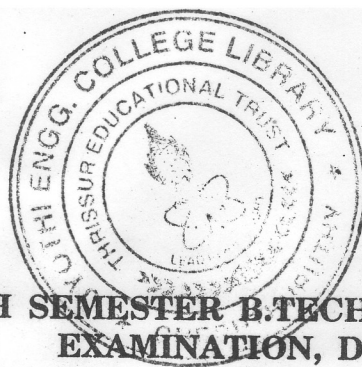


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Name.....

Reg. No.....

**SEVENTH SEMESTER B.TECH. (ENGINEERING) DEGREE  
EXAMINATION, DECEMBER 2011**

**ME 04 704—METAL CASTING AND JOINING**

(2004 Admissions))

Time : Three Hours

Maximum : 100 Marks

**Part A**

- I. (a) What is segregation ? How will it form in cast alloys.  
(b) Explain about different zones in cupola.  
(c) Explain the die making process.  
(d) List the advantages of centrifugal casting.  
(e) Explain the metal transfer in shielded metal Arc welding.  
(f) Compare electron beam welding with laser beam welding.  
(g) Explain the role of non-ferrous metals in welding.  
(h) Explain the stress concentration factors in adhesive bonding.

(8 × 5 = 40 marks)

**Part B**

- II. (a) (i) Explain the solidification phenomenon and grain structure. (8 marks)  
(ii) Explain the solid solution alloys, their characteristics and solidification. (7 marks)  
*Or*  
(b) Compare the different melting furnaces in detail. (15 marks)
- III. (a) Explain in detail about semisolid casting and list their advantages. (15 marks)  
*Or*  
(b) Explain the different casting design considerations in sand casting design. (15 marks)
- IV. (a) (i) Explain the process of electric arc welding and compare it with gas welding. (8 marks)  
(ii) Write short notes on weld pool solidification. (7 marks)  
*Or*  
(b) Explain in detail about submerged Arc welding process and list out its advantages. (15 marks)
- V. (a) Explain the soldering process and compare it with brazing process. (15 marks)  
*Or*  
(b) Discuss briefly about welding design and process selection. (15 marks)

[4 × 15 = 60 marks]