



KINGS

COLLEGE OF ENGINEERING



DEPARTMENT OF MECHANICAL ENGINEERING
ACADEMIC YEAR 2011- 2012 / ODD SEMESTER

QUESTION BANK

SUB CODE/NAME : PR1204 – MANUFACTURING TECHNOLOGY I
YEAR/SEM : II / III

UNIT- I

METAL CASTING PROCESSES

PART – A (2 Marks)

1. How special forming process is defined?
1. What is metal spinning process? Define casting?
2. When do you make core (or) what is function of core in moulding sand?
3. Explain the core making process?
4. Mention the specific advantages of carbon di oxide process?
5. Write the composition of good moulding sand?
6. What are chaplets?
7. List the factors to be considered in the choice of metal melting furnace?
8. What are the reasons for the casting defects of cold shuts and misrun?
9. Name four different casting defects.
10. How casting defects are identified?

Part-B (16 Marks)

1. What are the pattern allowances? Explain briefly each. (16)
2. Discuss the properties of moulding sand. (16)
3. Explain the CO₂ process of core making state its advantages and applications. (16)
4. State the different type of mould. Write a short note on 'Green sand mould' and shell moulding (16)
5. Write a neat sketch of a cupola, Explain its operate. (16)
6. Explain with a simple sketch how metal is melted in a cupola furnace. (16)
7. What are the different types of furnace used in foundry? Describe in detail with neat sketches any one of them. (16)
8. Explain briefly the various moulding method used in foundries. (16)
9. Enumerate the continuous casting defects and suggest suitable remedies. (16)
10. Explain the various non –destructive inspection methods of cast products. (16)

UNIT - 2

JOINING PROCESSES

Part-A (2 Marks)

1. Define welding process.
2. Define fusion welding .
3. What are different method of welding you know ?
4. Define arc crater.
5. Mention any two advantages of D .C and A. C welding.
6. What do you understand by straight polarity?
7. When is the straight polarity used for arc welding?
8. What is the purpose of coating on an arc – welding electrode?
9. What are the two main different of consumable electrode and non –consumable electrode?
10. How does MIG welding differ from TIG welding?
11. What is the main different between upset butt welding and flash butt welding ?
12. What are the various types of flame?
13. Define plasma arc welding ?

Part-B (16 Marks)

1. Explain the method of laser beam welding and give their applications (16)
2. Explain the method of electron beam welding and given their applications (16)
3. Describe plasma Arc welding and given their applications (16)
4. Describe and explain Ultrasonic welding and give their applications (16)
5. Explain Thermit welding and given their applications (16)
6. What is friction welding? give their advantage and limitations (16)
7. Distinguish between brazing, soldering and welding (16)
8. Write briefly on testing and inspection (16)
9. Describe brazing process (16)

UNIT-III

BULK DEFORMATION PROCESSES

Part-A (2 Marks)

1. Define cold working of metals
2. Define recrystallization temperature
3. Give some examples for mechanical working of metals
4. Define forging
5. Give some basic forging operations
6. Define extrusion ratio
7. Define tube drawing
8. Define degree of drawing

9. Name four different press-working operations
10. What are the defects in forging operations?

Part-B (16 Marks)

1. Explain the hot working and cold working with suitable examples (16)
2. Define rolling and discuss according to the classification (16)
3. Discuss the various forging operations (16)
4. Give the advantage of press forging over drop forging (16)
5. What are the defects in forgings? Explain it. (16)
6. How the pipe and tubes are manufacturing? (16)
7. Define drawing and discuss the classification with neat sketch (16)
8. What are the defects in rolled parts? (16)

UNIT-IV

SHEET METAL PROCESSES

Part-A (2 Marks)

- 1) What is sheet metal work?
- 2) write down any four sheet metal characteristics
- 3) What is meant by clearance?
- 4) What is stretching?
- 5) Define the term "spring back".
- 6) How force exerted on the form block is calculated
- 7) What are the formability test methods?
- 8) What is super plasticity of metals?

Part-B (16 Marks)

1. Describe shearing operations in a sheet metal work with a neat sketch (16)
2. Describe various types of bending operations with its neat sketches (16)
3. Explain any one method of stretch forming operation with a neat sketch (16)
4. Explain hydro forming process with its neat sketches. State their advantage and applications (16)
5. Explain the power spinning process with a neat sketch .give their applications (16)
6. How magnetic pulse forming process is carried out on sheet metal? (16)
7. Explain peen forming process with a neat sketch (16)
8. What is super plastic of metal? how this process is carried out on sheet metals? (16)

UNIT-V

MANUFACTURING OF PLASTIC COMPONENTS

PART-A (2 Marks)

1. How the plastic is defined?
2. Give some examples of additives
3. Give some examples for thermosetting plastics.
4. Give some example of thermo plastics.

5. Give some additives added to the manufacturing of rubber.
6. What are the processes of thermoplastics?

7. What are the two types of injection moulding?
8. What are the types of compression moulding?
9. define co polymerization
10. What are the foamed plastics?

Part-B (16 Marks)

1. What are the characteristics of the forming and shaping processes? (16)
2. What are the types of moulding and thermoplastics? (16)
3. Explain the working principles and application of
 - a) injection moulding
 - b) blow moulding
 - c) rotational moulding
 - d) film blowing(16)
4. Explain the thermoforming process (16)
5. Explain induction and ultrasonic methods. (16)
6. Explain working and principle of applications of
 - a. compression moulding
 - b. transfer moulding(16)