



(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 mold. The size of steel casting is 7.5 cm x 12.5 cm X 2cm. 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