Total No. of Questions : 5]   [Total No. of Printed Pages : 3

Roll No. ....

BE-105(GS)

B. E. (First/Second Semester)
EXAMINATION, Dec., 2011
(Grading System)
(Common for all Branches)
ENGINEERING GRAPHICS
[BE – 105(GS)]

Time : Three Hours

Maximum Marks : 70

Minimum Pass Marks : 22 (D Grade)

Note :   Attempt all questions as per the internal choices. All questions carry equal marks.

1. Solve any *two* of the following questions :

   (a) A distance of 140 km between two stations on a railway map is represented by a length of 70 mm. Find the R. F. of the scale of the map and construct a diagonal scale to read distances on the map, correctly to a kilometre and long enough to measure 300 km. Also mark on this scale length corresponding to 176 km and 204 km.

   (b) Draw an Ellipse by Concentric Circle Method, given the major and minor axes as 80 mm and 50 mm respectively.

   (c) Using a scale of 1 : 20, draw the locus of the end point of a cable unwinding itself from a drum of 800 mm diameter such that the unwound cable is always taut. Also draw a tangent and normal at any point on the curve.

P. T. O.

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2. The top view of a straight line AB 72 mm long, measures 62·4 mm while length of its front view is 49·2 mm. Its end A is in the V. P. and 12 mm above the H. P. Draw the projections of the straight line and determine its inclinations with H. P. and V. P.

Or

A line AB 120 mm long is inclined at 45° to H. P. and 30° to the V. P. Its mid point C is in V. P. and 20 mm above H. P. The end A is in the third quadrant and B is in the first quadrant. Draw the projections of the line AB.

3. (a) Draw the projections of a Rhombus having diagonals 100 mm and 40 mm long. The bigger diagonal is inclined at 30° to H. P. with one of the end points in H. P. and the smaller diagonal is parallel to both the planes.

Or

A rectangular plate ABCD measuring 45 mm × 35 mm, has its diagonal AC inclined at 30° to the H. P. where as the diagonal BD makes an angle of 45° to V. P. Draw its projections.

   (b) A right circular cone, diameter of base 50 mm and height 65 mm, lies on one of its generators on H. P. such that the generator is inclined to V. P. at 30°. Draw its projections.

4. (a) A right circular cone 45 mm diameter, axis 65 mm long is resting on its base on H. P. It is cut by a plane, the H. T. of which makes an angle of 45° with the V. P. and is passing 15 mm from the top view axis. Draw the sectional front view and true shape of the section.

[3]

Or

A pentagonal pyramid, base edges 25 mm and axis 45 mm long, is lying on one of its triangular faces on the H. P. with its axis parallel to V. P. An auxiliary section plane perpendicular to H. P. and inclined at 30° to V. P. cuts the pyramid and passes through a point 35 mm from the base along the axis. Draw the sectional front view and the true shape of the section.

(b) A right circular cone of 45 mm diameter and 60 mm height of axis, is resting on its base on the H. P. A point P, initially situated at the extreme right end of the base and moves around the surface of the cone and comes back to starting point. Find the length of shortest path, the point can take. Show the path in the front view.

5. A right circular cone of base diameter 30 mm and height 36 mm rests centrally on a square block of 48 m side and 22 mm thick. Draw the isometric view of the two solids.

Or

What are basic commands of drafting entities like line and circle ? Explain various editing commands used in CAD.

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