Government Polytechnic, Jajpur

Question Bank

FOUNDRY TECHNOLOGY

Chapter-1

Two mark question

1. Define casting or foundry process.
2. With a flow diagram show the steps of casting process.
3. Write two advantages of metal casting.
4. Mention few metal and alloys which can be cast.
5. Define jobbing, speciality and captive foundries.
6. Mention few important cast product.
7. What are demerits of metal casting?

Five mark question

1. What are merit and demerit of metal casting?
2. Write the various steps involved in making a casting.
3. Mention five application of metal casting.
4. Distinguish between 'Captive foundry' and 'job-shop foundr'

Ten mark question

1. Define casting. Discuss the various steps of casting process with flow diagram.

Chapter-2

Two mark question

1. Define pattern.
2. What are different pattern materials?
3. What metal is used for pattern making?
4. What types of plastics are used for pattern making?
5. What are different types of patterns?
6. What are different allowances given to a pattern?
7. Define sweep pattern.
8. What is contraction allowance?
9. Mention few important tools used for making patterns?
10. What is colour code of pattern?

Five mark question

1. Discuss different types of pattern allowances.
2. Describe the points that are taken into consideration while selecting a pattern material.
3. Differentiate between pattern and casting.

4. State advantages of wood as a pattern material.
5. How is pattern is stored and preservation of pattern?
6. What is the benefit of a split pattern over a one piece or solid pattern?

Ten mark question

1. With neat sketch describe the different types of pattern.
2. List the various pattern materials. Explain any three along with their advantages and limitation.
3. Define pattern allowances. List various pattern allowances. State purpose of each allowance.
4. Classify the types of pattern. Explain the skeleton pattern with neat sketch.

Chapter-3

Two mark question

1. What are the main constituents of moulding sand?
2. What do you mean by facing sand?
3. Define natural sand.
4. Define synthetic sand.
5. What are the effects of round and angular grain sand?
6. What is the amount of clay to be used in moulding sand?
7. What are different theories, which explain the mechanism of bonding action of clays?
8. What is sand preparation and sands conditioning?
9. What is permeability number?
10. Do we reuse moulding silica sand after producing one casting in this mould.
11. What are the equipment, which measures permeability and shieve size?
12. What are the different types of moulding sand?
13. What is the property of good moulding sand?
14. Write the composition of good moulding sand.
15. What is green sand?
16. What is parting sand?
17. What do you mean by permeability?

Five mark question

1. Discuss various types of moulding sand.
2. What are the requirements of good moulding sand?
3. Discuss briefly the materials which are added to moulding sand to improve their moulding properties.
4. Discuss briefly the influence of water-content on moulding sand properties.

Ten mark question

1. Why the properties like Permeability, Compressive strength, Flowability and Hardness are required in a moulding sand? Explain with appropriate reasons for each of them.
2. State the ingredients of moulding sand and explain the method used for determining the permeability of any moulding sand.
3. Explain the properties of moulding sand.
4. Explain briefly the following:
    - Parting sand
    - Facing sand
    - Backing sand

Chapter-4

Two mark question

1. What are different types of foundry clays?
2. What is the amount of clay to be used in moulding sand?
3. What is the purpose of additives in moulding sand?
4. What are different additives in a moulding sand?
5. What is sea coal?
6. Why graphite, silica flour, iron oxide and molasses/ dextrin are mixed in moulding sand?

Long question

1. Describe the functions of binder and additives in foundry.
2. What are usual additives added to molding sand? Explain briefly the purpose of these additions.
3. What is the role of binders in a moulding sand?

Chapter-5

Two mark question

1. What is the use of core?
2. What are different type of core-box?
3. What are different type of core?
4. What is core print?
5. Write two characteristics of a good core?
6. What do you mean by core print in pattern?
7. What are different core material?
8. Define core and write the function core?

Long question

1. What are the characteristics of a good core?
2. Describe the core extrusion machine with sketch.
3. Discuss the core baking process.
4. Explain different types of core with neat sketch.

Chapter-6

Two mark question

1. What are the advantages of dry sand moulding?
2. Define a mould.
3. What are different mould materials?
4. What are the different type of sands used in sand moulding process?
5. Define mould box.
6. What are different sand moulding processes?
7. What type of castings are produced by pit moulding?

Long question

1. Differentiate between green and dry sand mold.
2. List out various types of mold. Explain any one.
3. Explain any one method of molding.
4. Write the advantages and disadvantages of green snad molding.

Chapter-7

Two mark question

1. What is jolt machine?
2. What is squeeze machine?
3. What is sand slinger?
4. Which machine produces less noise jolt or squeeze?
5. What are the different type of moulding process?
6. What is meant by carbon dioxide moulding?

Long question

1. Explain the moulding method in permanent mould.
2. Describe the method of shell moulding giving sketch
3. Explain the carbon dioxide moulding process.

Chapter-8

1. Write down the different zone in cupola furnace.
2. Define furnace.
3. Write the two advantages and disadvantages of cupola.
4. Mention few metallurgical furnaces.
5. What is the use of induction furnace?
6. What are the raw materials for electric arc f/c?
7. Write the advantages induction f/c.
8. What are different types of electric furnaces?

Long question

1. Explain the construction and operation of cupola furnace with neat sketch.
2. With neat sketch explain the basic principles of electric arc f/c. Mention about its advantages.
3. Detail explains about coreless induction f/c.

Chapter-9

1. What is the importance of a good gating system?
2. What is sprue?
3. When bottom gate is provided?
4. What are different types of gates?
5. Define gating ratio.
6. What is the importance of gating ratio and metion few important gating ratio?
7. What are different types of gating ratios?
8. Define riser.
9. What are the main points to be considered during risering design?
10. What are the devices by which riser efficiency may be increased?
11. What is an exothermic powder?
12. Define padding.
13. What is chill?
14. Define insulating pad.
15. What is alumino-thermic powder?
16. What are different type of gating ratios?

Long question

1. What is gating ratio? Explain.
2. With neat sketches explain the different types of gating system.
3. What is meant by “risering”? State the advantages that are provided by a riser.
4. Write the short notes on: use of padding, use of exothermic materials.
5. With a neat sketch explain the different parts of a gating system.

Chapter-10

1. What is shakeout?
2. Compare between sand blasting and shot blasting.
3. What is fettling?
4. Mention stages of fettling operation.

Long question

1. Explain different methods or removal of gates and risers.
2. Describe the process of chemical cleaning.

Chapter-11

1. Mention merit and demerits of investment casting.
2. Write the application of gravity die casting.
3. Mention few special casting processes.

4. What are materials used in investment casting.
5. What is slush casting?
6. What is hot chamber die casting machine?
7. What is cold chamber die casting machine?
8. Define centrifugal casting and write two applications.
9. What are different centrifugal casting processes?

Long question

1. Explain hot chamber die casting and also with a neat sketch.
2. Explain gravity die casting and also write its applications.
3. Describe the centrifugal casting process with a neat sketch.
4. With neat sketch's explain the investment casting process. List its advantages, disadvantages and application.

Chapter-11

1. Write one casting defect and its remedies.
2. What are the different types of defects found in casting?
3. What is scab?
4. What are the causes of shift defects?
5. What are the different reasons, which cause casting defects?
6. What is warpage?

Long question

1. Explain the different types of defects in casting with a neat sketch.
2. What are the possible casting defects that may be caused by the improper mixing and distribution? State at least four defects.
3. Differentiate between the following casting defects with reference to cause and method of prevention: cold shut and misrun, blow hole and pin hole porosity.