

**Code No: 114DM****JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****B.Tech II Year II Semester Examinations, May - 2016****PRODUCTION TECHNOLOGY****(Common to ME, MCT, AME, MSNT)****Time: 3 Hours****Max. Marks: 75****Note:** This question paper contains two parts A and B.

Part A is compulsory which carries 25 marks. Answer all questions in Part A.

Part B consists of 5 Units. Answer any one full question from each unit.

Each question carries 10 marks and may have a, b, c as sub questions.

**PART- A****(25 Marks)**

- 1.a) Can a finished casting be used as a pattern for making mould? Justify your answer. [2]
- b) What are expendable patterns and why they are used? [3]
- c) Why is cleaning of metal important for successful resistance welding? Explain. [2]
- d) Explain the factors to be considered in selection of weld joint. [3]
- e) Why do most welding failures occur in HAZ? Explain. [2]
- f) Describe the types of fluxes used in soldering and their applications. [3]
- g) Explain role of friction and strip tensions in rolling load and process. [2]
- h) Discuss the functions of die angle in wire drawing. [3]
- i) Describe classification of extrusion processes. [2]
- j) What properties of metals contribute to good forgeability? [3]

**PART-B****(50 Marks)**

- 2.a) What are the materials that are generally used for making patterns? Explain the reasons for their choice.
- b) What are the common allowances provided on patterns? Why and how they are provided? Give suitable examples. [5+5]

**OR**

- 3.a) Describe the solidification of a pure metal with a neat sketch.
  - b) Large castings are not made by investment casting. Comment. [5+5]
- 4.a) With the help of a neat sketch of welding torch explain the oxy acetylene process of welding.
  - b) Discuss the merits of AC and DC and explain the VI characteristics of arc and power sources. [5+5]

**OR**

- 5.a) Derive an equation for the calculation of standard time for arc welding.
- b) What is the ideal sequence for pressure application during resistance welding? [5+5]

- 6.a) What types of structure and property modifications can occur in welding heat zones?  
b) What are the defects or problems that can occur in the molten metal region of a fusion weld? [5+5]

**OR**

- 7.a) What are the various methods of brazing? Describe them in brief.  
b) What is the difference between shielded and unshielded arc welding process? Give a schematic representation of shielded metal arc. [5+5]
- 8.a) Explain recrystallization and grain growth processes and their effect on properties of a metal worked component.  
b) Explain the selection of optimum hot working temperature. [5+5]
- OR**
- 9.a) What are different press working operations? Classify them.  
b) Explain with a neat sketch roll bending. [5+5]
10. What are the characteristics of any forging machine? Explain the process of closed die forging. Explain the importance of flash. [10]
- OR**
- 11.a) Derive the forces required in extrusion process.  
b) Describe the types of metal flow that occur in extrusion. Why are they important? [5+5]

---ooOoo---