Total No. of Printed Pages:3

F.E. Semester- II (Revised Course 2016-17)
EXAMINATION JANUARY 2021
Engineering Graphics

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

Instructions:
1. Answer THREE FULL QUESTIONS with ONE QUESTION FROM EACH PART.
2. Assume any missing data.
3. Figures to right indicate full marks.

Part – A

Q.1 a. Two fixed points are 90mm apart, a point P moves such that the sum of the distances from the two fixed points is always constant and equal to 150mm. Trance the path of point P and name the curve. **(10)**

b. A line AB, 90mm long is inclined at 30^0 to the HP and its end A is 12mm above the HP and 20mm in front of the VP. Its Front view measures 65mm. draw the Top View of AB and determine its inclination with the VP. **(10)**

Q.2 a) A Rhombus shaped plate with negligible thickness having diagonals of 60mm and 40mm respectively is resting on a corner in HP. The longer diagonal is parallel to VP and inclined to HP such that the Top View appears as a square. Draw the Front View, Top View and Side View and determine the angle made by the plate with HP. **(10)**

b) Two Apples on a tree are respectively 2m and 3.5m above the ground and 1.5m and 2m away 0.2m thick compound wall, but on opposite sides of it. The distance between the Apples measured along the ground and parallel to the wall is 2.7m. Determine the real distance between the mangoes. **(10)**

Q.3 a) Draw the projections of a Pentagonal plane of side 25mm resting on HP on one of its edges. The Surface of the Pentagon is inclined at 45^0 to the HP and the perpendicular drawn from the midpoint of the resting edge to the opposite corner makes an angle of $30^0$with the VP. **(10)**

b) A right regular Tetrahedron of 50mm side is resting on one of its triangular faces on HP having a side of that face perpendicular to the VP. It is cut by an auxiliary inclined plane so that the trues shape, of the section is a square of 24mm side. Set the required cutting plane and draw the front view, sectional top view and the true shape of the section. Also find the inclination of the cutting plane with the HP. **(10)**

Part- B

Q.4 a) A cone, base circle diameter 40mm and axis 60mm long is lying on one of its generator in the HP with its axis making an angle of 30^0 with VP. Draw the projections of the cone. **(10)**

b) A cylinder base circle diameter 40mm and axis 60mm is standing on its base on ground. A hole of diameter 25mm is drilled in the cylinder in such a way that the axis of the hole is **(10)**

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perpendicular to VP and intersects the axis of the cylinder at 30mm from the base. Draw the development of the lateral surface of the cylinder with the hole.

Q.5 a) A square pyramid, edge of base 50mm ad height 70mm, is resting on its base in HP with one of its base edges perpendicular to the VP. An auxiliary plane cuts the pyramid bisecting its axis and inclined at 45^0 to the HP. Draw the front view, sectional top view, true shape of the section and development of the remaining portion of the pyramid. **(20)**

Q.6 a) Figure 6. A shows Isometric view of an object. Draw the following views using First Angle Projection method. **(10)**

i. Sectional Front View (A-A), looking in direction of arrow X
ii. Top View

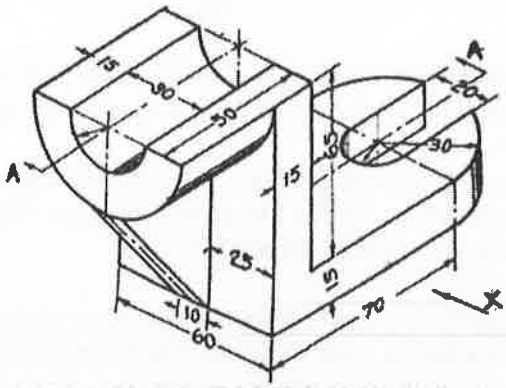

Figure 6.a

b) Draw the Isometric view from the given Orthographic views shown in Figure 6. b. **(10)**

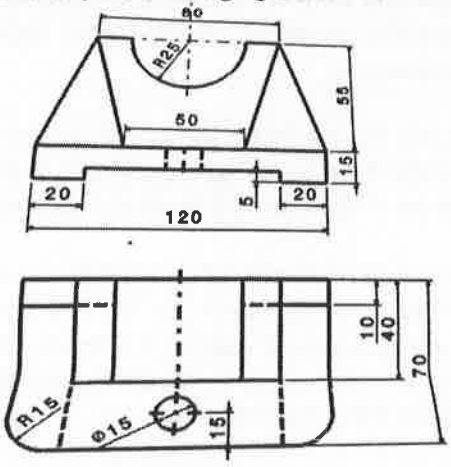

Figure 6. b

Part- C

Q. 7 a) Figure 7.a shows Isometric view of an object. Draw the following views using First Angle Projection method. **(10)**

i. Front View, looking in direction of arrow X

ii. Top View
iii. LHS View

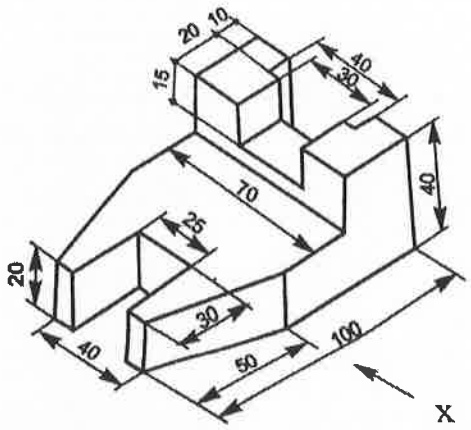

Figure 7.a

b) A circle of 40mm diameter rolls on a horizontal line for half revolution and then on a line upwards at an angle 60^o for another half revolution. Draw the curve traced out by a point P (initially lying at the ground), on the circumference of the circle. **(10)**

Q. 8 a) A right regular Hexagonal prism, edge of base 25mm and axis 65mm long, rests on one of its base corners on HP with its axis inclined at 45 degrees to HP and the top view of the axis inclined at 40 degrees to VP. Draw the projections of given solid. **(10)**

b) Draw the isometric view from the given Top View and Front View of the objects shown below: **(10)**