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

Manufacturing Engineering(R2012)

Third Semester

MF 8301 CASTING AND WELDING TECHNOLOGY

Max Marks:100 Duration: 3 Hrs

Answer ALL Questions

Part-A (10 x 2 =20 Marks)

1. What is the role of runner extension in gating system?
2. List out the ways to govern the flow of molten metal to reduce turbulence.
3. List out any two casting defect and their remedies.
4. What is the difference between hot chamber and cold chamber die casting process?
5. Make a note on polarity of welding.
6. What do you understand by the term weld thermal cycle?
7. What is the difference in torch arrangement in TIG and plasma welding?
8. Why vacuum is needed in EBW?
9. Write short notes on arc sensing.
10. Write short note on use of computers in foundries.

Part-A(5 x 16 =80 Marks)

11. i) Explain with neat sketches various allowances provided in the pattern. (8)

    ii) Enumerate three distinct stages of shrinkage during solidification of molten metal/alloys. (8)

12. a.i)Explain the steps involved in making green sand mould with neat sketches. (8)

    ii) What are the advantages of centrifugal casting process over conventional casting processes? Explain any one process. (8)

    Or

    b. Explain the steps involved in the investment casting process with neat sketches. (16)

13. a i)Explain different position of welding and their process requirement. (8)

    ii) Explain various flux coating and their roles in controlling weld quality (8)

Or

b) i) Enumerate any five welding defects and their remedies. (10)

ii) Explain the need for post and pre weld treatments. (6)

14.a) i) Explain Manual metal arc welding process with neat sketch. (8)

ii)Explain the three variables involved in friction stir welding? (8)

Or

b. i) Briefly explain the cycle of operation of Resistance spot welding process. (8)

ii) Briefly describe principle and mechanism of laser operation. (8)

15.a i)Briefly explain various sand preparation devices used in mechanized foundry. (8)

ii) Briefly discuss about the weld seam tracking methods. (8)

Or

b i) Explain about the automation of welding process in aero space industry (8)

ii)Discuss about the impact of mechanization in the foundry productivity. (8)
