

B. Tech Degree IV Semester Examination, May 2006

ME 405 METAL CASTING AND JOINING PROCESS (2002 Admissions)

Time : 3 Hours

Maximum Marks : 100

- I. (a) Discuss about various pattern allowances and its importances on dimensions. (6)
(b) Enumerate various materials used for making patterns, state their applications and the essential points to be considered while deciding the type of pattern. (8)
(c) With the help of diagram, discuss about the Shell Mould Casting. (6)
- OR**
- II. (a) Discuss the various properties of moulding sand. (8)
(b) Explain the manual method of core making. (6)
(c) Explain the method of centrifugal casting. (6)
- III. (a) Define welding. Classify the welding process and explain the principle of fusion welding. (10)
(b) What are the different types of electrodes used in arc welding and explain the purpose of coating on an arc welding electrode? (10)
- OR**
- IV. (a) With a neat sketch explain MIG welding process. (10)
What are the advantages and limitations? (10)
(b) With a neat sketch explain stud welding and its applications. (10)
- V. (a) Explain the process of electro slag welding. (10)
(b) State and discuss about the principle of operation of seam welding. (10)
- OR**
- VI. (a) Comment on soldering alloys and its applications. (10)
(b) Define brazing. Explain the principle of operation of brazing. (10)
- VII. (a) Briefly explain the defects in welds. (10)
(b) Define "weldability". Explain the effects of various elements on weldability. (10)
- OR**
- VIII. (a) Discuss the following methods of inspection and testing of casting: (10)
(i) Radio - Graphical testing (ii) Eddy Current Inspection. (10)
(b) Briefly explain about defects in castings and methods adopted generally to prevent it. (10)
- IX. (a) Explain the difference between cold rolling and hot rolling of metals. (10)
(b) Explain the principle of operation of drop forging. (10)
- OR**
- X. (a) Define and explain the theory of wire drawing. (10)
(b) Explain the principle of tube extrusion. State the difference between hot and cold extrusion. (10)

