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B..E/B.Tech DEGREE END SEMESTER EXAMINATIONS,NOV/DEC 2012

Manufacturing Engineering (R2009)

Fifth Semester

MF9301 CASTING AND WELDING TECHNOLOGY

Time:3 hr

Max.Marks:100

Answer **ALL** Questions

Part A (10 x 2 =20 Marks)

1. Write short note on difficulties in melting copper alloys.
2. What is the importance of adding inoculants during melting of metals?
3. What do you mean by hot spots in castings?
4. Make a brief note on plane of weakness.
5. Which of the following has highest fatigue strength? Why?
Fully penetrated double weld, Partially penetrated double weld
6. State true or false “interrupted reference line is not used for fully symmetrical welds”.
Justify your answer.
7. Write down the difference between two types of squeeze casting.
8. What are the characteristics of laser light?
9. Write short note on weld positioners.
10. List out any four methods used in casting cleaning.

Part B (5 x 16=80 Marks)

11. i) Explain the factors to be controlled during melting of aluminium and its alloys for casting. 8
ii) Discuss about various types of degassing methods used during melting of metals 8
12. a.i) Explain how feeding distances were determined using NAL method of riser design. 10
ii) Enumerate the points should be kept in mind while choosing the positioning of the ingates. 6

Or

- b.i) Briefly discuss about pressurised and non pressurised gating system with their 8

merits and demerits.

- ii) Describe any two slag trap system used in gating system with necessary sketches. 8
13. a.i) Draw and explain standard identification of welds employed in design drawings 8
ii) Explain the manufacturing aspects of design of weldments. 8
- Or
- b.i) Explain with examples design of weld to transfer local forces. 8
ii) Discuss about residual stresses in the weld. 8
14. a. Explain with a necessary sketches various step of investment casting process. 16
- Or
- b.i) Explain the high velocity oxy fuel spraying and applications 8
ii) Briefly explain about electron beam welding. 8
15. a.i) Explain weld seam tracking and its applications. 8
ii) Discuss various steps involved in Liquid penetrant testing 8
- Or
- b.i) Write short notes on any four welding defects, causes and their remedies. 8
ii) Write short notes on any four casting defects, causes and their remedies. 8
