

**Manufacturing Process - I**  
**(PE-209, Dec-07)**

**Section-A**

- 1). a). What are the effects of mold materials on fluid flow and heat transfer?
- b). Explain the difference between short and long freezing ranges.
- c). Are External chills as effective as internal chills? Explain.
- d). Why can blind risers be smaller than open-top risers?
- e). What are similarities and difference between consumable and non-consumable electrodes?
- f). Explain why some joints may have to be preheated prior to welding?
- g). Explain the drawbacks of risers being too large and too small.
- h). Why does porosity have detrimental effects on mechanical properties of castings?
- i). What is meant by solid state welding?
- j). Why quality of weld is produced better in submerged arc welding?

**Section-B**

- 2). What are the different types of pattern material? Explain.
- 3). What is the function of core in sand molding? How they are held in places and how are they supported?
- 4). What is Thermit welding? Explain.
- 5). What are different types of pattern allowances? Explain.
- 6). Differentiate between welding, brazing and soldering.

**Section-C**

- 7). What do you understand from the gating system? What are the different types of gates? Explain any one in detail.
- 8). What is resistance welding? What are its types? Explain in detail with diagram.
- 9). Explain special casting processes in detail:
  - (i) Investment Casting
  - (ii) Die casting