/Dec-2010) (ii) Describe step-wise procedure of 'Brazing'. (Nov/Dec-2010)
9. (i) Give a comparison between TIG and MIG welding processes. (Nov/Dec-2010)
   (ii) State the common defects found in welding. (Nov/Dec-2010).
10. (i) Name and explain the types of flames on oxy-acetylene welding. (8) (Nov/Dec 2008)
    (ii) Describe briefly the technique of welding in TIG process. (8) (Nov/Dec 2008).
11. (i) Enumerate the principle of operation, advantages and imitations of Electron beam welding. (8) (Nov/Dec 2008)
    (ii) Explain with neat sketch the principle of thermit welding. (8) (Nov/Dec 2008)

12. (i) Explain the LRM and EBM welding process with neat sketch. List out the applications of each. (16) (May/Jun-2013)
13. (i) Explain the principle underlying the resistance welding process. Give names of products where in the following process are used
    (i) Spot welding (ii) Seam welding (iii) Flash welding (5+5+6) (May/Jun-2013)

UNIT 3 - MACHINING

TWO MARK QUESTIONS

1. List the commonly used attachments on Lathe. (April/May-2009)
2. What is the essential difference between up and down milling? (April/May-2009)
3. What are the requirements for tool material? (Nov/Dec 2008)
4. What is draw cut shaper? (Nov/Dec 2008)
5. What is dog carrier? In what way laser beam machining is superior to conventional machining? (Nov/Dec 2012)
6. Mention the electrodes that are used in EDM and ECM process? (Nov/Dec 2012)
7. How are the grains of abrasives classified? (May/Jun-2011)
8. Abrasive jet machining will be effective in ductile or brittle material. Why? (May/Jun-2011)
9. Give the comparison between planer and shaper. (Nov/Dec 2010)
10. Define the terms 'Indexing' and 'Dividing Head'. (Nov/Dec 2010)
11. Differentiate between shaping and planning. (Nov/Dec 2008)
12. State any four applications of laser beam machining. (Nov/Dec 2008)
13. What are the major parts of cylindrical grinding machine. (May/Jun-2013)
14. Give the applications of EDM. (May/Jun-2013)
15. Give the applications of AJM
16. Give the applications of ECM.
17. Differentiate between capstan & turret lathe.
18. Differentiate between EBM & LBM
19. Give the applications of shaper?
20. What are the Advantages of AJM?

16 MARK QUESTION

1. Discuss the relative merits and demerits of the four methods of machining external taper on lathe. (April/May-2009)
2. Explain the different methods of indexing commonly used in a milling machine. (April/May-2009)
3. (i) What are the advantages f automats as compared to engine lathes? (4)

(ii) Explain the mechanisms used for headstock driving arrangement in a lathe. (8)
(iii)Explain the following milling operations with sketches:
(i)Straddle Milling
(ii)Gang Milling (2x2=4) (Nov/Dec 2008)

4. (i)What is the principle of operation in an abrasive jet machining? (3)
   (ii)With a neat diagram, electric discharge machining. (8)
   (iii)Compare Electron beam machining and laser beam machining. (5) (Nov/Dec 2008)
5. (i)With a neat explain the principle and operation of cylindrical grinding machine and write their applications.
   (ii)What are the difference between NC and CNC machines? (4) (Nov/Dec 2012)
6. (i)With a neat sketch explain the working principle of electron beam machining and write their advantages. (10)
   (ii)Explain the working principle of abrasive jet machining process? (Nov/Dec 2012)
7. Explain the general principle and application of electric discharge machining. (16) (May/Jun-2011)
8. (i) Explain the different types of milling operations. (8)
   (ii)Compare the operations that can be performed in shaper, planner and sloter. (8) May/Jun-2011)
9. (i) Explain the working principle of centre less grinding operation.
   (ii)List the common tools and attachments used on turret and capstan lathes. (Nov/Dec 2010)
10. Explain clearly with a neat diagram, Abrasive jet Machining method. State also its advantages, disadvantages and applications. (Nov/Dec 2010)
11. (i)Enumerate with neat sketches any four operations that can be performed on lathe. (8)
    (ii)Sketch and indicate the important parts of a horizontal milling machine. (8) (Nov/Dec 2008)
12. (i)Describe with neat sketch the principle of Ultra machining. State its applications. (8)
    (ii)Explain with a neat sketch the principle of EDM. State its applications. (8) (Nov/Dec 2008)
13. (i)Draw the block diagram of a horizontal milling machine and write about its important parts. (12)
    (ii)Differentiate Capstan from Turret lathe. (4) (May/Jun-2013)
    (i)Explain the principle of AJM and mention advantages of AJM. (12)
    (ii)List the product application of PAM. (4) (May/Jun-2013)

## UNI T 4 – FORMING AND SHAPING OF PLASTICS

### TWO MARK QUESTIONS

1. What are the advantages and limitations of Plasma Arc Machining? (April/May-2009)
2. What is the main advantage of injection moulding for thermoplastic parts as compared with hot compression moulding? (April/May-2009)
3. What is blow moulding? (Nov/Dec 2008)
4. What are the applications of reinforced plastics? (Nov/Dec 2008)
5. Write short notes on tube extrusion process. (Nov/Dec 2012)
6. What are the applications for thermoforming process? (Nov/Dec 2012)
7. Distinguish thermoset and thermo plastics. (May/Jun-2011)
8. What do you mean by glass transistion temperature? (May/Jun-2011)
9. What are thermoplastic materials? (Nov/Dec 2010)
10. Name three important thermosetting materials. (Nov/Dec 2010)
11. Distinguish thermosetting plastics and thermoplastics. (Nov/Dec 2008)
12. Differentiate between pot transfer moulding and plunger transfer moulding. (Nov/Dec 2008)
13. State the working principle of blow moulding. (May/Jun-2013)
14. List out the various bonding methods for thermoplastics. (May/Jun-2013)
15. What is upset forging?
16. What is skew rolling?
17. Classify types of extrusion.
18. What are the disadvantages of forging process?
19. How are seamless tubes produced?
20. Distinguish between open die forging and closed die forging

### 16MARK QUESTION

1. Explain in detail Compression moulding process used for moulding of plastics. (April/May-2009)
2. Explain the various methods of joining plastics briefly. (April/May-2009)
3. (i)What is the difference between plastics and elastomers? (2)
   (ii)What do you mean by vacuum forming? (4)
   (iii)Name atleast five thermosetting plastics and their uses.(5)
   (iv)Briefly explain about the metallization of plastics. (5) (Nov/Dec 2008)
4. (i)In what ways does the cold moulding differ from hot compression moulding? What kind of parts are made by cold moulding? (6)
   (ii)Explain the principle of rotational moulding. (7)
   (iii)What are the various materials needed for processing of plastics? (3) (Nov/Dec 2008)

5. (i)Describe briefly the process of rotational moulding as used for producing plastic components . (8)
   (ii)Explain how bondings of thermoplastics are carried out and write in detail about fusion and solvent methods in thermoplastics. (Nov/Dec 2012)
6. (i)What are the different types of plastics? Briefly explain the working principles of injection moulding process with suitable applications. (10)
   (ii)Explain the thermoplastics with examples. (6) (Nov/Dec 2012)
7. Suggest a suitable manufacturing process to produce body of ball pen. Explain the process with proper justification. (16) (May/Jun-2011)
8. Explain in detail about principle and characteristics of film molding process.(16) (May/Jun-2011)
9. Explain briefly the following methods of joining plastics
   (i)Fusion bonding
   (ii)Solvent bonding and
   (iii)Induction welding (Nov/Dec 2010)
10. Explain briefly the following plastic processing methods
    (i)Compression moulding
    (ii)Transfer moulding and
    (iii)Expandable bead moulding (Nov/Dec 2010)
11. (i)Describe with neat sketch the principle of reciprocating screw type injection moulding.
    (ii)Explain the process of rotational moulding. (8) (Nov/Dec 2008)
12. (i)Enumerate with neat sketch the principle of vacuum thermoforming. State its applications. (8)
    (ii)List out the various methods of bonding of plastics. Describe with neat sketch the principle of ultrasonic welding of plastics. (8) (Nov/Dec 2008)
13. (i)Explain the blow mouldig process with neat sketch.(10)
    (ii)Differentiate thermoplastics from thermosetting materials. State its advantages and limitations. (6) (May/Jun-2013)
14. (i)With a neat sketch, explain Compression moulding process. (8)
    (ii) With a neat sketch, explain rotational moulding process. (8) (May/Jun-2013)

## UNI T 5 – METAL FORMING AND POWER METALLURGY

### TWO MARK QUESTIONS

1. What is the principal advantage of the casting method of moulding plastic parts? (April/May-2009)
2. What are the general advantages of forgiving a manufacturing process? (April/May-2009)
3. What is embossing operation? (Nov/Dec 2008)
4. What is reason for maintaining the sintering temperature? (Nov/Dec 2008)
5. What is the difference between rolling and spinning process? (Nov/Dec 2012)
6. Differentiate drop and press forging operators. (May/Jun-2011)
7. Name some of the components manufactured by powder metallurgy. (May/Jun-2011)
8. What is the difference between bloom and billet? (Nov/Dec 2010)
9. List the applications of powder metallurgy. (Nov/Dec 2010)
10. What is the difference between direct and indirect extrusion? (Nov/Dec 2008)
11. What is reversing mill in rolling? (Nov/Dec 2008)
12. State the difference between extrusion and wire drawing. (May/Jun-2013)
13. List out the applications of powder metallurgy process.(May/Jun-2013)
14. What is ironing, as applied to sheet metal work?
15. Define the term formability
16. Write short notes on hydro forming.
17. What is punching operation?
18. What is super plastic forming operation?
19. Define 'embossing'.
20. List out various forging defects.

### 16MARK QUESTION

1. (i) Briefly explain the different methods of Forging.
   (ii)Discuss the advantage of extrusion process(April/May-2009)
2. (i)State the advantages and disadvantages of using powder metallurgy for structural parts.
   (ii)What are the basic steps to produce a powder metallurgy part? (April/May-2009)
3. (i)Explain the different types of hot extrusion process.(8)
   (ii) What is the effect of excessive of upon die-cut metals? (3)
   (iii)Explain the principle of wire drawing operation.(5) (Nov/Dec 2008)
4. (i)Explain the basic steps of producing a powder metallurgy part? (5)
   (ii)List the applications of powder metallurgy in industrial area.(6)
   (iii)What are the limitations of powder metallurgy? (5) (Nov/Dec 2008)

5. (i)Write step by step procedure for producing a powder metallurgy components. (10)
   (ii)What are the advantages and limitations of powder metallurgy?(6) (Nov/Dec 2012)
6. Write the principle and applications of following processes (4x4)
   (i)Extrusion (ii)Wire drawing (iii)Spinning (iv)Forging (Nov/Dec 2012)
7. Suggest a suitable process for manufacturing rail. Explain the process with proper justification. (16) (May/Jun-2011)
8. (i) Explain the different steps involved in manufacturing the component by powder metallurgy. (16) (May/Jun-2011)
9. (i) List out various forging operations. Explain any four. (8)
   (ii)Explain in detail about Wire drawing. (8) (Nov/Dec 2008)
10. (i)Enumerate with neat sketch the principal steps involved in powder metallurgy. (8)
    (ii)Describe with neat sketch the principle of spinning. (8) (Nov/Dec 2008)
11. (i)Briefly explain the principle of Forging with a neat sketch. List out the product application of it. (10)
    (ii)How do you compare forged components with cast components? Discuss. (6)
    .(May/Jun-2013)
12. Explain the principle steps involved in powder metallurgy process. (10)
    (ii) List out the major product applications of powder metallurgy process.(6)
    (May/Jun-2013).