

## **ASSIGNMENT – 1&2 METAL CASTING PROCESSES**

### **Theory**

1. Give broad classification of manufacturing processes.
2. Define pattern. List different type of pattern and explain with neat sketch.
3. Define pattern allowance. List various pattern allowance & state purpose of each allowance.
4. List out material commonly used for pattern & explain wood and metal material with advantages and disadvantages.
5. List essential property of moulding sand. State effect of each property on Casting.
6. State ingredients of moulding sand and explain the method used for determining the Permeability of moulding sand.
7. What is core and core print & what is its purpose. Explain types of core with neat sketch.
8. Explain shell moulding with neat sketch.
9. What is gating system? What is its function? State types of gate with its advantage and disadvantage.
10. Sketch cross section of sand mould which is ready for pouring.

## ASSIGNMENT – 3 METAL JOINING PROCESSES

### Theory

1. Classify metal joining processes. Explain principle of gas welding process with neat sketch and write its advantages and disadvantages.
2. Explain TIG and MIG arc welding. Give application of each.
3. Write short note on Electron beam welding and state its application.
4. Explain the principle of resistant welding and explain seam welding process with neat sketch. Give its application.
5. Explain various flames produced in an Oxy-acetylene gas welding.
6. What is the working principle of brazing and soldering?
7. What is the role of electrode coatings in shielded metal arc?
8. Explain the factors involved in electrode selection in arc welding processes

## **ASSIGNMENT – 4&5 METAL SHAPING AND FORMING**

### **Theory**

1. State the principle of centrifugal casting and explain its working with neat sketch. Give its advantages.
2. Classify the type of foundry furnace. Explain cupola furnace with neat sketch showing Temperature zone and important reactions that are taking place in it.
3. Discuss in brief the working of electric furnace.
4. Describe casting defect stating their cause and remedies.
5. List factor which affect salvaging of casting. Also its various salvage techniques of Casting and explain any one.
6. Describe wire and tube drawing.

## **ASSIGNMENT – 5 PLASTIC, CERAMIC AND GLASS PROCESSING**

### **Theory**

1. Classify the types of plastics along with the general properties of plastics.
2. Explain Injection moulding process stating its principle of operation, different aspects, advantages, limitation and applications.
3. Explain (i) Difference between thermoplastic and thermosetting. (ii) Process of polymerization.
4. With the help of neat sketches explain principle of operation for different types of compression moulding and their applications. Also explain transfer moulding process and its applications.
5. Explain ceramic structure giving example of Silicate ceramics in detail and also give its application
6. Explain glass forming processes in detail.