

sem-VI

Mould & Metal Forming Tech. / PROD / 08-12-15

Q.P. Code : 6387

(3 Hours)

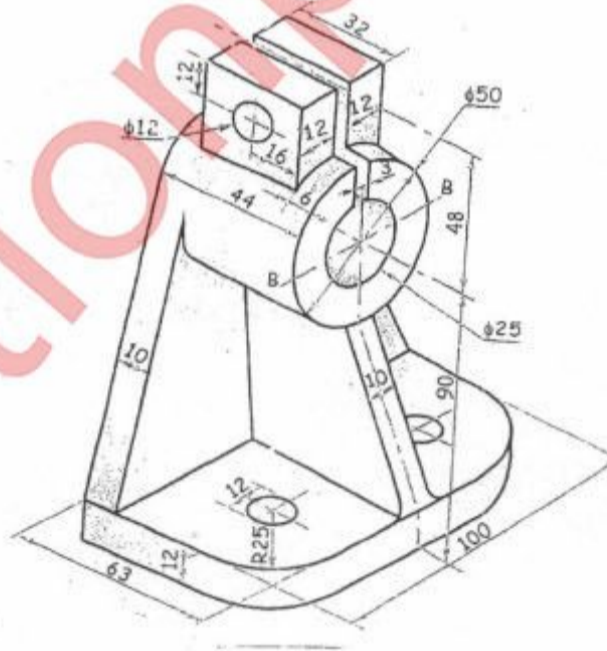
[Total Marks : 80



1. Figures to the right indicate full marks.
2. Attempt any four questions including Question No.1 is compulsory.
3. Illustrate answers with sketches if required.
4. Assume any suitable data wherever necessary.

Q.No.1. The component shown in the figure no.1 is to be sand cast. Material of the 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 mold showing gating system and riser.



(all dimensions are in mm)

Figure 1

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MD-Con. 10377-15.

Q.No.2. Answer the following:

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- a). Difference between Induction furnace and Electric arc furnace.
- b). Explain working principle of board drop hammer.
- c). Risers are placed on the top of thicker portion of the mold.
- d). Explain working principle of core blower.
- f). Discuss about Reho- casting process.

Q.No.3. Give reasons for the following:

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- a). Tapered sprues are used in sand mold casting process.
- b). Double allowance is provided on master pattern.
- c). Forgings are inherently stronger than casting.
- d). Runner extension is provided in sand mold gating system.
- e). Internal taper allowance provided on forging die is more than external taper allowance.
- f). Flow-offs are used in pressure die casting process.
- g). Fillet and corner radii are provided on forging dies.
- h). Pattern is larger than the casting.

Q.No. 4. Answer the following.

- a). Explain Investment casting process.
- b). Discuss working principle of belt drop hammer.
- c). How parting line is selected in sand mold casting process?
- d). What is necessary condition for biting in rolling process?

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Q.No. 5. Write a note on:

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- a). Pattern allowance.
- b). Universal rolling mill.
- c). Hydrostatic extrusion process.
- d). Defects in casting.
- e). Cupola furnace.

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Q.No. 6. Answer the following

- a). Explain defects in forged products.
- b). How seamless tubes are manufactured in extrusion process?
- c). Define stress, strain , true stress, true strain and permeability.
- d). Explain Thixo casting process.

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