GANPAT UNIVERSITY
B. TECH. SEM.-II (ME, MC, CI, EE)
REGULAR EXAMINATION MAY/JUNE-2012
ME-102 ENGINEERING GRAPHICS

[Time: 3 Hours]   [Total marks:70]

Instructions:
   (1) All questions are compulsory.
   (2) Right figure indicate full marks.
   (3) Only scientific calculator is allowed.
   (4) Retain all the construction/ projection lines.
   (5) Figures drawn in the question paper are not to the scale.
   (6) Use your own judgment of dimensions which are not given.
   (7) All dimensions in the sketches are in mm.

SECTION-I

Que.1 Pictorial view of the object is given in **Figure 1.** Draw (i) Elevation, (ii) L.H.S.V. and   **[12]** (iii) Top plan in the 1st angle system.

Fig.-1

OR

Que.1 Pictorial View of the object is given in **Figure - 2.** Draw (i) Full Sectional Front View   **[12]** along H-H, (ii) T.V. and (iii) R.H.S.V. in 3rd Angle Projection System.

Fig.-2

Que.2 In **fig.- 3,** F.V. and Top View of the object are given in 1st angle projection method. Draw its isometric view. **[11]**
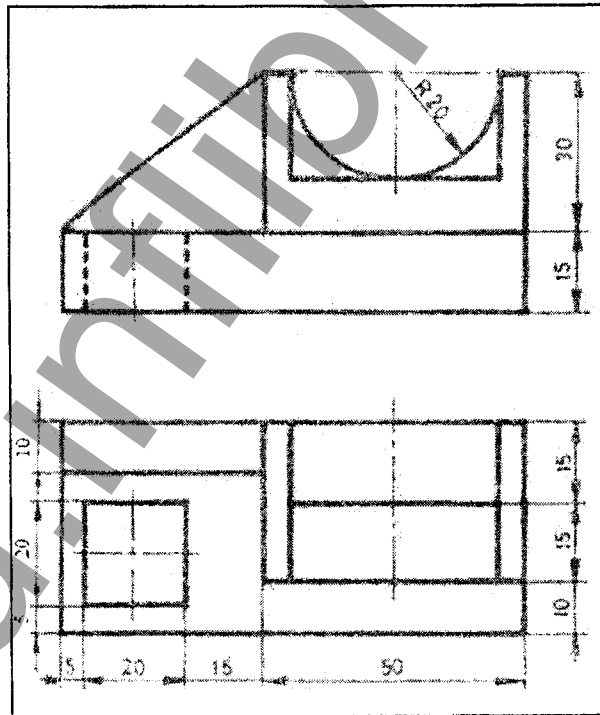

Fig.-3

OR

Que.2 Attempt following.

(a) Construct an Archimedean spiral of one convolution, given the maximum and minimum [7]
     radii as 55 mm and 31 mm respectively. Draw tangent and normal to the curve at a point
     above 15 mm from horizontal centre line.

(b) Draw free hand sketches of following: [4]
    (i) castle nut   (ii) Double riveted lap joint

Que.3 Attempt following.

(a) The end P of the staircase PQ, 3000 mm long, slides vertically on a wall and its end Q   [9]
    slides horizontally away from the wall. Find the locus of the midpoint of the staircase
    PQ.

(b) Draw following lines and write their uses   [3]
    (i) Hidden line   (ii) Cutting plane line   (iii) Long break line

SECTION - II

Que:4 A line AB, having its end A 25 mm above H.P. and 20 mm in front of the V.P. The end [12]
B is 85 mm above the H.P. and 50 mm in front of V.P. The projector distance between
these ends is equal to 80 mm. Draw the projections of AB and show its true length,
angle with the H.P. and the angle with the V.P.

OR

Que:4 A regular pentagon PQRST, of 20 mm sides, has its side PQ in the V.P. and inclined at [12]
an angle of 30° to the H.P. The corner P is 15 mm above H.P. and the corner S is 20 mm
in front of V.P. Draw the projection of plane and find its inclination with V.P.

Que:5 A cube of 50 mm long edges is resting on H.P. on one of its corners, with one of the [11]
body diagonals parallel to H.P. and inclined at 45° to the V.P. Draw the projections of
the cube.

OR

Que:5 A cylinder, diameter of base 43 mm and height 58 mm is resting on H.P. on its base. It [11]
is cut by A.I.P. in such a way that the true shape of section is ellipse with major axis 60
mm and minor axis 43 mm. Find the inclination of A.I.P. with H.P. and draw three
projections.

Que:6 Attempt following.

(a) A regular hexagonal pyramid (30x70) is resting on H.P. on its base with two edges of [8]
    base parallel to V.P. It is cut by A.I.P. making 60° with H.P. and passing through one of
    the corners of the base. Draw the development of the truncated pyramid.

(b) Draw projections for following points.   [4]
    (i)   Point A is on H.P. and 50 mm in front of V.P.
    (ii)   Point B is 40 mm above H.P. and on the V.P.

END OF PAPER