Code No. 6103

FACULTY OF ENGINEERING

B.E. 3/4 (Mech.) I – Semester (Main) Examination, November 2013

Subject : 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 Marks)

1. What are the advantages and limitations of Wooden patterns?
2. What are the functions of binders and additives in moulding sand?
3. State causes and remedies for the following casting defects :
   i) Pin hole porosity ii) metal penetration iii) Rat tail
   iv) Cold shuts v) Hot spots
4. Expand 'MEMS' and what are the applications.
5. Differentiate between soldering and brazing.
6. Briefly explain the principle of plasma arc welding.
7. Sketch schematic diagram of EBW and label it.
8. Define weldability. What are the requirements for good welding joint?
9. State differences between piercing and blanking.
10. What are the limitations and applications of explosive forming?

PART – B (50 Marks)

11.a) What is a allowance? Explain the various pattern allowances given to the pattern in sand casting. (5)
   b) Explain the following :
   i) Directional solidification ii) Machine moulding techniques (5)

12.a) Explain with help of a neat sketch of Gas Tungstan arc welding. Give electrode materials and applications. (5)
   b) Explain principle and applications of friction welding process. (5)

13.a) Discuss the salient features of investment costing. What are the advantages and limitations. (5)
   b) Explain the injection moulding process with aid of neat sketch. List any five components manufactured by this process. (5)

14.a) Write short notes on i) Thermit welding ii) Spot welding iii) Butt Welding (6)
   b) Explain laser beam welding process and give advantages and limitations. (4)

15.a) Explain the principle and applications of planetary rolling mill with neat sketch. (5)
   b) Discuss about rubber pad forming technique. What are the merits and limitations? (5)

16. Write short notes on the following : (10)
   a) Stretch forming
   b) CO_2 moulding
   c) Inspection of castings

17. Write short notes on the following : (10)
   a) Explosive forming
   b) Projection welding
   c) Blow moulding

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