Code No. : 5201/M

FACULTY OF ENGINEERING
B.E. 3/4 (Prod.) II Semester (Main) Examination, May/June 2012
METAL CASTING AND WELDING

Time: 3 Hours] [Max. Marks:75

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

PART – A **(25 Marks)**

1. Explain the pattern color code normaly used in foundries.
2. What is meant by double shrinkage allowance ?
3. Define gating ratio in a gating system ?
4. What normally constitute the charge in a cupola furnace ?
5. Give classification of welding processes.
6. What is filler metal ? Explain its importance in welding.
7. State the applications of resistance welding.
8. State the properties of core materials.
9. Explain following terms :
   i) Chaplets
   ii) Progressive solidification.
10. Distinguish between pattern and casting.

PART – B **(5×10=50 Marks)**

11. a) Describe various types of pattern materials. Give their applications.
    b) Explain the procedure to determination of following
       i) GFN
       ii) Permeability.

12. a) Sketch and describe machine moulding.
    b) Describe the operations direct are furnace. Give its applications.

13. a) Sketch and explain shell moulding processes.
    b) Describe various casting defects with their causes and remedies.

14. a) Describe the types of flames obtained in an oxy-acetylene gas welding giving the applications.
    b) Explain the SAW welding process. Give its applications.

15. a) Sketch and explain following processes
        i) LBW
        ii) GTAW
    b) Explain blow moulding process.

16. a) Explain by a schematic sketch, a resistance welding operation.
    b) Describe the properties and applications of thermosetting plastics.

17. Write short notes on :
    i) Inspection and testing of casting
    ii) Explosive welding
    iii) Welding aspects of low carbon steels.