

**B.Tech. Degree IV Semester Examination  
May 2005**

**ME 405 METAL CASTING, FORMING AND JOINING PROCESS  
(2002 Admission onwards)**

Time: 3 Hours

Maximum Marks:100

- I. (a) Explain various allowances provided on patterns. (10)  
(b) What are the major ingredients of moulding sand? (5)  
(c) Explain the clay content test for moulding sand. (5)
- OR**
- II. (a) Explain die casting with a neat sketch. (10)  
(b) Distinguish between centrifugal casting and continuous casting. (10)
- III. (a) What are the functions of flux covering on electrodes? (5)  
(b) Explain the following welding methods with neat sketches:  
(i) TIG welding  
(ii) MIG Welding  
(iii) Atomic hydrogen welding (15)
- OR**
- IV. (a) What are the various types of flames used in gas welding? (10)  
(b) Distinguish between gas cutting and arc cutting. (5)  
(c) Explain submerged arc welding with a neat sketch. (5)
- V. (a) Explain the following resistance welding methods with neat sketches: (10)  
(i) Projection welding  
(ii) Butt welding  
(b) Explain thermit welding and percussion welding with the help of neat diagrams. (10)
- OR**
- VI. (a) Explain explosive welding and electro slag welding. (10)  
(b) Explain various methods of brazing. (5)  
(c) Explain various soldering alloys and its application. (5)
- VII. (a) With a neat sketch explain the effect of temperature on a longitudinal cross section of weldment. (10)  
(b) What are the common defects in welding? State their causes and remedies. (10)
- OR**
- VIII. (a) Explain various non destructive test methods for castings. (10)  
(b) Explain the common defects in casting. (10)
- IX. (a) Explain different types of rolling mills with neat sketches. (10)  
(b) Distinguish between drop forging and press forging. What are the main defects found in forging. (10)
- OR**
- X. (a) Explain with neat sketches:  
(i) Direct extrusion  
(ii) Indirect extrusion  
(iii) Tube extrusion (15)  
(b) Explain wire drawing. (5)

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