Ganpat University
B. Tech. (ME/MC/CL/EE/MR) Sem. II
CBCS Regular Examination May/June - 2013
2ME102 Engineering Graphics

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

Instructions:
  (1) All questions are compulsory.
  (2) Retain all the construction/ projection lines.
  (3) Figures drawn in the question paper are not to the scale.
  (4) Use your own judgment of dimensions which are not given.
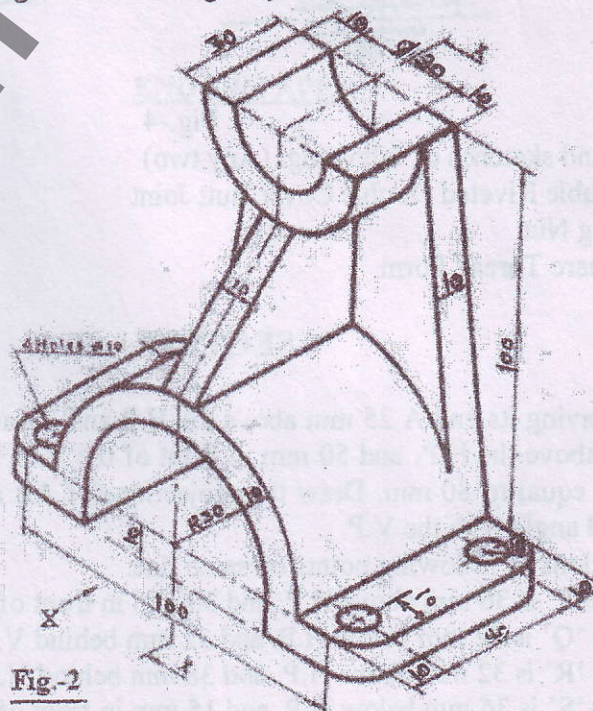 (5) All dimensions in the sketches are in mm.

SECTION-I

Que.1 Using 1st angle projection method, draw (i) F.V., (ii) L.H.S.V., and (iii) T.V. of the object shown in **Figure – 1**. [12]

Fig-1
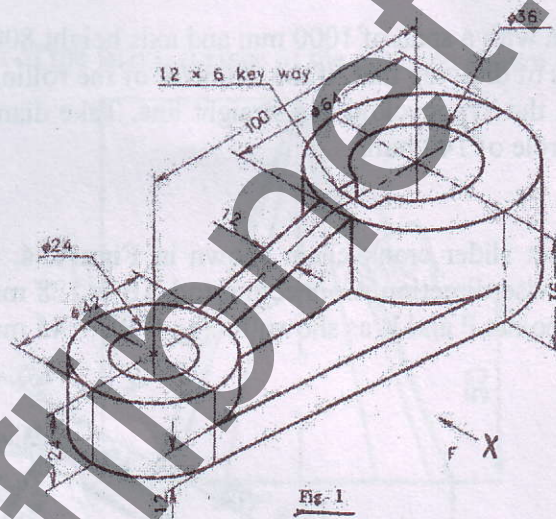
OR

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

Fig.-2

Que.2 The front view and right hand side view of an object are given in **figure – 3**. Draw its [12]
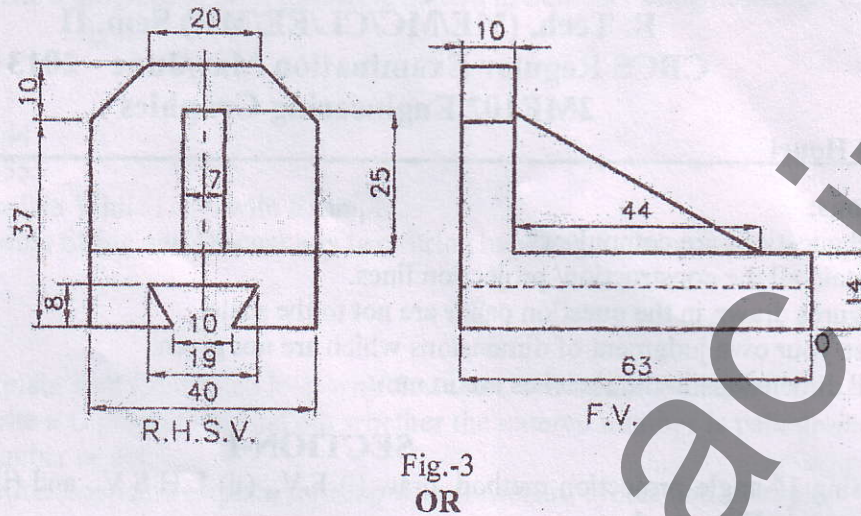Isometric View.

Fig.-3

OR

Que.2

(A) Draw a parabola with a span of 1000 mm and axis height 800 mm using rectangle method. [06]

(B) Prove by means of drawing that, if the diameter of the rolling circle is half the diameter of a [06]
directing circle, the hypocycloid is a straight line. Take diameter of rolling circle of 70 mm
and directing circle of 140 mm.

Que.3

(A) OBA is an offset slider crank chain shown in **Figure.-4**. Crank OB is 30 mm long and [07]
rotates in clockwise direction. Connecting rod AB is 128 mm long. Offset is 40 mm. Draw
the loci of two points P and R as shown in Fig.-4 PB = 45 mm and BR = 30 mm.
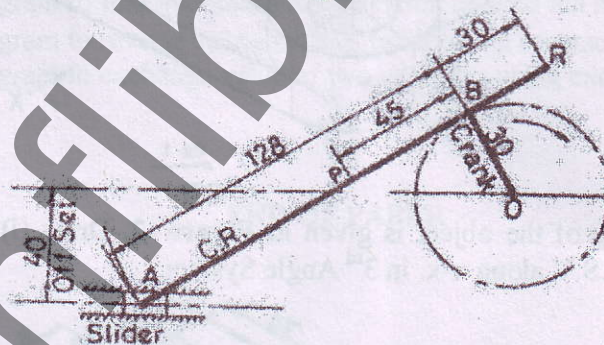

Fig.-4

(B) Draw free hand sketches of following: (Any two) [04]
    (i)   Double Riveted Double Cover Butt Joint
    (ii)   Ring Nut
    (iii) Square Thread Form

SECTION – II

Que.4

(A) A line AB, having its end A 25 mm above the H.P and 20 mm in front of the V.P. The end [08]
B is 85 mm above the H.P. and 50 mm in front of the 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 H.P. and angle with the V.P.

(B) Show projections of following points on same line. [04]
    (i) A point 'P' is 36 mm above H.P. and 30 mm in front of V.P.
    (ii) A point 'Q' is 22 mm below H.P. and 32 mm behind V.P.
    (iii)A point 'R' is 32 mm above H.P. and 38 mm behind V.P.
    (iv)A point 'S' is 36 mm below H.P. and 15 mm in front of V.P.

Que.4

(A) A regular hexagonal plate 50 mm side is resting on one of its corners in H.P. The diagonal [08] thorough that corner is inclined at 40° to H.P. and the plan of that diagonal inclined to V.P. by 30°. Draw projection of hexagonal plate.

(B) Illustrate following types of line with their application. [04]
    (i) Short dashes medium
    (ii) Continuous thick

Que.5 A cone diameter of base is 60 mm and height 90 mm is resting on H.P. on the point of [12] periphery of the base. Axis of cone makes 60° with the H.P. and 30° with the V.P. Draw the projection of the cone when the apex is nearer to V.P.

OR

Que.5 A cube side 50 mm is resting on H.P. on its base with all the vertical faces equally inclined [12] to V.P. It is cut by A.I.P. in such a way that the true shape of the section is regular hexagon. Find the inclination of cutting plane with H.P. and draw projections and the true shape of section.

Que.6

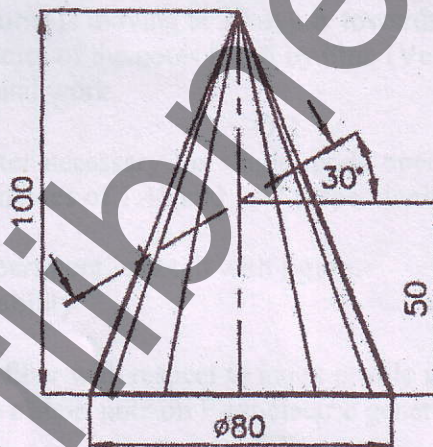(A) Draw the development of the lateral surface of the cut cone shown in Figure – 5. [08]

Fig.- 5

(B) Enlist applications of development of surfaces. [03]

END OF PAPER