Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE- SEMESTER–I & II(OLD)EXAMINATION – SUMMER 2022

Subject Code:110013 Date:10-08-2022

Subject Name:Engineering Graphics

Time:10:30 AM TO 01:30 PM Total Marks:70

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**
4. **Simple and non-programmable scientific calculators are allowed.**

Q.1 **(a)** Draw a plain scale to show kilometre and hectometre when R.F. = 1/14000 and long enough to measure 4 km. Measure 2.6 km on scale. **07**

(b) Draw the symbol for first and third angle projection. Describe the types of system of dimensioning with figure. **07**

Q.2 **(a)** Draw a ellipse by rectangle method 120mm × 80 mm. **07**

(b) On a map the distance between Somnath and Dwarka is shown by 12 cm. The 07 actual distances is 240 km. Draw a diagonal scale to read this map in kilometers correctly and long enough to read 300 km. also show distance of 128 km between Porbandar and Somnath. **07**

OR

(b) A six hit by Sachin attain maximum height of 50 meter before it cross and fall outside the boundary 75 meter away from batting crease, draw the path of ball and name the curve. **07**

Q.3 **(a)** The front view of a line AB, 90mm long, measures 65mm. Front view is inclined to XY line by45°. Point A is 20mm below H.P. and on V.P. Point B is in third quadrant. Draw the projections and find inclinations of line with H.P. and V.P. **07**

(b) While pendulum swings 720 from its initial position and return back, a point on the rod of pendulum moves 96 mm down to other end. Draw the loci of point. **07**

OR

Q.3 **(a)** A line AB, 65 mm long has its end A 20 mm above H.P. and 25mm in front of VP. The end B is 40 mm above H.P. and 65 mm in front of V.P. Draw the projections of AB and shows its inclination with H.P. and V.P. **07**

(b) Construct an Archimedean spiral of one and half convolutions given the 07 greatest and shortest radii as 84mm and the 00 mm respectively. Draw the tangent and normal at point 60 mm away from the pole. **07**

Q.4 **(a)** A thin circular plate of 60 mm diameter is inclined at an angle of 60° with HP while diameter of it is parallel to both HP and VP. Center of the plate is 50 mm from VP and 40 mm from HP. Draw front view and top view of plate. **07**

(b) A cube of 30 mm sides is held on one of its corners on HP such that the bottom square face containing that corner is inclined at 30° to HP. Two of its adjacent base edges **07**

containing the corner on which it rests are equally inclined to VP. Draw the top and front views of the cube.

OR

Q.4 (a) A cone 40 mm diameter of base and 60 mm height is resting on HP on its base. A section plane inclined to 45° with HP and perpendicular to VP cuts the cone in two halves. Draw the projection of truncated cone and develop its lateral surface. **07**

(b) A pentagonal prism is resting on one of the corner of its base on the H.P. The longer edge containing that corner is inclined at 45° to the H.P. The axis of the prism makes an angle of 30° to the V.P. Draw the projections of the solid. **07**

Q.5 (a) **Figure- 1** shows front view and side view of an object, draw isometric projections. **14**

OR

Q.5 (a) Refer the object shown in **Figure- 2**. Draw the following views using the third angle projection method. **14**

(i) Front View

(ii) Top View

(iii) Right Hand Side View

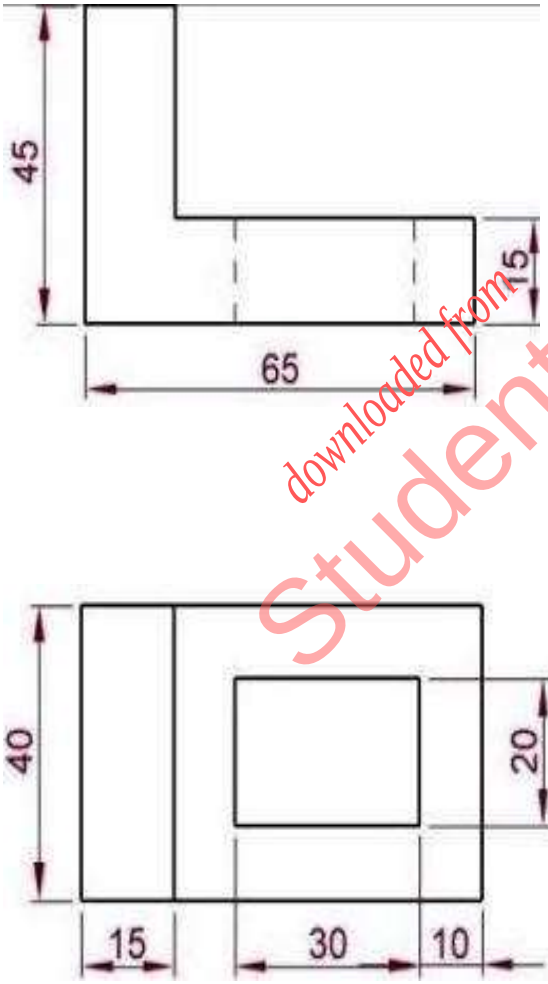

Figure- 1

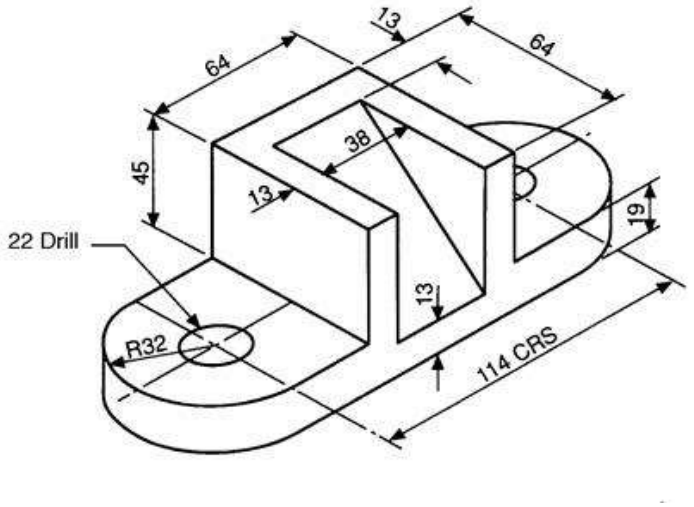

Figure- 2

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