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04 Hours / 70 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. Attempt any TWO of the following : **8**

a) The front view of line AB is parallel to H.P., 10 mm above it and 60 mm long. End A is 10 mm in front of V.P. and end B is 54 mm in front of V.P., Find the true length and inclination of line with V.P.

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

c) A line AB is 60 mm long with inclinations of 45° to H.P. and 30° to V.P. The end A of the line is 15 mm above H.P. and 12 mm in front of V.P. Draw the projections.

Marks

2. Attempt any TWO of the following : **12**

a) A circular plate of 60 mm diameter is inclined to the H.P. in such a way that, the top view appears to be ellipse of minor axis 36 mm. Draw the projections of the plate and find the inclination with H.P.

b) For the pictorial view shown in Figure No. 1. Draw –

i) Sectional view along A–A.

ii) Top view.

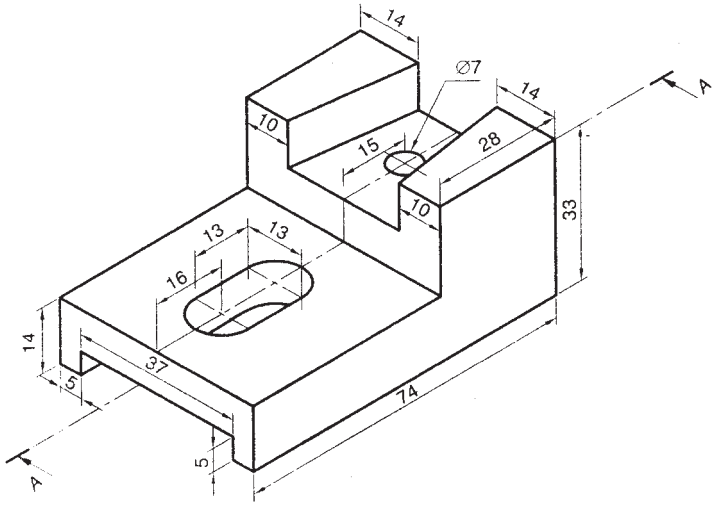

Fig. No. 1

c) For the pictorial view shown in Figure No. 2. Draw –

i) Sectional view along A–B.

ii) Plan

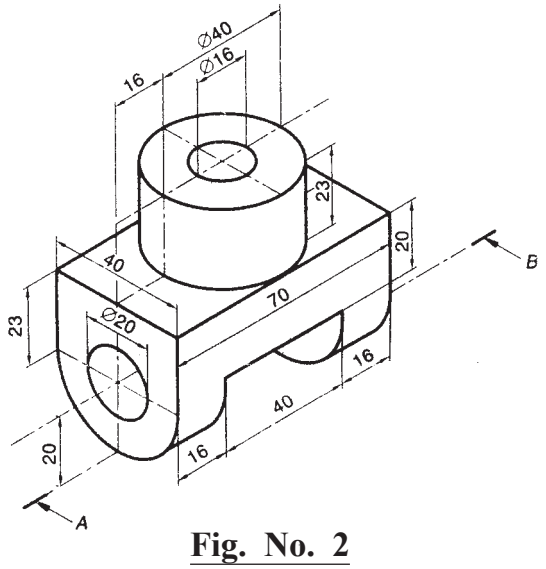

Fig. No. 2

Marks

3. Attempt any THREE of the following : **18**

a) A cube of 30 mm side is resting on one of its corner on the H.P. Draw the projections when the base is inclined at 45° to H.P. and axis is parallel to V.P.

b) A cylinder with base diameter 50 mm and height 60 mm is resting on a point of circumference on H.P. with axis inclined at 45° to H.P. and parallel to V.P. Draw the projections.

c) A square prism side of base 40 mm, height 75 mm kept on the H.P. on its base with its rectangular faces equally inclined to V.P. It is penetrated by a horizontal square prism of side of base 30 mm, axis length 75mm such that the axes of the two prisms bisect each other at right angles. The two rectangular faces of the horizontal square prism are equally inclined to H.P. and axis is parallel to both H.P. and V.P. Draw the projections of solids showing the lines of intersection.

d) A vertical cylinder of 60 mm diameter is completely penetrated by another cylinder of 40 mm diameter. Length of both cylinders is 80 mm. Considering the axis of penetrating cylinder parallel to V.P., draw the projections showing curves of intersection.

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

a) For the pictorial view shown in Figure No. 3. Draw –

i) Sectional view along A.A.

ii) Top view

iii) Side view

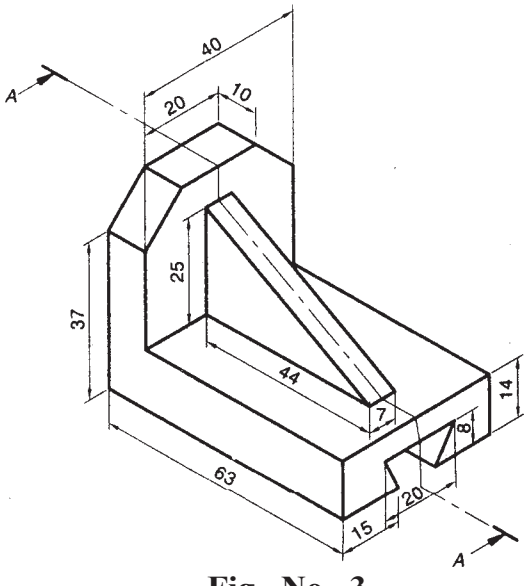

Fig. No. 3

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b) A cone with base diameter 40 mm and height 60 mm is kept on V.P. on a point of base circle such that the apex is 45 mm in front of V.P. Draw the projections, when the axis is parallel to H.P.

c) A square prism with side of base 60 mm and height 100 mm is resting on its base on H.P., with all vertical faces equally inclined to V.P. A hole of 40 mm diameter is drilled centrally through it. The axis of the hole bisects the axis of the prism at right angle and is perpendicular to V.P. Draw the development of lateral surface of the prism.

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

a) A cone with base diameter 80 mm and height 80 mm is kept on the H.P. on its base. It is penetrated by a horizontal cylinder of diameter 40 mm with its axis parallel to V.P. and intersecting the axis of the cone at a distance of 30 mm above the base cone. Draw the projections of solid showing curves of intersection.

b) Figure No. 4 shows the front view and top view of a tray. Draw the development of lateral surface on a flat sheet such that it can be folded in the form of tray.

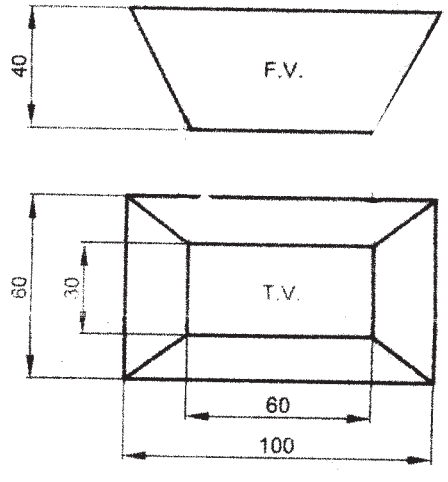

Fig. No. 4

Marks

c) Draw the development of lateral surface of cone shown in Figure No. 5.

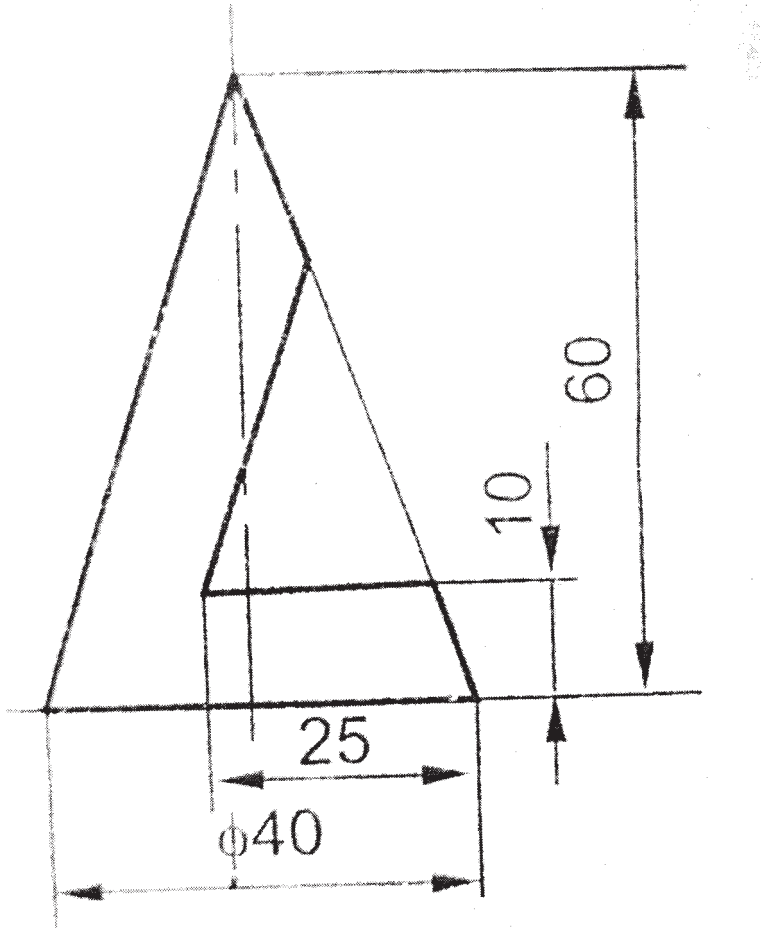

Fig. No. 5