Code No. : 6303

FACULTY OF ENGINEERING
B.E. 3/4 (Mech.) I Semester (Supplementary) Examination, July 2010
MANUFACTURING PROCESSES

Time : 3 Hours] [Max. Marks : 75

*Note : Answer **all** questions from Part **A**. Answer **any five** questions from Part **B**.*

PART – A 25

(**All** questions carry **equal** marks)

1. Define Duty Cycle in welding operation.
2. Define casting yield.
3. State the difference between pattern and casting.
4. State the difference between spot and seam welding.
5. State the advantages of friction welding.
6. Explain why directional solidification is essential in casting.
7. How is an are obtained in arc welding ?
8. How the electrodes are designated ?
9. Define weldability ?
10. Distinguish between the AC welding and DC welding.

PART – B 50

(Answer **any** questions)

11. a) Sketch and explain various patterns that are normally used in foundry practice. 6

    b) Explain the procedure for determination of grain fineness number (GFN) for a moulding sand. 4

12. a) Describe the constructional feature of a cupola furnace. 6

    b) What are the methods available for the removal of gates and risers from the casting ? 4

13. a) Describe the types of flames obtained in an oxy-acetylene gas welding process giving the applications. 6

    b) Explain briefly the procedure of manual metal arc welding process. 4

14. a) Explain the TIG and MIG systems of arc welding. Give the applications of each. 6

    b) Describe the electro slag welding process. 4

15. a) Briefly explain various methods available for breakdown passes in rolling. 5

    b) Distinguish between open and closed die forging processes. 5

16. a) A hole of 20 mm × 40 mm is to be cut in a 3 mm thick sheet. The shear strength of the material is 80 mPa. Design the punch and the die sizes as well as the required punch force. 6

    b) What are the specific applications of hydrostatic extrusion ? 4

17. a) Explain with sketches the difference between direct and indirect extrusion. 6

    b) What are specific merits of cold working over hot working ? 4

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