FE-207

Total Number of printed pages : 04

F.E. Semester –II (Revised Course 2016-17)
EXAMINATION OCTOBER 2020
Engineering Graphics

[Duration : Two Hours] **Total Marks 60]**

Instructions :
1) Answer THREE FULL QUESTIONS with ONE QUESTION FROM EACH PART.
2) Missing data, if any may be suitably Assumed.
3) Figures to right indicate full marks.

Part-A

Q. 1 (A) A stone is thrown from a building 6 meters high. It just crosses the top of a palm tree 12 meters high. Trace the path of the projectile if the horizontal distance between the building and the palm tree be 5 meters. Also find the distance of the point, from the building, where the stone falls on the ground. (10)

(B) The projections of line AB which is in the first quadrant are perpendicular to xy line. The end A is 20 mm from both the reference planes HP and VP. End B is 40 mm from HP and 55 mm from VP. Determine its true length, inclinations with HP and VP. (10)

Q. 2 (A) The projectors of two points A and B are 60 mm apart. Point A is 24 mm above HP and 43 mm in front of VP. Point B is 48 mm above HP and 36 mm in front of VP. A third point C is 50 mm from A and 62 mm from B and lies in HP. Draw the projections of the triangle thus formed. (10)

(B) An object 'O' is placed 1.2 m above the ground and in the centre of a room 4.2m × 3.6m × 3.6m high. Determine graphically its distance from one of the corners of the roof. (10)

Q. 3 (A) A plate in the form of isosceles triangle, having base 45 mm and height 60 mm is resting on one of its edges in HP. It is inclined to HP such that the top view is seen as an equilateral triangle of 45 mm side. Draw the projection and measure its inclination with HP. Also draw the projection when the edge resting on HP is inclined at 45° to VP. (10)

(B) Draw the projections of a cylinder base circle diameter 40 mm and axis 70mm long standing on a point on the base circle on HP with its axis inclined at 30° to HP and 45° to VP. (10)

Part B

Q. 4 (A) A cylinder with base circle diameter 50mm and axis 80mm long is standing on its base on the ground. It is cut by an auxiliary inclined plane bisecting the axis of the cylinder in such a way that the true shape of the section is an ellipse with major axis 70mm. Draw the FV, (10)

sectional TV and true shape of the section.

(B) Draw the projections of a right circular cone, diameter of base 60 mm and height 75mm, resting on ground on its base. Show the shortest path traced by a point P starting on the circumference of the base, moving around the cone and returning back to the starting position. (10)

Q. 5 A right regular hexagonal pyramid is having base 25 mm side and axis 70 mm long. It is resting on its base on the HP with two of its edges perpendicular to the VP. It is cut by a section plane, perpendicular to the VP and inclined at 30 deg to the HP bisecting the axis above the base. Draw the FV, sectional TV, and sectional side view, true shape of the section and development of the lateral portion of remaining part of the pyramid. (20)

Q. 6 (A) Figure Fig. 6A shows pictorial view. Draw the following views using first angle projection method. (10)

(i) Front view looking in direction of arrow

(ii) Top view

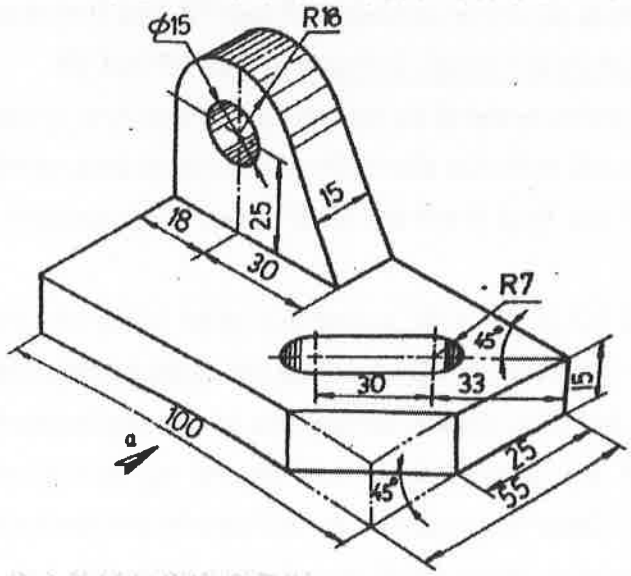

Fig. 6A

(B) Two orthographic views are given in fig. 6B below. Draw an isometric view. (10)

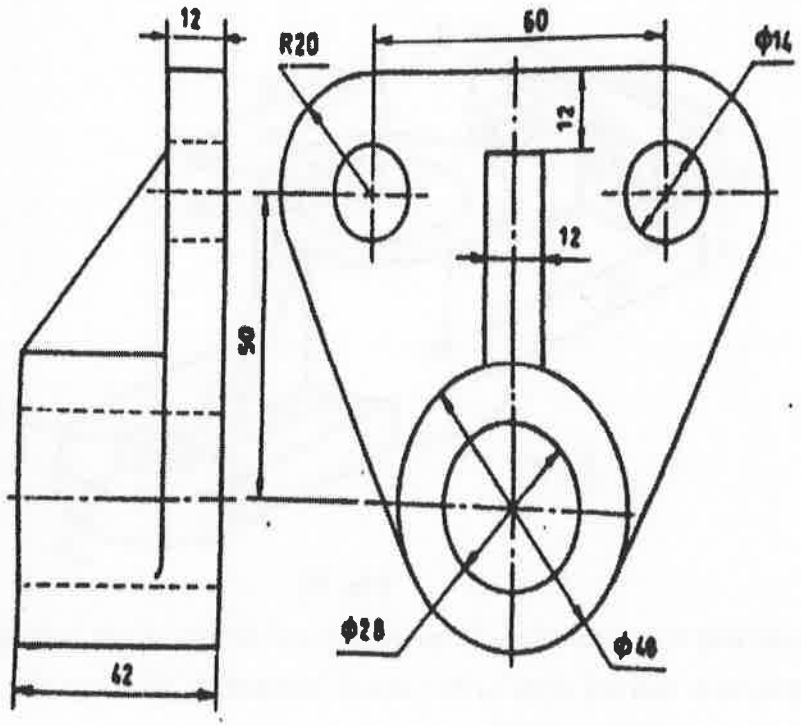

FIG. 6B

Part C

Q. 7 (A) A thread is unwound from a cylindrical reel of 40 mm diameter. Draw the locus of the free end of the thread for one turn and tension in the thread is kept constant while unwinding. Name the curve. (10)

(B) Fig. 7B shows the pictorial view. Draw the following views using first angle projection method. (10)

(i) Sectional front view taking section along A-B.

(ii) Top view.

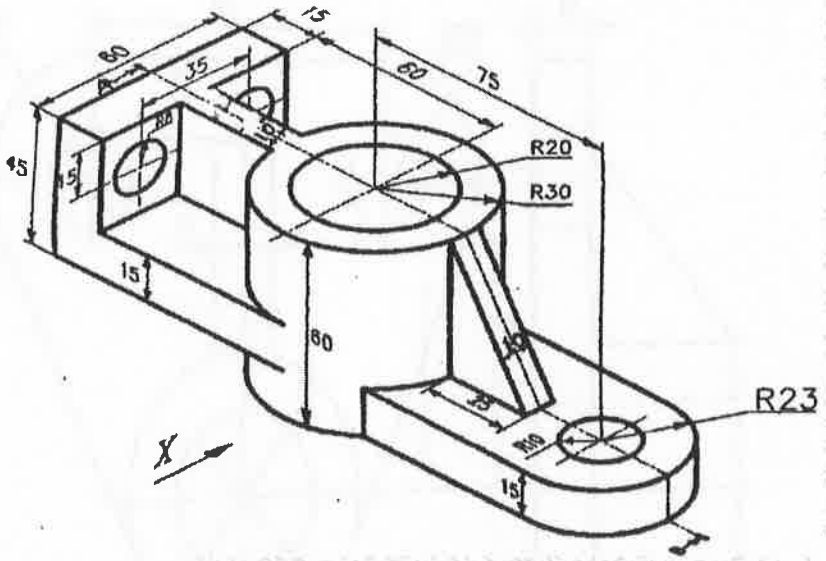

Fig. 7B

Q. 8 (A) A right circular cone, diameter of base 60 mm and height 75 mm is lying on HP on one of its generators such that top view of the axis is inclined at 30° to xy line. Draw its projection when vertex is kept close to VP. (10)

(B) Fig. 8B shows two orthographic views. Draw an isometric view. (10)

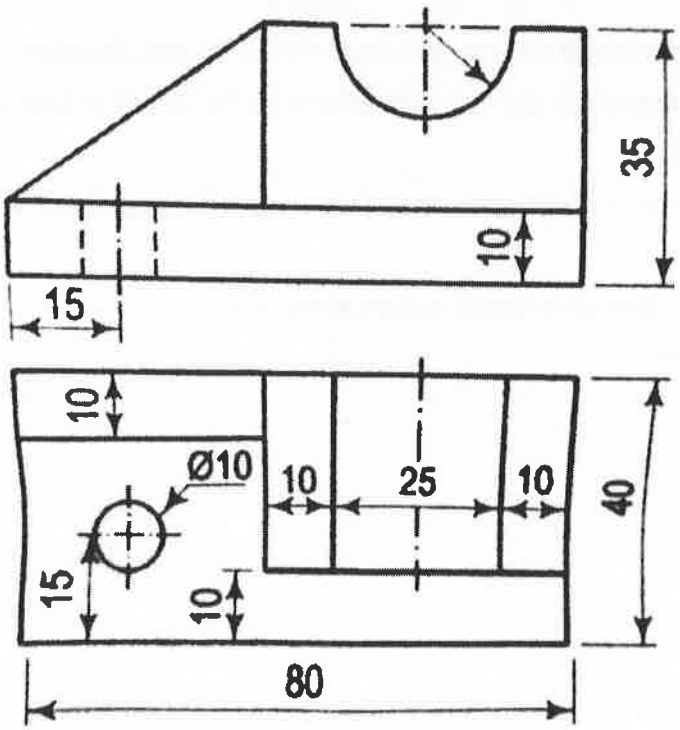

Fig. 8B