

**FACULTY OF ENGINEERING****B.E. 3/4 (Mech.) I-Semester (New)(Main) Examination, November / December 2012****Subject : Manufacturing Processes****Time : 3 Hours****Max. Marks: 75****Note: Answer all questions of Part - A and answer any five questions from Part-B.****PART – A (25 Marks)**

1. Why are organic binders preferred in core making?
2. Differentiate between semi centrifugal and centrifugal casting.
3. Differentiate between HOT tears and Hot spots.
4. Why oxidizing flame is preferred while welding of copper and zinc alloys?
5. What are the advantages of lost wax process?
6. What is the principle of Resistance welding?
7. It is a general practice for casting of ferrous metals to cut the runner in the cope and the ingates in the drag. Why?
8. How are thin plastic films produced? And explain the difference between thick and thin plastic film forming.
9. Differentiate between Direct and Indirect extrusion.
10. What are the advantages of solid state welding process?

**PART – B (5x10=50 Marks)**

- 11.(a) Explain shell moulding process and mention application of this process. (5)  
(b) Explain directional solidification in metals. (5)
12. Explain the design of the following: (4x2.5)  
(a) Pouring basin (b) sprue  
(c) sprue base well (d) Pressurised and unpressurised gating system
- 13.(a) Explain the principle, advantages, limitations and applications of GMAW process. (5)  
(b) Explain the principle and applications of electron beam welding process. (5)
14. A hole 100mm diameter is to be punched in a steel plate of 6mm thick. The material is cold rolled cuo steel for which the maximum shear strength can be taken as 550 mpa with normal clearance on the tools, cutting is complete at 40% penetration of the punch. Give suitable diameter for the punch in order to bring the work within the capacity of a 200 KW press available on the top. (10)
- 15.(a) Explain the principle of friction welding and mention its advantages, limitations and applications. (5)  
(b) Explain blow moulding process and mention its advantages. (5)
16. Explain the following briefly (4x2.5)  
(a) Rubber Pad forming  
(b) Yield criteria for ductile materials  
(c) PAW  
(d) NDT
17. Explain the following briefly : (4x2.5)  
(a) CO<sub>2</sub> moulding  
(b) Design of sprue  
(c) Spring back  
(d) Stretch forming

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