GANPAT UNIVERSITY
B.Tech. Sem-I (A)(IT,CE,EC,BM & I) Examination Nov-Dec 2010
Subject: ME-102 Engineering Graphics

Max. Time: 3 hours   Max. Marks: 70 Marks

Instructions:
(1) Attempt all question.
(2) Right figure indicates full marks.
(3) Assume required data if necessary.
(4) All dimensions are in mm.

SECTION-1

Q.1   (11)

(a) A pendulum OC pivoted at O, is 120 mm long. Its swings 30^0 to right of vertical and also 30^0 to the left of vertical. Insect, initially at O reaches at point C, when the pendulum completes two oscillations. Draw the path of the insect, assuming motion of insect and of pendulum as uniform.

OR

(a) A rolling circle of 25 mm radius is rolls on a straight line without sliding and slipping. A point P is at the contact point between rolling circle and straight line. Draw the engineering curves and give the name of the curves.

Q.2   (12)

(a) Draw the orthographic projection using 1st angle system.
1. Front view from X direction
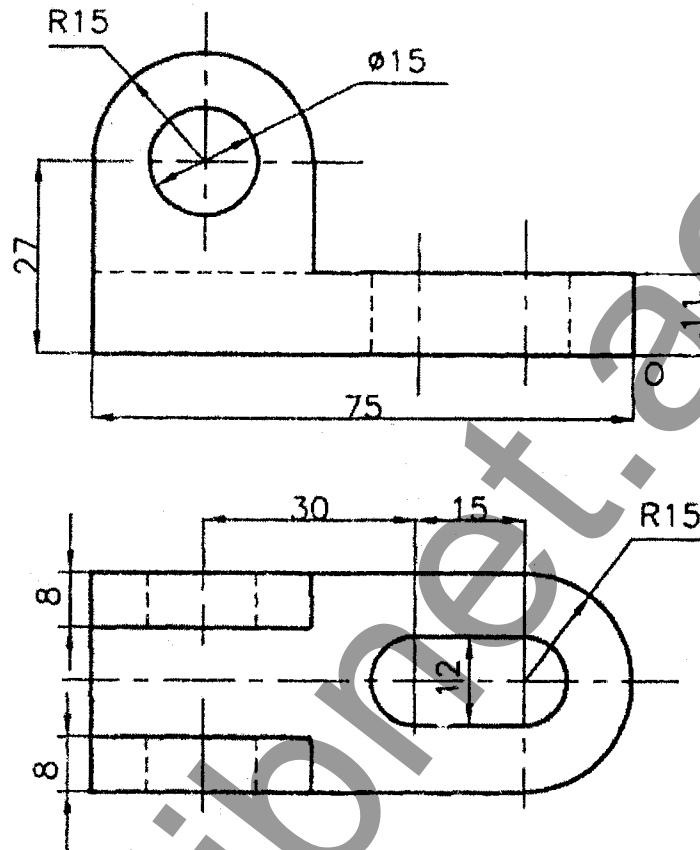2. Top view
3. R.H.S.V

OR

(a) Draw the Isometric view from given two view of object

Q.3 **Attempt any three** (12)
(a) Double riveted single cover butt joint.
(b) Dome nut.
(c) Cotter joint
(d) Eye foundation bolt.

SECTION-2

Q.4 (12)

(a) ABCD is rhombus of diagonal AC = 70 mm and BD = 40 mm. Its corner A is in the H.P. and the plane is inclined to the H.P. such that the plane appears to be a square. The plan of diagonal AC makes an angle of 20^0 to the V.P. Draw the projection of the plane and find its inclination with H.P.

OR

(a) A hexagonal pyramid of 30 mm side of base and 45 mm length of axis is resting on one of its triangular faces on H.P. Draw the projections of the pyramid when its edge of base which is in H.P. is inclined at 60^0 to the V.P.

Q.5

(a) A pentagonal pyramid, side of base 40 mm and height 80 mm, is resting on H.P. on its base with one of the edges of the base away from the V.P. is parallel to V.P. It is cut by an A.I.P. bisecting the axis, the distance of the section plane from the apex being 20 mm, Draw the elevation and sectional plan of pyramid and draw the true shape of the section. Find the inclination of the section plane with the H.P.   **(12)**

OR

(a) A square prism, side of base 50 mm and height 70 mm, is resting on H.P. on its base with one of the edges/sides of the base inclined at 30^0 to V.P. The above prism is penetrated by horizontal prism, side of base 32 mm and length 96 mm. Rectangular faces of the horizontal prism are equally inclined to H.P. and V.P. both. The axes of the two prisms bisect at right angle. Draw the projections and show the line of intersection.

Q.6

(a) A line CD, 80 mm long, has its end C 20 mm behind V.P. and 30 mm below H.P. while its end D 60 mm behind V.P. and 50 mm below H.P. draw the projections of line CD and find its H.T., V.T. and inclinations of the line with H.P. and V.P.   **(7)**

(b) Construct the pentagon using the Circle method.   **(4)**

END OF PAPER