Tutorials – Engineering drawing

Question 1
With scale 1:1, construct a triangle with base 100mm long and two base angles of 45^0 and 60^0 without using protractor. Letter its correct name.

Question 2
Construct the regular polygon with five sides, given length of side 50mm long. Use scale 1:1, angle 45^0 and 60^0 and letter the name of polygon. Do not use protractor.

Question 3
(a) With the use of compass only, show how to construct the regular polygon with five sides when given 90mm long as its diameter. Letter its name.
(b) Without the use of protractor, construct the following angles:
(i) 7.5^0 (ii) 11.25^0

Question 4
Suppose the truss for laboratory building which its construction is on progress at MUST has a triangle shape with base angles of 30^0 and the span is 10,000mm. By using scale 1:100 draw this truss (triangle).

Question 5
An elliptical fish-pond is proposed to be constructed at MUST for a small garden. With scale 1:1 and by using concentric circles method; draw this pond in plan (ellipse) given minor axis 40mm and major axis 60mm long.

Question 6
(a) By using compass and straightedge only, construct an angle of 97.5^0
(b) It is required to have a car parking lots alongside AB, 3900mm long at one of the surveyed sites. By using geometrical construction, show how to divide this line AB so as to obtain seven parking of equal in size. Use scale 1:50.

Question 7
Mr. Best man is planning to construct an elliptical swimming pool at his Ikuti site. If the minor and major axes of a pool are 8000mm and 12000mm respectively, use rectangle method to draw its plan (single line drawing of an ellipse). Use scale 1:200.

Question 8
The rectangular water tank which has a base of 4000mm long, 4000mm wide and height of 3000mm is planned to be constructed on the ground level near the existing underground water tank at MUST. Draw this tank in oblique pictorial projection by using scale 1:100.

Question 9
Which type of mark is used to record measurements on the drawing paper when taking measurements from scale?

Question 10
Why lines should not be ruled/drawn with the aid of scale instrument?

Question 11
What are the two uses of scale?

Question 12
An object has the following dimensions: 400mm, 75mm, and 8mm. If the drawing is to be prepared to a scale of 1:10, what size of line has to be measured in each dimension?

Question 13
An object has the following dimensions on a paper: 50mm, 40mm, and 30mm. If the drawing has been prepared to a scale of 1:100, what is the size of actual object in each dimension?

Question 14
Given that the plan of a fish-pond has an elliptical shape with a major axis of 8000mm and minor axis of 6000mm. By using scale 1:100, draw the complete ellipse by using any one method from the following:
(a) Rectangle method
(b) Concentric circles method.

Question 15
With scale 1:1, construct a triangle with base 100mm long and two base angles of 45^0 and 60^0 without using protractor. Letter its correct name.

Question 16
Construct the regular polygon with five sides, given that the length of side is 50mm long. Use scale 1:1, angle 45^0 and 60^0 and letter the name of polygon. Do not use protractor.

Question 17

Figure 1 is drawn in pictorial projection. By using scale 1:2, draw its plan, frontal sectional view indicated by the cutting plane C-C and left end elevation in First angle orthographic projection.

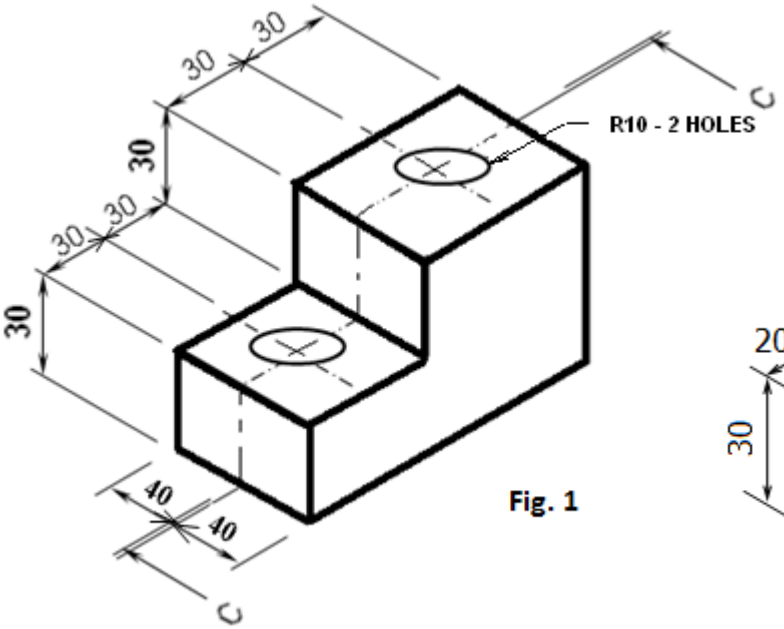

Fig. 1

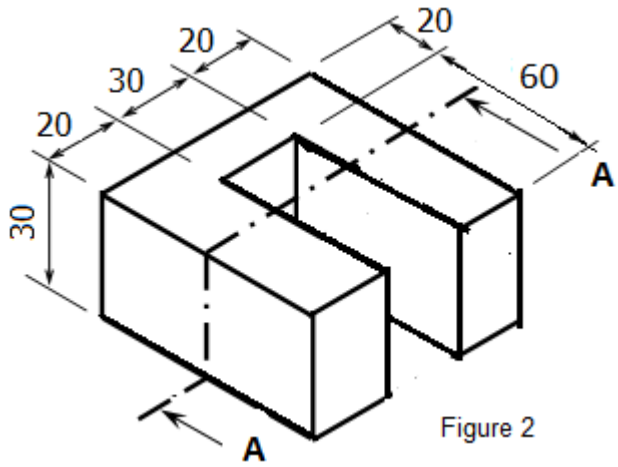

Figure 2

Question 18

Figure 2 is drawn in pictorial projection. By using full size scale, draw its end sectional view indicated by the cutting plane A-A and front elevation in first angle orthographic projection.

Question 19

The front elevation and end elevation of a block are shown in Figure 3. By using scale 1:2:

a) Draw the missing elevation
b) Make an accurate Oblique projection.

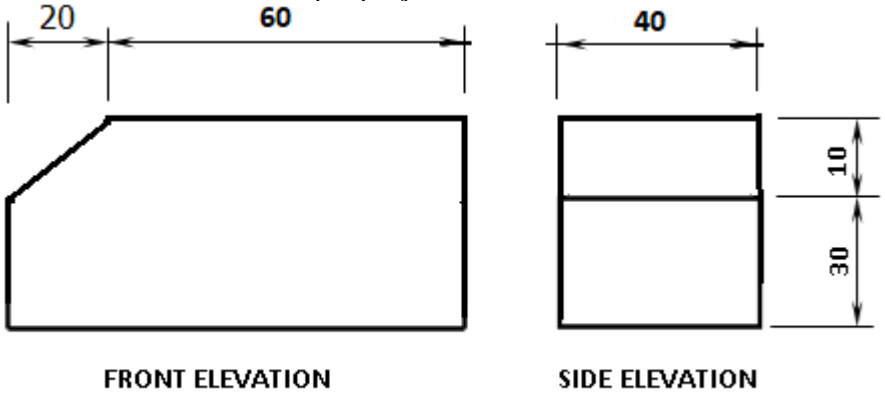

Figure 3

Question 20

Figure 4 is drawn in one of the orthographic projection form. By using scale 1:1, draw the given views in first angle projection with complete its missing plan and then draw its isometric projection.

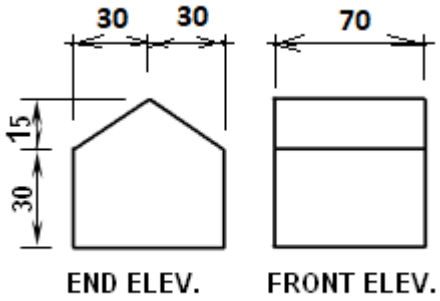

Figure 4

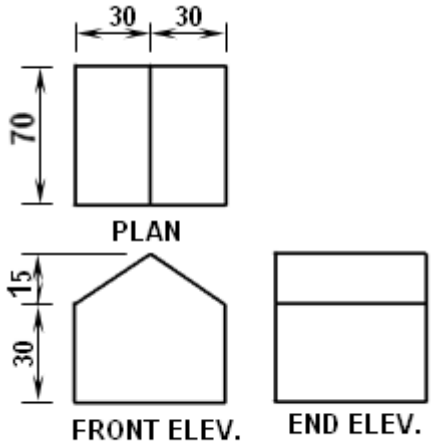

Figure 5

Question 21

Figure 5 shows the views in third angle projection. With scale 1:1, draw its complete Oblique projection.

Question 22

Figure 6 shows the views in third angle projection. With scale 1: 2 draw its complete Isometric projection.

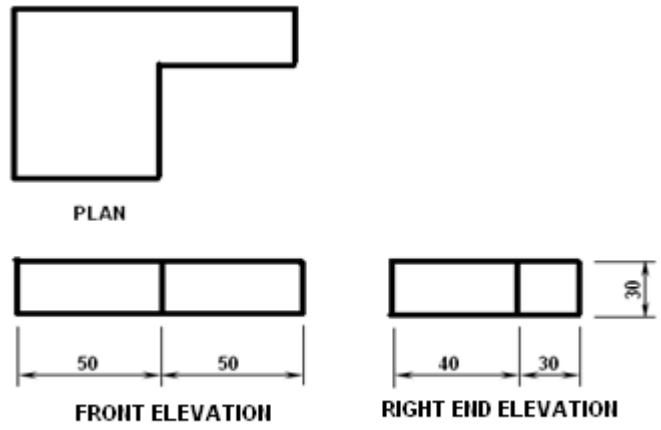

Figure 6

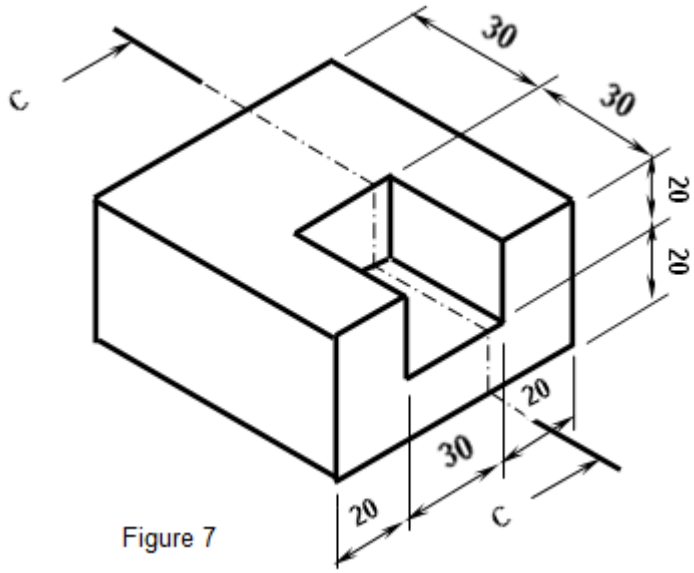

Figure 7

Question 23

Figure 7 is drawn in pictorial projection. By using scale of 1:1 draw its plan, front elevation and end sectional view indicated by the cutting plane line C-C in third angle orthographic projection.

Question 24

Figure 8 below shows the views of building model drawn in orthographic projection. With full-size scale draw:

(a) The missing elevation and

(b) Its complete isometric projection.

Which orthographic projection has been used to arrange the given views?

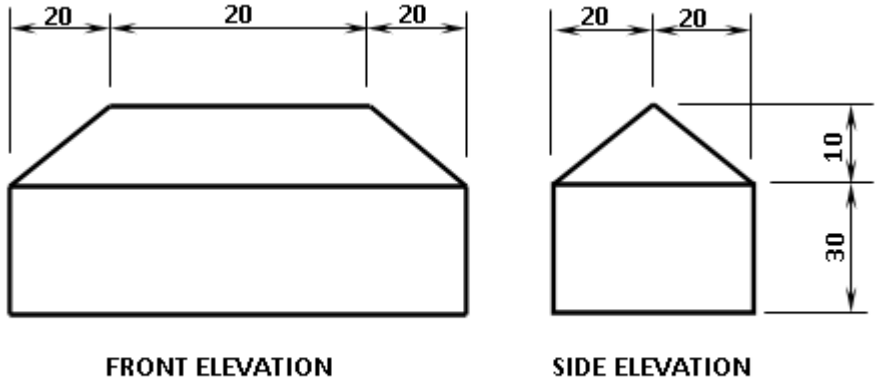

Figure 8

Question 25

Figure 9 is drawn in pictorial projection. By using scale 1:2, draw its plan, frontal sectional view indicated by the cutting plane C-C and left end elevation in First angle orthographic projection.

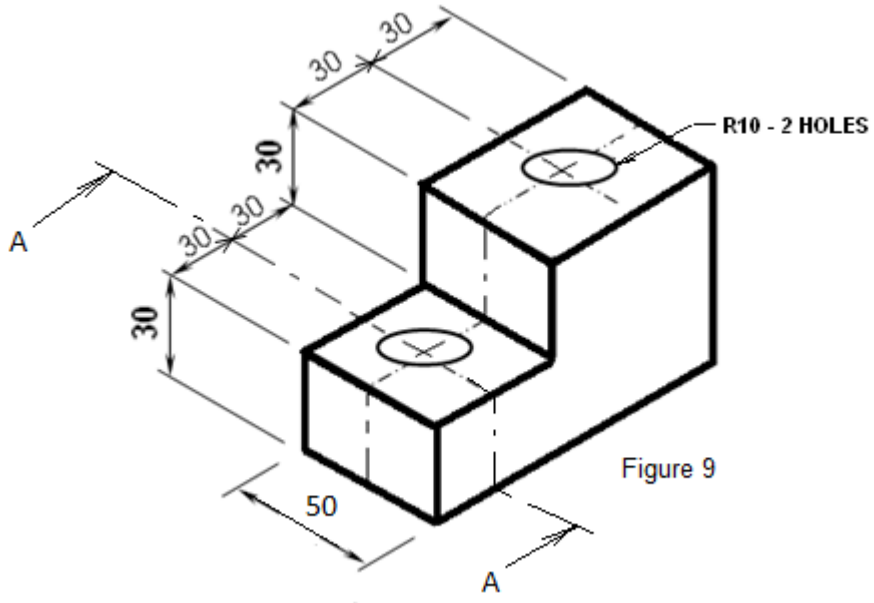

Figure 9

Question 26

Figure 10 is drawn in orthographic projection. By using scale 1:1, draw

(a) The missing elevation and

(b) Its complete axonometric projection.

Question 27

Figure 11 is drawn in pictorial projection. By using scale 1:1, draw its sectional view indicated by the cutting plane G-G

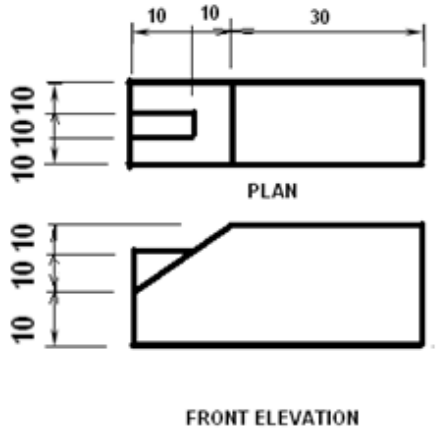

Figure 10

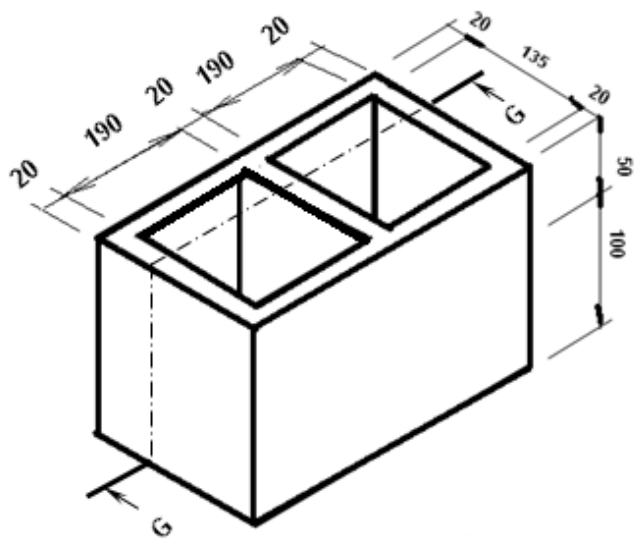

Figure 11