

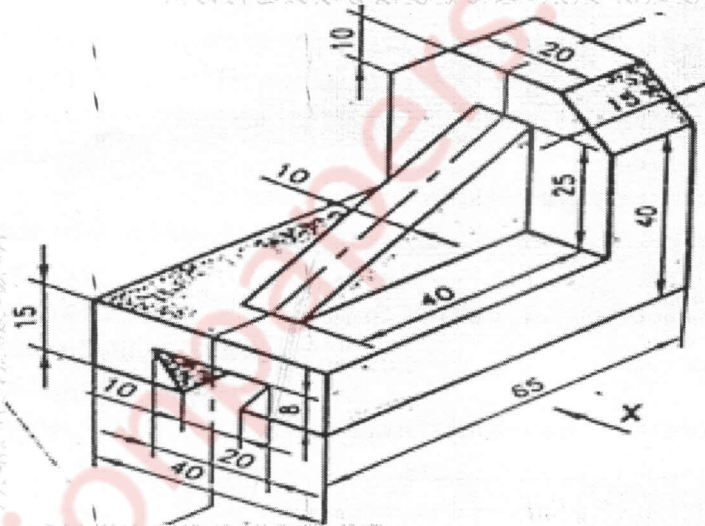
Time -3Hrs

Marks-80



Note - Question 1 is compulsory  
Attempt any 3 out of remaining 5  
Assume suitable data wherever necessary.

- Q1 The component shown below is to be sand cast. Material for component is steel. Assuming suitable data answer the following 20
- a) Select parting line.
  - b) Design and sketch the required pattern and core boxes.
  - c) Design the gating system.
  - d) Calculate the required size of riser using Caines's method.
  - e) Sketch the views of mould showing gating system and riser.



- Q2 Give reasons for the following 20
- a) Patterns are colour coded.
  - b) Overflows or flow-offs are often provided with die casting dies.
  - c) Forgings are inherently stronger than castings.
  - d) Extrusion pressure required in Indirect Extrusion is lesser than Direct Extrusion.
  - e) Pressure die casting process is not suitable for ferrous metals and alloys
  - f) Flash and gutter is provided only with finisher cavity in multi impression forging die.
  - g) Roll grooves are tailored and ragged.

- Q3 Differentiate between (Any 4) 20
- Pressurized gating ratio and unpressurized gating ratio.
  - Hot chamber die casting and cold chamber die casting.
  - Open forging and closed forging.
  - Backward and forward extrusion.
  - Forging hammers and presses.
- Q4
- Explain with neat sketches different stages of Investment Casting, their application, advantages and disadvantages. 08
  - Explain Shell mould casting process in details. 08
  - Write a short note on selection of parting line in closed die forging 04
- Q5
- Explain the necessary condition of biting in rolling process 06
  - Why cupola is not suitable for melting of steels. 06
  - With neat sketches, explain the various defects which could arise out from forging process. 08
- Q6 Write a short note on (Any 4) 20
- Induction Furnace.
  - Multi impression Forging.
  - Classification of rolling mills.
  - Shell moulding casting process.
  - Wire Drawing.

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