

**Total No. of Pages : 02**

**B.Tech.(ME) (2011 Onwards) (Sem.-3)**

**Subject Code : BTME-305**

**Paper ID : [A1142]**

**Max. Marks : 60**

1. **SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.**
2. **SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.**
3. **SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.**

**1. Write briefly :**

- (a) What is a split pattern?
- (b) Explain why shake allowance is given on patterns.
- (c) What is the function of a core print?
- (d) Differentiate between brazing and braze welding.
- (e) What is the purpose of a riser?
- (f) What are parting agents?
- (g) Explain the term weldability.
- (h) Briefly describe flash welding.
- (i) Why is tungsten the preferred material for non-consumable electrodes?
- (j) What is investment casting?

**SECTION-B**

2. Differentiate between destructive and non-destructive testing. Explain any one method of non-destructive testing in detail.
3. Briefly describe the general classification of manufacturing processes.
4. What are the advantages of electron beam welding over arc welding? Give specific applications of electron beam welding process.
5. What is heat affected zone? Explain the microstructure and properties of the various regions of heat affected zone.
6. Describe the various stages involved in the contraction of metals during casting.

**SECTION-C**

7. Explain any five casting defects. Clearly mention the causes and remedies of all these defects.
8.
  - a) Discuss the weldability of several metals and explain why some metals are easier to weld than others. Why is cast iron generally difficult to weld?
  - b) Describe the principle, operation and process capabilities of submerged arc welding process.
9. Write short notes on :
  - a) Full mould casting
  - b) Friction stir welding