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B..E/B.Tech DEGREE END SEMESTER EXAMINATIONS,NOV/DEC 2013

Manufacturing Engineering (R2008)

Fifth Semester

MF9301 CASTING AND WELDING TECHNOLOGY

Time:3 hrs

Max.Marks:100

Answer ALL Questions

Part A (10 x 2 =20 Marks)

1. What are the points should be considered for a good melting practice?
2. What is the importance of adding inoculants during melting of metals?
3. When foundry engineers opt for "thermal trickery" in casting design?
4. Make a brief note on plane of weakness.
5. What is the importance of the reference lines in welding symbol used in technical drawings?
6. State true or false "If the parts are not restrained for deformations, preheating the parts can increase the residual stresses". Justify your answer.
7. What is the difference between full mould casting and lost foam casting?
8. What are the characteristics of laser light?
9. What is meant by arc sensing?
10. Write short notes on any two casting defects.

Part B (5 x 16=80 Marks)

11. a.i) Explain the factors to be controlled during melting of aluminium. 8
ii) Explain the construction and operation of cupola furnace. 8
 12. a.i) Describe the principles of casting design by considering solidification rate 8
ii) Briefly discuss about the NRL method to arrive feeding distances in casting 8
- Or
- b.i) Briefly discuss about two types of gating system with their merits and demerits. 8
ii) Enumerate various types of slag trap systems used in gating system. 8

13. a.i) Explain the points to be remembered while designing welded structures subjected to fatigue loads. 8
- ii) Explain with an example how the capacity of the welded joint is determined. 8
- Or
- b.i) Draw and explain standard identification of welds employed in design drawings 8
- ii) Discuss the factors to be considered while design of weld for production 8
14. a.i) Explain with a neat sketch friction welding process. Mention its advantages and limitations. 8
- ii) Enumerate shell moulding process with sketch. 8
- Or
- b.i) Explain with necessary sketches magnetic moulding process. 8
- ii) Explain the high velocity oxy fuel spraying and applications 8
15. a.i) Explain any one type of non destructive test in welding inspection. 8
- ii) Explain weld seam tracking and its applications. 8
- Or
- b. Explain various devices used in a automated sand plant 16
