17328

21314

4 Hours/100 Marks

Seat No. | | | | | | | | |

Instructions : *(1)* ***All*** *questions are* ***compulsory****.*
(2) Illustrate your answers with neat sketches ***wherever*** *necessary.*
(3) Assume suitable data, if ***necessary****.*

MARKS

1. Attempt **any five** of the following : **20**
   a) Draw plate type saddle support.
   b) Draw the symbols of following welded joint
      i) Double bevel butt joint
      ii) Plug weld.
   c) Draw ISMT section, H = 150, b = 140, t = 10. Give suitable corner radius.
   d) Draw diagram of column support.
   e) Draw single line isometric symbol for following flanged pipe fittings
      i) Tee
      ii) Cross
   f) Draw conventional symbol of snap head type riveted joint.
   g) Draw the symbols of following pipe fittings
      i) Cap
      ii) Union

2. Attempt **any two** of the following : **(2×8=16)**
   a) The square prism side of base 50 mm an axis 90 mm is resting on base on H.P. with base edges equally inclined to V.P. It is penetrated by horizontal square prism base 30 mm an axis 90 mm such that axis of both solid bisect each other at 90°. One of the rectangular face of the horizontal prism is inclined at 45° to H.P. Draw projection of solid shown lines of intersection when axis of penetrating prism is parallel to V.P. **8**

MARKS

b) A cylinder of diameter 60 mm and axis 100 mm is resting on its base on ground. It is penetrated by horizontal cylinder of diameter 50 mm and length 100 mm is such that the axis of both solid bisect each other at 90°. The axis of penetrating solid is parallel to V.P. Draw projection of solid showing curves of intersection. **8**

c) A vertical vessel 7 m height and 3.5 m diameter is erected at a height of 10.5 m from the ground. Prepare erection drawing in two views. Assume suitable cross-section for structure. Show welding symbols. **8**

3. Attempt **any two** of the following : **(2×8=16)**

a) Draw using conventional symbols of the following. **8**

i) Rivet fitted in the workshop with countersink on one side only.

ii) Rivet fitted on site without countersinking.

b) Two unequal I section ISMB-500, ISLB-300 is connected to make long single column. Show the drawing in two views. **8**

c) Square prism side of base 50 mm length of axis 90 mm is resting on his base on H.P. with its base edges equally inclined to V.P. It is penetrated by a horizontal square prism of base 35 mm and axis 90 mm such that axis of penetrating prism is 6 mm in front of axis of vertical axis and parallel to V.P. The rectangular face of horizontal prism is equally inclined to H.P. Draw projection of solid showing the lines of intersection. **8**

4. Attempt **any two** of the following : **(2×8=16)**

a) A square prism side of base 50 mm and axis 90 mm resting on base on H.P. with an edge of its base inclined at 45° to V.P. It is penetrated by a horizontal triangular prism 40 mm by 90 mm. Such that the axis of both solids bisect each other at 90°. One of the rectangular faces of triangular prism is inclined at 45° to H.P. Draw intersection of solid showing lines of intersection. **8**

MARKS

b) A letter 'E' is to be prepared by four pieces of 10 mm cross section. The height and width of letter is 70 and 50. This letter is to be attached on a plate of 8 mm thickness. Prepare welding drawing showing symbols as per B.I.S. **8**

c) Draw how truss for 5 m span and height 1.5 m. Also show gussets plate, rafter, strut, main tie and sling. **8**

5. Attempt **any two** of the following : **(16×2=32)**

a) Fig. No. 1 shows single line orthographic layout of piping system. Convert it into double line orthographic layout views of the piping system. Also prepare a bill of material. **16**

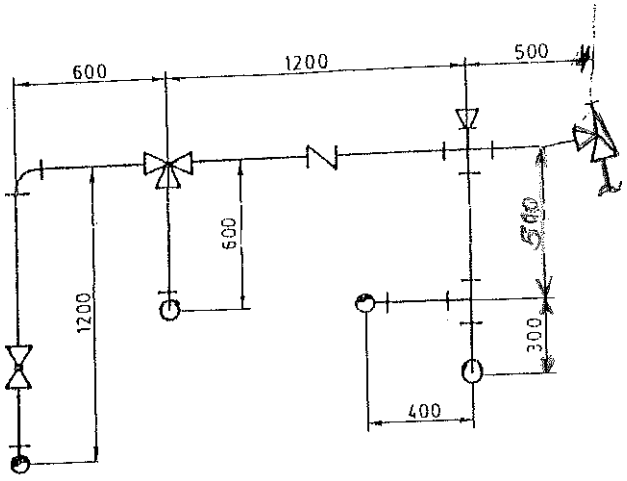
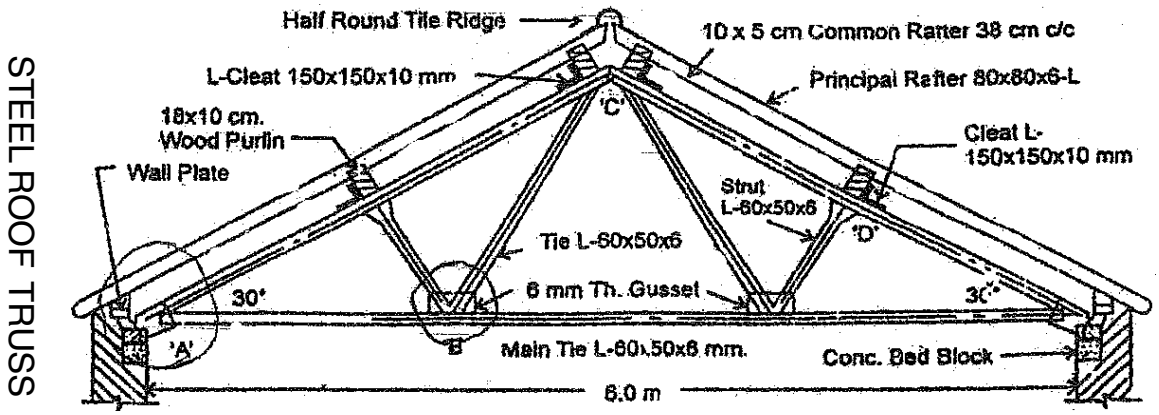


Fig. No. 1

b) Show by free hand proportionate sketches (T.V. and F.V.) of Beam to column connections for I Section for ISMB 300 and ISLB 200 connection is made on Web by riveting. **16**

MARKS

c) Fig. No. 2 shows roof truss for 6 m span. Draw details of connection of joint at 'A', 'B', 'C', and 'D'. **16**



Dimensions are in mm where not given

Note : 1. All rivets are 15 mm dia,

2. All gussets are 6 mm thick

3. All members of truss are 6 mm thick

Fig. No. 2
