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**B.E. (Part Time) End Semester DEGREE EXAMINATION, APRIL / MAY 2010**

Third Semester

Manufacturing Engineering

**PTMF 231 – WELDING AND CASTING**

(Regulation 2002)

Time : 3 Hours

Answer ALL Questions

Max. Marks 100

**PART-A (10 x 2 = 20 Marks)**

- 1) What do you mean by arc blow?
- 2) Make a short note on Electro gas welding.
- 3) How is the size of the spot weld determined?
- 4) Why should copper lines not be used for acetylene gas?
- 5) What is the shape practiced for riser? What is the recommended shape?
- 6) What do you mean by the term core print?
- 7) What are the functions of flux in melting metals and alloys?
- 8) Write a short note on the use of refractories for melting units?
- 9) What are the differences between porosity and blowholes?
- 10) How are the raw castings cleaned in a foundry shop?

**PART B-(5 × 16 = 80 marks)**

- 11) i) Explain the submerged Arc Welding Process with neat sketch. (8)  
ii) Explain about the different types of electrode used in arc welding processes. (8)
- 12) a) i) Explain the cycle of resistance welding process. (8)  
ii) Explain with neat sketch components of an Oxy-Acetylene gas welding equipment. (8)

Or

b) i) Describe the types of flames obtained in an Oxy-Acetylene gas welding process giving the applications. (8)

ii) Explain any one type hard facing process and its applications. (8)

13) a) i) Explain the various stages involved in a core making process. (8)

ii) Describe the process of investment casting (8)

Or

b) Briefly explain about various pattern allowances used while pattern making. (8)

ii) Explain with a neat flow diagram how sand reclamation of chemically bonded sand carried out. (8)

14) a) i) Explain the factors to be controlled during melting of SG iron. (8)

ii) Describe the principle of operation of Electric arc induction furnace. (8)

Or

b) i) Explain the factors affecting the choice of a furnace? (8)

ii) Explain with a neat sketch construction and operation of Cupola indicating various zones on it.

15) a) i) What is the role of mechanization in improving the productivity of the foundries (8)

ii) Write short notes on any two type of moulding machine. (8)

Or

b) i) What are the nondestructive tests used in casting inspection? Explain any one method. (8)

ii) Discuss about any four welding defects and their remedies (8)