C U SHAH UNIVERSITY
WADHWAN CITY

Subject Code: 4TE02EGC1
Subject Name: Engineering Graphics & CAD   Total Marks: 70

Instructions:
1. Make suitable assumptions whenever necessary.
2. Figures to the right indicate full marks.
3. All questions are compulsory.

Section - I

Q-1 (a) Construct a plain scale of R.F. 1:100 to show metres and decimetres. Maximum measurement required is 10 metres. Indicate 8 m and 7 dm on the scale. 03

(b) A circle of 50 mm diameter rolls along the circumference of another circle of 150 mm diameter from outside. Trace the path of a point P on the circumference of the rolling circle for one complete revolution. Name the curve. 04

Q-2 (a) The foci of an ellipse are 110 mm apart. The minor axis is 70 mm long. Determine the length of the major axis and draw half ellipse by rectangle method and other half by concentric circles method. 07

(b) A line EF 75mm long, has its end E 20mm below H.P. and 25mm behind V.P. The end F is 50mm below H.P. and 65mm behind V.P. Draw the projections and find inclinations of line EF with H.P. and V.P. 07

OR

Q-2 (a) A link AB of 72 mm length rotates about its centre in the clockwise direction. While the link completes one revolution, the insect walks across the length from one end to the other. Plot the locus of the insect assuming the rotation of the link and the motion of the insect as uniform. 07

(b) A straight line AB is 60 mm long. It is inclined to H.P. & V.P. by an angle of 30° & 45° respectively. Point A is 30 mm above H.P. & 20 mm in front of V.P. Draw the projections of straight line AB. 07

Q-3 (a) A regular hexagonal plate, 50 mm side, is resting on one of its corners in the H.P. The diagonal through that corner is inclined at 40° to H.P. & 30° to V.P. Draw the projections of the plate. 07

(b) A square prism, side of base 30 mm and height 45 mm, is resting on H.P. on one of the edges of the base. The edge on which it rests on H.P. makes 45° with V.P. The base of the prism makes 30° with H.P. Draw the projections of the prism. 07

OR

Q-3 (a) Draw the projections of a circle, 70 mm diameter, resting on the H.P. on a point A of the circumference. Plane is inclined to the H.P. such that the plan of it is an ellipse of minor axis 40 mm. The plan of the diameter, through the point A, is making an angle of 45° with the V.P. 07

(b) A cylinder, diameter of base 43 mm and height 58 mm, is resting on H.P. on its base. It is cut by A.I.P. inclined at 45° to H.P. bisecting the axis. Draw the projections with section and the true shape of section. 07

Section -II

Q-4 (a) Make a list of advantages & applications of AutoCAD. 04

(b) Why engineering drawing called language of engineers? Why is it called universal language? 03

Q-5 (a) Draw the plan & elevation of a cone resting on H.P. on its base. Show on them, the 07 shortest path followed by a fly moving round the cone and returning to the same starting point. Fly starts from a point on the periphery of base. Take base diameter of cone 80 mm and height of axis 90 mm.

Q-5 (b) Figure shows an object. Draw (i) F.V. (ii) T.V. (iii) L.H.S.V. in the 1st angle system. 07 Insert necessary dimensions in the unidirectional system of dimensioning.
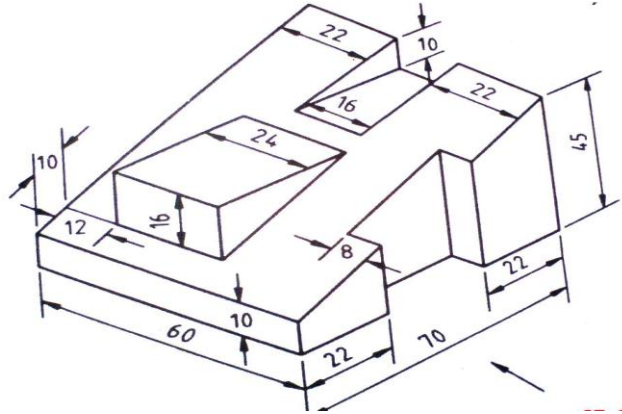

OR

Q-5 (a) A right circular cylinder, base 50 mm diameter and axis 60 mm long, is standing on HP 07 on its base. It has a square hole of size 25 in it. The axis of the hole bisects the axis of the cylinder and is perpendicular to the VP. The faces of the square hole are equally inclined with the HP. Draw its projections and develop lateral surface of the cylinder.

Q-5 (b) Figure shows an object. Draw the following views 07
  i.   F.V. looking in the direction of arrow X.
  ii. Top view
  iii. Left hand side view.
  Use third angle projection method only.
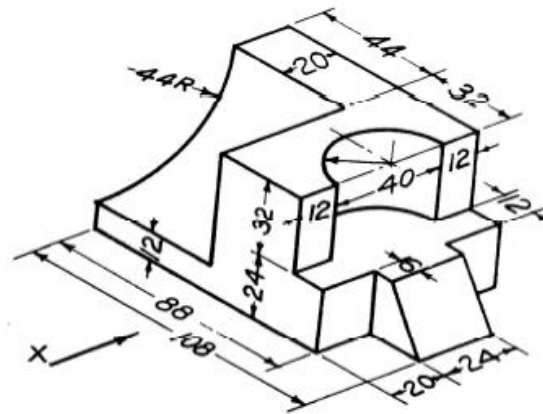
Q-6 (a) What is AutoCAD? Explain with illustration following commands. 07
  (i) Line (ii) Rectangle (iii) Ellipse (iv) Offset (v) Text

Q-6 (b) Draw the isometric view of machined component from the given F.V. and T.V. in figure. 07
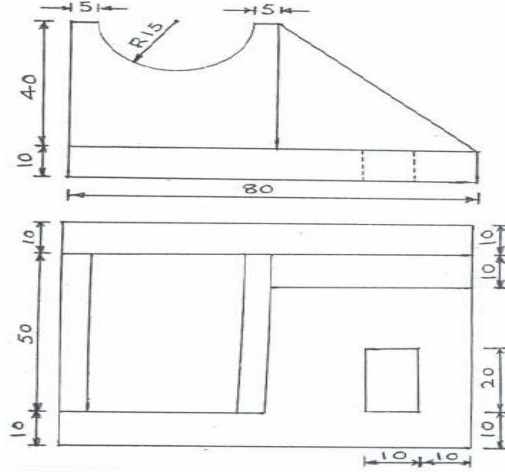
OR

Q-6 (a) Explain different elements of a Computer. 07

Q-6 (b) Figure shows the orthographic views of an object. Draw its isometric projection. 07