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10AE35

Third Semester B.E. Degree Examination, June / July 2014
Manufacturing Processes

Time: 3 hrs. Max. Marks:100

Note: ***Answer FIVE full questions, selecting at least TWO questions from each part.***

PART – A

1 a. Explain the steps involved in casting process. **(08 Marks)**
b. What is pattern? Give the classification of patterns and explain sweep pattern. **(08 Marks)**
c. What is manufacturing? Indicate major classification. **(04 Marks)**

2 a. Explain hand moulding processes with sketch. **(08 Marks)**
b. List out various casting defects. Mention their causes and remedies. **(08 Marks)**
c. What is a core and give its classification? **(04 Marks)**

3 a. Explain the working principle of Jolt type moulding machine with sketch. **(08 Marks)**
b. Explain the continuous casting process with a neat sketch. **(08 Marks)**
c. Explain briefly CO_2 moulding process. **(04 Marks)**

4 a. Explain Tungsten Inert Gas (TIG) and submerged arc welding with necessary sketches. **(08 Marks)**
b. Explain oxy-acetylene gas welding with relevant sketch highlighting different zones in the gas flame. **(08 Marks)**
c. Differentiate between forward and backward welding. **(04 Marks)**

PART – B

5 a. Explain the three mechanism of soldering. **(08 Marks)**
b. Explain briefly : i) Eddy current inspection and ii) Magnetic particle inspection. **(08 Marks)**
c. Differentiate between soldering and brazing. **(04 Marks)**

6 a. Explain briefly nomenclature of a single point cutting tool. **(08 Marks)**
b. Draw merchant's circle diagram and analyse various cutting forces. **(08 Marks)**
c. Write a note on tool failure. **(04 Marks)**

7 a. What are the desired properties of cutting tool materials? List types of cutting tool materials and indicate their characteristics. **(08 Marks)**
b. List the properties of cutting fluids and factors which decide the selection of cutting fluids. Indicate types of cutting fluids. **(08 Marks)**
c. Write short notes on measurement of tool tip temperature. **(04 Marks)**

8 a. Explain Laser Beam Machining (LBM) process with the help of a neat sketch. **(08 Marks)**
b. Discuss with a neat sketch the process of metal removal in Ultra Sonic Machining (USM). **(08 Marks)**
c. State any two applications of the following:
i) Plasma Arc Machining (PAM).
ii) Electro Chemical Machining (ECM). **(04 Marks)**

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