1. Explain the followings term.
   a) Why allowances are provided in Pattern Making?
   b) What is the Function of Core Prints?
   c) Why riser is called as a Reservoir?
   d) What do you understand by Directional Solidification as applied to castings?
   e) Explain the function of Fluxes in Arc Welding Process.  (5x4)

2(a) Explain the various steps involved in making a mold using a split pattern.  (10)

(b) Explain the various Properties of Molding Sand.  (10)

3. (a) Explain the working principle of Die Casting Process, its types and application.  (10)

(b) (i) What is casting defects? Explain the various testing of casting defects.  (7)

(ii) Explain the working of Cupola Furnace in brief.  (3)

SECTION - A

(b) Explain the following terms.
   (i) Piercing
   (ii) Tube Drawing
   (iii) Embossing
   (iv) Punching  (4x3)

SECTION - B

5(a) What is the principle of Resistance Welding? Explain types of Resistance Welding process with its application and limitation.  (10)

(b) Explain the various types of welding defects with sketch.  (10)

6(a) Explain the working of Submerged Arc Welding (SAW) process with its application, advantage and limitation.  (10)

(b) (i) Explain Electron Beam Welding process with sketch and its limitation.  (6)

(ii) What is the difference between Tungsten Inert Gas (TIG) Welding process and Metal Inert Gas (MIG) Welding process?  (4)

7. (a) Explain the working principle of Arc Welding Process with sketch, advantage, disadvantage and application of Welding Process.  (10)

(b) (i) What is the difference between Straight Polarity and Reverse Polarity?  (10)

(ii) Explain the different types of Gas welding Flame.  (5*2)