FACULTY OF ENGINEERING AND INFORMATICS
B.E. I – Year (Main) Examination, June 2014

Subject : Engineering Graphics

Time : 3 hours   **Max. Marks : 100**

Note: Answer all questions from Part-A. Answer any FIVE questions from Part-B.
PART – A (35 Marks)

1   Match the following :   3
   1)   Reduction scale   a)   1 : 1
   2)   Full scale   b)   100 : 1
   3)   Enlargement scale   c)   1 : 100

2   Match the following sizes of drawing paper as per BIS recommendation   4
Designation	Trimmed size in mm, width x length
1) A_4	420 x 594
2) A_2	210 x 297
3) A_1	297 x 420
4) A_3	594 x 841

3   Two pegs fixed on a wall are 4.5 m apart. The distance between the pegs measured
   one parallel to the floor is 3.6 m. If one peg is 1.5m above the floor, find the height of
   the second peg and inclination of the line joining the two pegs, with the floor?   4

4   Construct a scale of 1 : 6 to show decimeter and centimeter to read upto 1m. Shown
   on it a length of 6.9 dm.   3

5   A triangle with its sides 25, 30 and 40 mm respectively is resting with its 40mm side in
   VP and inclined to HP at 25^0. The pane of the triangle is inclined at 35^0 to HP. Draw
   its projections.   4

6   Explain "line method" of determining the intersection line between surfaces of two
   interpenetrating solids.   3

7   Draw projections of a pentagonal prism, edge of base 30mm and 50mm long, having
   one of its base edges perpendicular to VP.   3

8   A triangular prism, side of base 40 mm and length of axis 70mm, is lying on one of its
   rectangular faces in HP. Its axis is parallel to both HP and VP. It is cut by section
   plane parallel to and at a distance of 20mm from the HP. Draw its front view and
   sectional top view.   4

9   Draw an ivolute to an equilateral triangle of 25mm side.   3

10 A point, A is 28 mm above HP and it is in first quadrant. Its shortest distance from the
   XY line is 50mm. Draw its plan and elevation.   4

PART – B (65 Marks)

11 An actual distance of 960 km between two points on a map is shown by a line 26 cm long. Construct the corresponding Vernier scale of kilometers and miles. Show on the scale of a distance of 692 and 891 km. Find the corresponding length in miles using the scale. Take 1 mile – 1.6km.   13

12 A bicycle has 660 mm diameter wheels. Draw the locus of a point P, on the circumference of a wheel for its complete revolution when it passes over a segmental arched culvert of radius 2000 mm. Take scale 1 : 10.   13

13 The profile view of straight line AB, 70 mm long, makes an angle of 35^0 to the XY line and it is 55 mm in length. End A is 12mm in front of VP and 50mm above HP. Assume the end B to be nearer to VP than A. Draw the top and front views of the line.   13

14 Draw projections of a circle of 80mm diameter having the end A of diameter AB in HP, the end B in VP and the plane of the circle inclined at 35^0 to the HP and at 60^0 to the VP. 13

15 A 66 mm diameter spherical paper-weight has a 44 mm diameter flat base. It is placed on HP such that its flat base is perpendicular to the HP and inclined to VP at 36^0. Draw its projections.   13

16 A right regular pentagonal pyramid, edge of base 30 mm and 68mm high, is lying on one of its triangular faces on ground plane such that its axis is parallel to VP. A section plane perpendicular to the VP and inclined to the HP at 65^0 cuts the pyramid meeting its axis at a distance of 36 mm from the vertex. Draw its front view, sectional top view and true shape of the section.   13

17 A cone, base dia 56mm and axis 74 mm long, resting on its base in HP, is completely penetrated by a cylinder of base dia 34 mm. The axis of the cylinder is 22mm above the base of the cone, is parallel to the VP and the HP is 9mm in front of the axis of the cone. Draw the projection of the solids showing curves of intersection. Assume any suitable length of the cylinder.   13

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