

MF 5103 Advances in Casting and Welding

Important 13 Marks Questions

Unit I

1. Explain the principles to be followed while designing gate and riser in casting.
2. Discuss the principles to be followed for designing direct solidification and minimum stresses.
3. Discuss the different allowances provided to patterns used in casting.
4. What are the points to be considered while designing a casting?
5. Explain any one type of moulding Machine with neat sketch.

Unit II

1. Explain counter gravity low pressure casting with neat sketches.
2. Write briefly about computer aided design of casting with neat sketches.
3. Discuss the effect of metal composition and moulding material on the solidification of the casting.
4. Compare the castability of aluminium alloys and cast iron? Also state the factors that influence the castability.
5. Briefly describe the importance of hydrogen and oxygen removal during Aluminium melting.

Unit III

1. Explain counter gravity low pressure casting with neat sketches.
2. Write briefly about computer aided design of casting with neat sketches.
3. With neat sketches explain the principle and operations for continuous casting and investment casting process.
4. With a sketch, describe the principle of die casting process. Also state few product applications of die casting.
5. Enumerate the material handling in foundry to control the pollution.

Unit IV

1. Write briefly about heat affected zone and its characteristics.
2. Explain briefly about weldability of steel.
3. With a sketch, describe the metallurgical transformations that take place in a heat affected zone of a welded joint.
4. Discuss the various methods of relieving welding residual stresses.
5. Enumerate the manufacturing aspects to be considered while designing weldments.

Unit V

1. Explain with simple sketch the working principles of electron beam welding.
2. Explain briefly about hot gas, wave and vapour phase soldering.
3. Discuss about the working principle of Plasma welding.
4. With a sketch, enumerate the principle and procedure of diffusion bonding process.
5. Explain the three variables involved in Continuous drive friction welding.