

Total No. of printed pages = 5

Me-101/ED/1st Sem/Com/2017/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.7 and any *four* from the rest.

1. (a) Write the following in vertical style. Height of letters should be 15 mm. Attention may be given to thickness, shape of letters, spacing and the general arrangement. 5

'MADE IN INDIA'

- (b) Write the following in single stroke, vertical style and height 15 mm. 5

(i) $2\frac{7}{9}$

(ii) 468

[Turn over

(c) On a simple drawing of your own, show the following uses in engineering practice, giving weightage in thickness, shade lines and arrow heads : 10

- (i) Outer line
- (ii) Dotted line
- (iii) Centre line
- (iv) Dimension line
- (v) Extension line
- (vi) Leader
- (vii) Note
- (viii) Hidden line.

2. Draw the following in geometrical construction method : $5 \times 4 = 20$

- (a) Draw a regular pentagon of sides 30 mm.
- (b) Draw a perpendicular to a given line from a point within it.
- (c) Draw an equilateral triangle of 60 mm altitude with T-square and set square only.

- (d) The distance between the centres of two circles of 65 mm and 90 mm diameters is 120 mm. Draw an internal and external common tangent to the two circles.
- (e) Draw an arc passing through three given points not in a straight line.
3. (a) A 3.2 cm long line represents a length of 4 metres. Extend the line to measure lengths upto 25 metres and show on it units of metres and 5 metres. Show the length of 18 metres on this scale. $3+7=10$
- (b) The distance between two stations is 500 km. It is represented on railway map by 10 cm. Construct a diagonal scale to measure kilometers. Measure a distance of 215 km on the map. $3+7=10$
- (a) A point C is 30 mm above HP and 50 mm behind VP. Another point D is 40 mm above HP and 20 mm in front of VP. The distance between their projectors is 40 mm. Draw the projections of points C and D and find the distance between them. $5+5=10$

(b) A point P is 20 mm below HP and lies in the third quadrant. Its shortest distance from XY is 40 mm. Draw its projection. 10

5. (a) The top view of a line LM 100 mm long measures 70 mm, while the length of its front view is 85 mm. Its one end L is 20 mm below the HP and 30 mm behind the VP. Draw the projections of the line and determine its inclinations with the HP and VP. 10

(b) A rectangle PQRS of $50 \text{ mm} \times 30 \text{ mm}$ has its shorter side PS in the HP and inclined at 30° to the VP. Project its front view if the top view is a square of shorter side. 10

6. (a) Draw the projections of a cone, base 40 mm diameter and axis 50 mm long, resting on the HP on its base. Draw its isometric view. 5+5=10

(b) Draw the sectional front view and the top view of a double riveted lap joint for 12 mm thick plates using rivets in staggered arrangement. Use cup head rivets of 20 mm diameter. Show calculations using empirical formulae. 7+3=10

7. Figure I shows an isometric view of the object.
Draw the following views : $10+5+5=20$

- (i) Front view
- (ii) Top view
- (iii) Side view from right.

(Use third angle projection method)

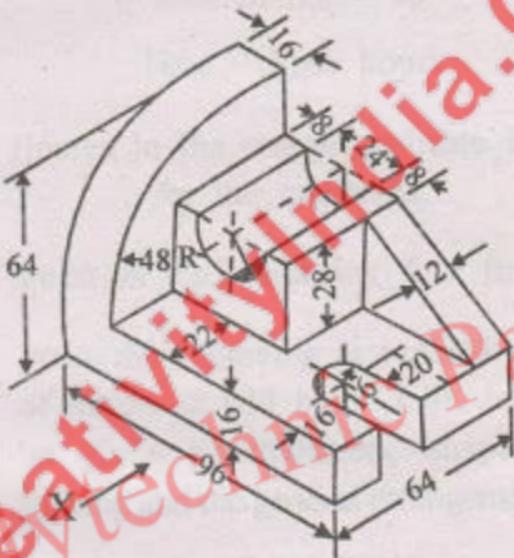


Fig. I

All dimensions are in mm.