Total No. of printed pages = 5

Me-101/ED/1st Sem/2015/M

ENGINEERING DRAWING

Full Marks – 100

Pass Marks – 40

Time – Four hours

The figures in the margin indicate full marks for the questions.

Answer question No.5 and any *four* from the rest.

1. (a) Giving importance on the shapes of letters write the following line in single stroke vertical style. Consider height of letters 12 mm.

"DRAWING IS THE LANGUAGE OF ENGINEERS." 10

(b) What are the various types of lines ? Give the description of each line and their applications. 10

[Turn over

2. (a) A 3 metres long line is represented by a 9 cm line on the drawing. Find the R.F. Draw a plain scale to measure metres and decimetres to measure a maximum length of 6 metres. Show a length of 4 metres and 6 decimetres on the scale. 8

(b) Actual area of a field is 50,000 sq.m. The length and breadth of the field on the map is 10 cm and 8 cm respectively. Construct a diagonal scale which can read upto one metre. Show the length 245 metres on the scale. 12

3. Draw the following : $4 \times 5 = 20$

(i) Draw a perpendicular to a given line from a point within it when the point is near an end of the line. Write the methods in sequential order.

(ii) Construct an equilateral triangle of sides 60 mm with T-square and set-square only.

(iii) Construct a regular heptagon of sides 50 mm by general method.

(iv) Draw common tangents to two given circles of unequal radii (external tangents). Write the procedures in steps.

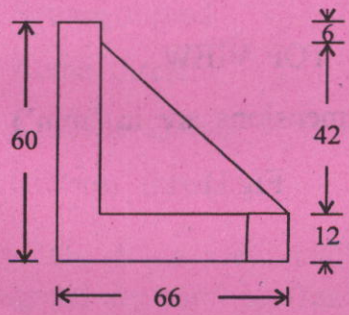
(v) Trisect a right angle. Write procedures in steps.

4. (a) A point A is 30 mm above H.P and 40 mm behind V.P. Another point B is 50 mm above H.P and 20 mm in front of V.P. The distance between their projector is 40 mm. Draw the lines joining their top view and front view. 5

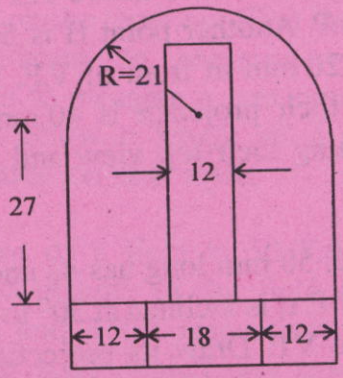
(b) A line AB, 50 mm long has its ends A in both H.P and V.P. It is inclined at 30° to the H.P and 45° to the V.P. Draw its projections. 5

(c) A hexagonal pyramid of sides 30 mm and axis 50 mm long has an edge of its base on the ground. Its axis is inclined at 30° to the ground and parallel to the V.P. Draw its projection. 10

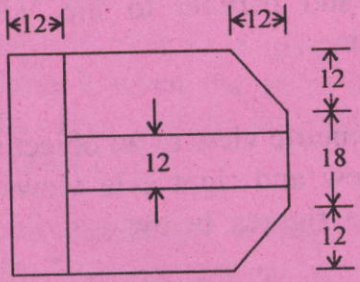
5. Draw the isometric view of an object whose front view, top view and right side views have been shown in the figures below : 20



FRONT VIEW



RIGHT SIDE VIEW



TOP VIEW

(Dimensions are in 'mm')

Fig.-1

6. (a) Draw the following rivets head of rivet dia 12 mm : 2.5×4=10

(i) Snap head rivet

(ii) Pan head

(iii) Flat counter sunk rivet

(iv) Ellipsoidal head rivet.

(b) Draw the sectional elevation and top view of a double riveted double cover butt joint using snap headed rivets. Thickness of plates to be joined are 12 mm each. Show the calculations. 6+4=10

7. (a) Draw any four of the following (freehand sketch) and label the components on it. 4×3=12

(i) Sellers thread

(ii) B. A. thread

(iii) Square thread

(iv) Acme thread

(v) Knuckle thread

(vi) Buttress thread.

(b) Draw the front view and top view of a hexagonal nut and bolt. Take diameter of the nut as 20 mm. 8