

Production Process-I/ MECH /09-12-15

(3 Hours)

[ Total Marks : 80

- N.B. : (1) Question no. 1 is compulsory  
 (2) Attempt any three questions out of remaining five questions.  
 (3) Figures to the right indicate full marks.  
 (4) Assume suitable data wherever necessary.  
 (5) Notations carry usual meaning.

1. (a) Explain various welding defects with their causes and remedies. 10  
 (b) Differentiate between soldering and brazing. 5  
 (c) Compare transfer molding and compression molding. 5
2. (a) A cylindrical riser is to be designed for a sand casting mould. The size of steel casting is 7.5 cm x 12.5 cm x 2 cm. The previous observation have indicated that the total solidification time for casting is 96 sec.  
 The cylinder riser have  $(d/h) = 1$ . Find the size of riser so that its solidification Time is 120 sec. 10  
 (b) Discuss friction welding with its applications 5  
 (c) Differentiate between open and closed die forging. 5
3. (a) Discuss various rolling defects. 6  
 (b) Differentiate between core and core print. 6  
 (c) With a neat sketch explain resistance welding process giving its applications 8
4. (a) Write advantages and disadvantages of powder metallurgy. 6  
 (b) With a neat sketch explain swaging process. 6  
 (c) What are the different NTD methods? Explain any two methods in detail. 8
5. (a) Explain the screw type injection moulding with neat sketch. Discuss its advantages, limitations and applications. 8  
 (b) Discuss different methods of making powder in powder Metallurgy 6  
 (c) Explain different gas welding equipments 6
6. Write short note on 20
  - (i) Pattern allowances
  - (ii) Casting defects
  - (iii) Thermit welding
  - (iv) Thread rolling