17328

15162

4 Hours / 100 Marks Seat No. | | | | | | | | |

Instructions : *(1)* ***All*** *questions are* ***compulsory****.*
(2) Illustrate your answers with neat sketches ***wherever*** *necessary.*
(3) Figures to the ***right*** *indicate* ***full*** *marks.*
(4) Assume suitable data, if ***necessary****.*
(5) Use of Non-programmable Electronic Pocket Calculator is ***permissible****.*
(6) Mobile Phone, Pager and any other Electronic Communication devices are ***not*** *permissible in Examination Hall.*

Marks

1. Attempt **any five** of the following. **(5×4=20)**

a) Draw IST section H = 150, t_w = 10, t_f = 8, b =140.

b) Draw single and double line orthographic symbols for.

i) Plug ii) Cross

iii) Check valve iv) Reducing socket

c) Prepare free hand proportionate sketch, when a beam ISLB 200 is connected to beam ISMB 300.

d) Draw hanger type pipe support.

e) Draw following conventional symbol for riveted joints

i) snap head ii) flat head

f) Draw conventional representation of following types of weld.

i) Seam weld ii) Double bevel butt

iii) Fillet weld iv) Spot

g) Write the nature of intersection in the following cases, show with sketches.

i) Prism to cylinder ii) Prism to Prism

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

a) Draw erection drawing in two views for a vertical vessel 8 m height, 2.5 m diameter and thickness 60 mm. It is elevated at height of 14 m from the ground to the top of vessel. Assume suitable members for structure showing welding symbols.

b) Show by neat proportionate sketches when two unequal I-section IS MB 500 and ISLB-300 is connected to make long single column.

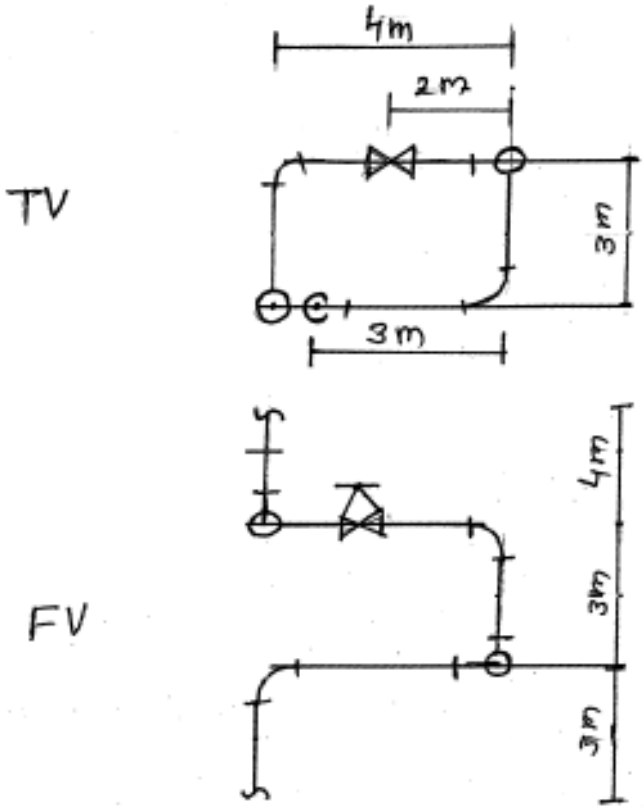
P.T.O.

Marks

c) A vertical cylinder of 75 mm diameter is penetrated by another cylinder of same size. The axis of penetrating cylinder is parallel to both H.P. and V.P. and is 9 mm away from the axis of vertical cylinder. Draw the projections showing curves of intersection.

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

a) Figure shows orthographic layouts of a piping system. Draw the single line isometric view.



b) A vertical cone, diameter of base 75 mm and axis 100 mm long, is completely penetrated by a cylinder of 45 mm diameter. The axis of the cylinder is parallel to H.P. and V.P. and intersects the axis of cone at a point 28 mm above the base. Draw the projections of solids showing curves of intersection.

c) Draw a neat sketch of double riveted double strap butt joint. Draw sectional F.V. and T.V. Take suitable plate thickness.

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

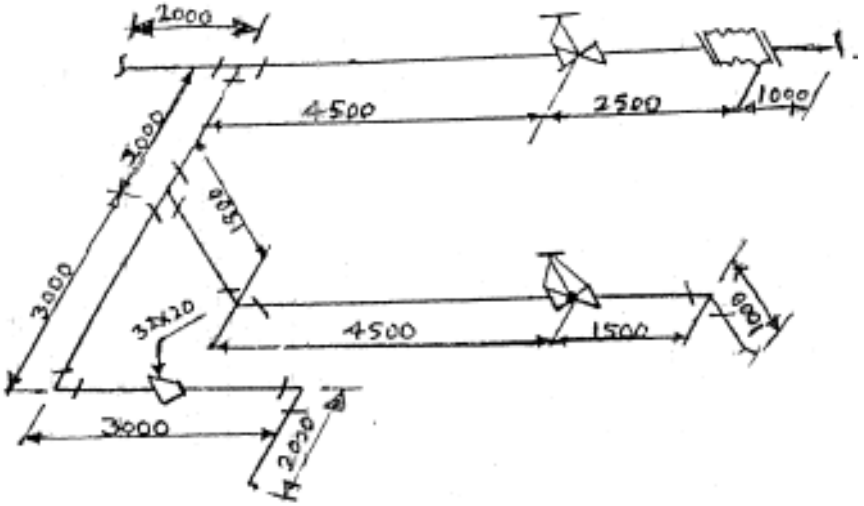
a) Show by means of neat dimensional sketches the shapes of following rivets

i) Conical head

ii) Rounded counter sunk head

b) A vertical cylinder of 60 mm diameter is penetrated by a horizontal square prism, base 40 mm side, the axis of which is parallel to the VP and 10 mm away from axis of the cylinder. A face of the prism makes an angle of 30° with the H.P. Draw the projections, showing curves of intersection.

c) Draw a single line developed orthographic view of piping system shown in Fig.



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

a) Draw neat sketches of Fink truss and Howe truss.

b) Draw roller support and saddle support used for pipes.

c) Draw diagram of supports in erection

i) Bracket support

ii) Column support

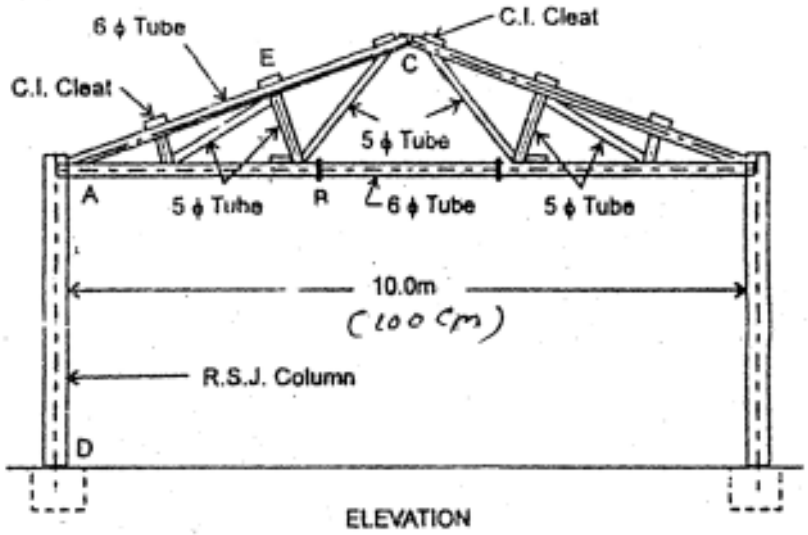
6. Attempt **any two** of the following. **(2×8=16)**

a) A beam 15 MB 200 is to be connected to a column of 15 MB 300, at the flange. Show the joints in two view with free hand proportionate sketch.

b) Prepare the erection drawing in FV and SV for a horizontal tank 2 m diameter and 8 m long, which is elevated at a height of 8 m upto centre of tank. Assume suitable cross sections for supporting members. Show detailing of welded joints.

Marks

c) Figure shows roof truss for 10 meter span. Draw details of connection at C, D, A, E.



All dimensions are in cm.