17205

21819

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

Instructions – (1) All Questions are *Compulsory.*

(2) Answer each next main Question on a new page.

(3) Illustrate your answers with neat sketches wherever necessary.

(4) Figures to the right indicate full marks.

(5) Assume suitable data, if necessary.

(6) Use of Non-programmable Electronic Pocket Calculator is permissible.

(7) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. a) A pictorial view of an object is shown in Fig. No. 1. Draw the following. **12**

(i) Sectional front view, section PQ 6

(ii) Top view 3

(iii) Side view from left. 3

Marks

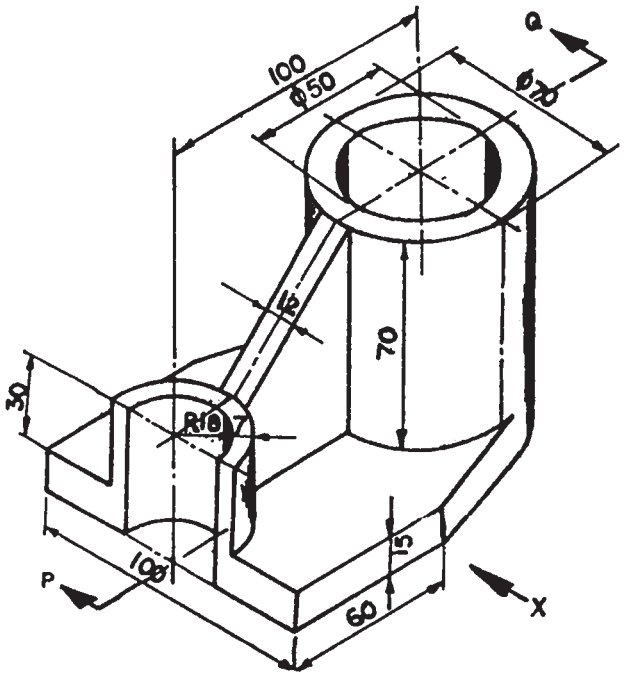

Fig. No. 1

b) Fig. No. 2 shows the F.V. and S.V. of the object. Draw the following views.

(i) Front view 2

(ii) Top view 4

(iii) Right hand side view 2

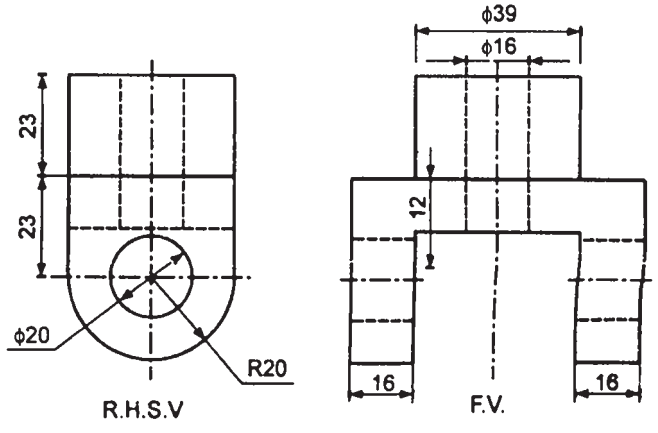

Fig. No. 2

Marks

2. a) The top view of a 85 mm long line PQ measures 75 mm, while the length of it's front view is 60 mm. Its one end P is in the H.P and 20 mm in front of V.P. Draw the projections of PQ and determine its inclination with H.P and the V.P **8**

b) **Attempt any ONE of the following:** **8**

(i) A hexagonal plane of 30 mm side rests in H.P on one of its sides with the plane of hexagaon inclined 30° to H.P and side in H.P perpendicular to V.P. Draw the projections.

(ii) A circular plate of 60 mm diameter is inclined to H.P in such a way that top view appears to be an ellipse of minor axis 35 mm. Draw the projections of plate and find its inclination with H.P.

3. **Attempt any TWO of the following:** **16**

a) A hexagonal prism edge of base 25 mm and axis 60 mm long rests on H.P. On an edge of base with that edge perpendicular to V.P and axis inclined 45° to H.P and parallel to V.P. Draw projections.

b) A tetrahedron of 60 mm long edges has one edge in the H.P with that edge perpendicular to V.P and the triangular face containing that edge is vertical. Draw the projections.

c) Draw the projection of the cone base 50 mm diameter and axis 60 mm. lying on the H.P on one of its generators with axis parallel to V.P.

Marks

4. Attempt any TWO of the following: **16**

a) A pentagonal pyramid base of edge 40 mm and axis 70 mm long has its base on the H.P. It is cut by a section plane perpendicular to V.P and inclined at 45° to H.P and bisecting the axis. Draw its sectional top view. Front view and true shape of section.

b) A square prism base 40 mm side axis 80 mm long has its base on the HP and face equally inclined to V.P. It is cut by a plane perpendicular to V.P inclined at 60° to H.P and passing through a point on the axis 60 mm above the H.P. Draw front view sectional top view and true shape of section.

c) A cylinder of 55 mm diameter and 70 mm has its axis vertical. It is cut by a section plane perpendicular to V.P inclined at 45° to HP and intersecting the axis 40 mm above the base. Draw front view, sectional top view and true shape of section.

5. Attempt any TWO of the following: **16**

a) Develop the lateral surface of square prism of 50 mm side of base, with a circular hole, drilled in it as shown in Fig. No. 3.

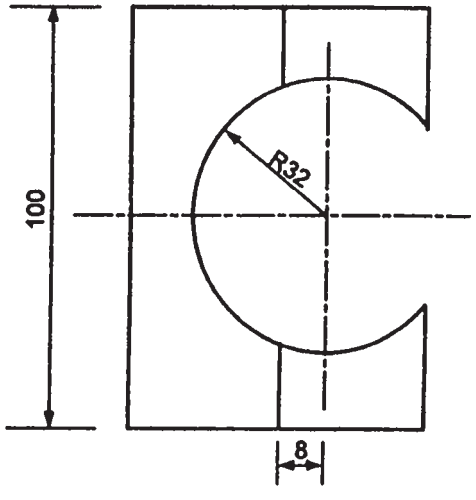

Fig. No. 3

Marks

b) Fig. No. 4 shows a right circular cylinder of diameter 60 mm and height of axis 100 mm it is cut as shown. Draw the development of its lateral surface.

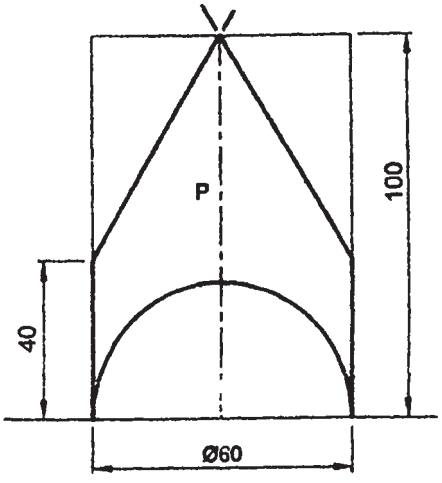

Fig. No. 4

c) A cone resting on H.P is having diameter of base. 45 mm and height 60 mm. If is cut by a vertical plane perpendicular to V.P and 10 mm away from the axis of cone. Draw the development of lateral surface of the cone.

6. Draw neat and proportionate figure of any FOUR of the following: **16**

a) Rag foundation bolt

b) Withworth thread

c) Hexagonal nut

d) Hexagonal headed bolt

e) Double rivetted lap joint

f) Eye bolt.