17205

16117

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

Marks

1. a) **A pictorial view of the object is shown in Figure No. 1. Draw the following views (use first angle method).**

(i) Sectional front view section along A-A 5

(ii) Top view 5

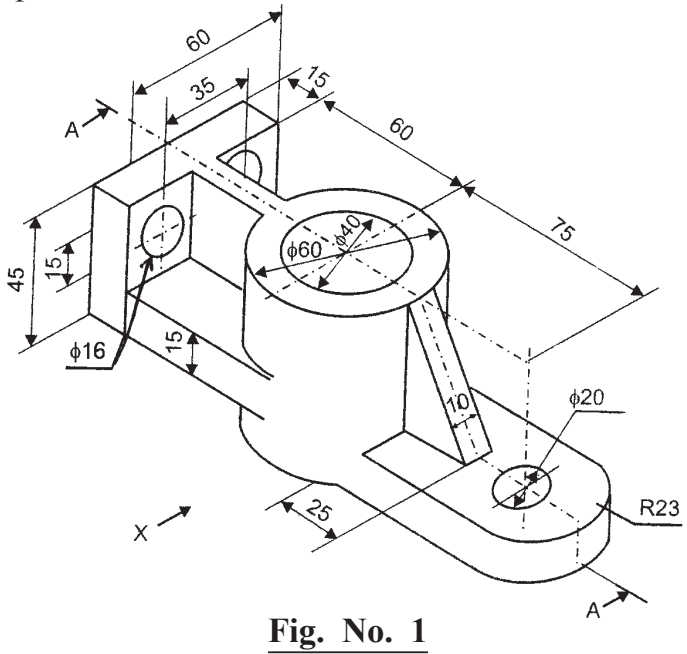

Fig. No. 1

P.T.O.

Marks

b) Figure No. 2 shows front view and L.H.S.V. of an object. Draw the following views of the object. (Use first angle method)

(i) Front view 2

(ii) Top view (missing view) 4

(iii) L.H.S.V. 4

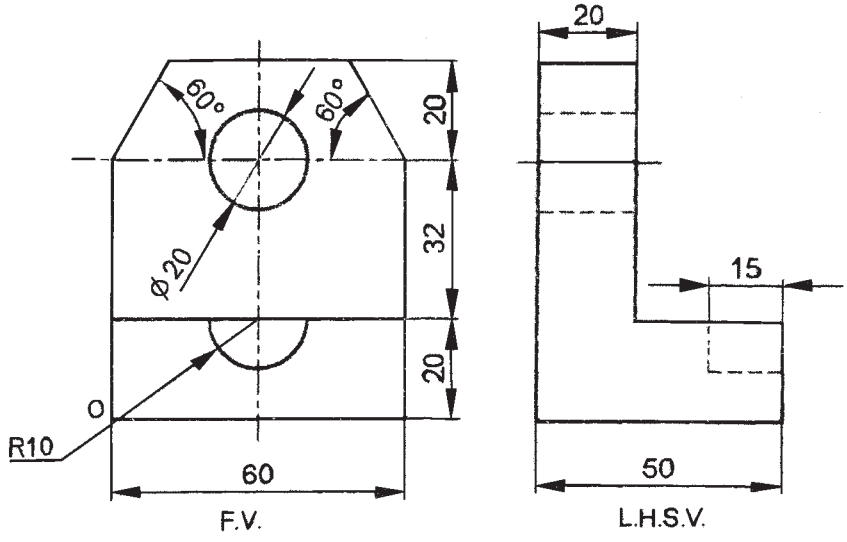

Fig. No. 2

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

a) The line PQ 85 mm long is parallel to H.P. and inclined at 45° to V.P. The end P is 15 mm above H.P. and 20 mm infront of V.P. Draw its projections and determine distance of Q from V.P. Assume point Q infront of V.P.

b) A hexagonal plane of 30 mm side rests in H.P. on one of its sides, with the plane of hexagon inclined at 30° to H.P. and side in H.P. perpendicular to V.P.

c) A circular plate of negligible thickness of 50 mm diameter, is resting on H.P. on one of its point of periphery. The surface of plate is perpendicular to V.P. and inclined at 30° to H.P. Draw its projections.

Marks

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

a) A right circular cylinder, 60 mm base diameter and 70 mm length of axis is lying on its curved surface on H.P. Draw the projections of it when the axis is inclined at 30° with V.P. and parallel to H.P.

b) Draw the projection of a pentagonal prism on auxillary plane, base 25 mm side and axis 50 mm long, resting on one of its rectangular face on H.P. with axis inclined at 45° to V.P.

c) A square prism edge of base 25 mm and height of axis 60 mm rests on H.P. on a corner of its box with axis inclined at 30° to H.P. and parallel to V.P. All the faces of the prism are equally inclined to V.P. Draw the projections.

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

a) A pentagonal pyramid side of box 50 mm and axis 100 mm long is resting on its base on H.P. Such that one edge of the base is parallel to V.P. It is cut by a sectional plane perpendicular to V.P. and inclined at 60° to H.P. and passing through a point on the axis 55 mm from the base. Draw:

(i) Front view 2

(ii) Sectional top view 4

(iii) True shape of section 2

b) A right circular cylinder, base 60 mm diameter and height 120 mm stands vertically on H.P. It is cut by a section plane, perpendicular to V.P. and inclined to H.P., such that true shape of the section is an ellipse with major axis 80 mm long. Draw:

(i) Front view 2

(ii) Sectional top view 3

(iii) True shape of the section 2

(iv) Determine inclination of the section plane with H.P. 1

Marks

c) A cone, base 60 mm diameter and height 70 mm, is resting on the base in H.P. It is cut by a vertical section plane inclined at 30° to V.P. and 12 mm away from the axis. Draw.

(i) Sectional front view 4

(ii) Top view 2

(iii) True shape of section 2

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

a) The elevation of a steel chimney 600 mm long in diameter fitted to an inclined roof. (Refer Figure No. 3). The axis of the cylindrical chimney is 150 mm from the ridge. Develop the lateral surface of the chimney (use suitable scale).

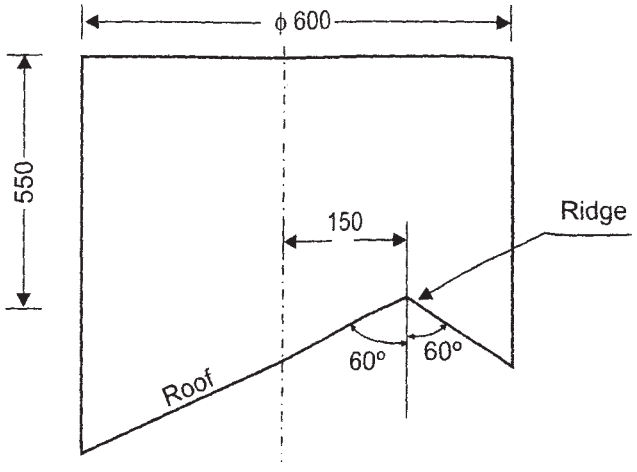

Fig. No. 3

b) A square prism with side of base 50 mm and axis height 100 mm is resting on its base on H.P., with all vertically faces equally inclined to V.P. A square hole of 30 mm side is drilled centrally through the prism. The axis of the hole bisects the axis of the prism at right angle and is perpendicular to V.P. Draw the development of the lateral surface of the prism.

Marks

c) A square pyramid 50 mm side of base and axis 80 mm long is resting on its base on H.P., with edges of base equally inclined to V.P. A square hole of side 25 mm is cut through it in such a way that the axis of hole intersects the axis of the pyramid and is 25 mm perpendicular to V.P. and parallel to H.P. and its faces are equally inclined to H.P. Draw:

(i) Front view 2

(ii) Top view 2

(iii) Development of the surfaces of the pyramid. 4

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

a) Acme thread

b) Buttress thread

c) Hexagonal nut

d) Eye foundation bolt

e) Single rivetted single strap butt joint

f) Muff. Coupling