Seat No.: _____ Enrolment No. 102CTBMCS[redacted]

NATIONAL FORENSIC SCIENCES UNIVERSITY

B.Tech - M.Tech Computer Science and Engineering (Cyber Security)Semester - I MAR-2022

Subject Code: BTMTCS-SI-P5 **Date:** 22/03/2022

Subject Name: Engineering Graphics

Time: 3 hours **Total Marks: 100**

Instructions:

1. **Make suitable assumptions wherever necessary.**
2. **Figures to the right indicate full marks.**

			Marks
Q.1	(a)	The distance between Ludhiana and Chandigarh is 100 km and it is represented on a certain map by a line 2.5 cm long. Find the R.F. of the scale of the map. Draw its diagonal scale showing single kilometer and long enough to measure up to 600 km. Indicate a distance of 573 km on the scale.	07
	(b)	Draw the projects of the following points on a common XY line, keep the distance between projectors as 20 mm: (i) A, 40 mm above the HP and 50 mm in front of VP (ii) B 60 mm above the HP and 30 mm behind the VP	08
Q.2	(a)	Point A is 20 mm above HP and 30 mm in front of VP and Point B is 25 mm below HP and 40 mm behind the VP. The end projectors for these points are 40 mm apart. Draw the projections of the points and find the length of the front and top view of the line joining points A and B.	06
	(b)	A line AB, 60 mm long, has its end B 20 mm from HP and 30 mm from VP. The whole line lies in on quadrant. Draw its projections in second and fourth quadrant if it is inclined to the HP at 32° and is parallel to the VP.	06
	(c)	A regular pentagon ABCDE, of 25 mm side, has its side BC in HP. Its plane is perpendicular to the HP and inclined at 45° to the VP. Draw the projections of the pentagon and show its traces when the corner nearest to the VP is 10 mm from it.	10
Q.3	(a)	Draw the front, top and side view of the object shown in the figure 1 as per Orthographic projection system.	12
	(b)	Draw the isometric view of the object shown in the figure 2.	12

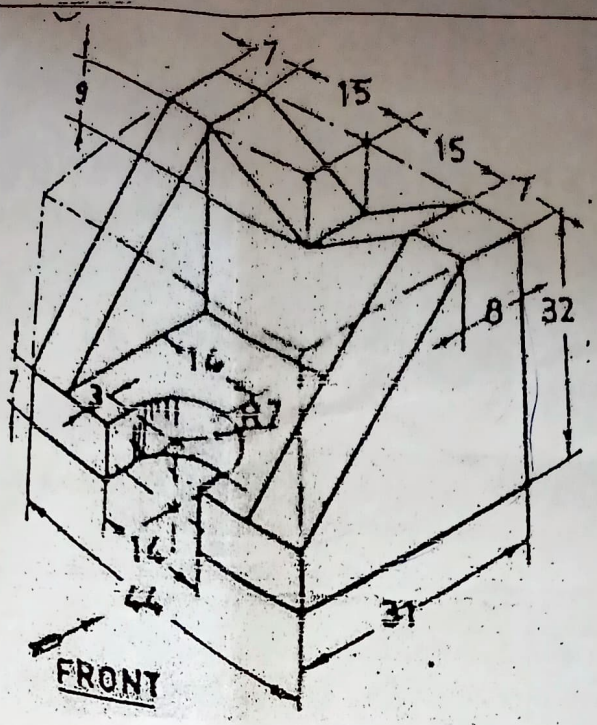


Figure 1

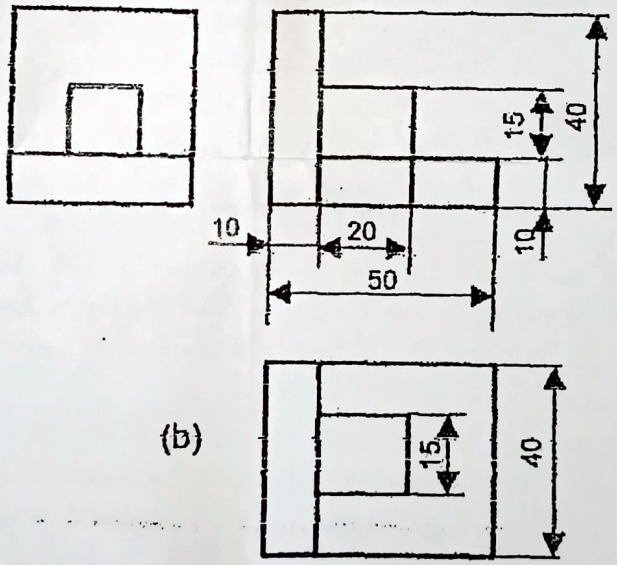


Figure 2

		OR	
Q4	(a)	Draw the front, top and right hand side view of the object shown in figure 3.	12
	(b)	Draw the isometric view of the sketches shown in figure 4.	12

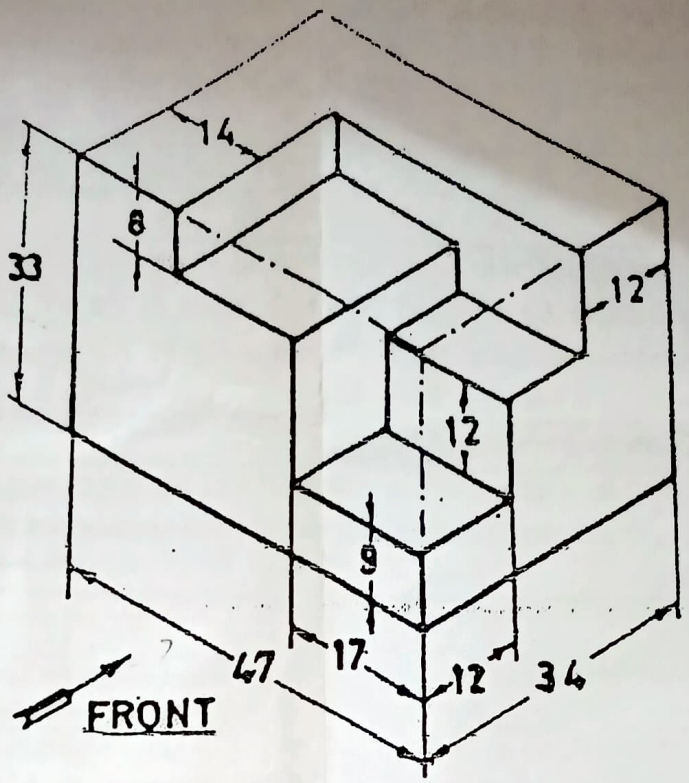


Figure 3

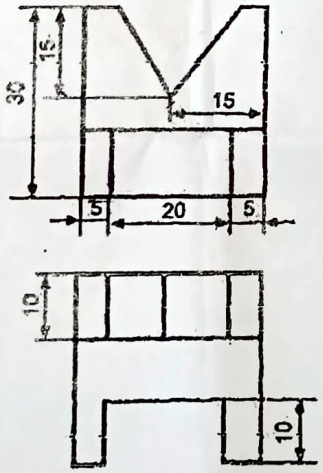
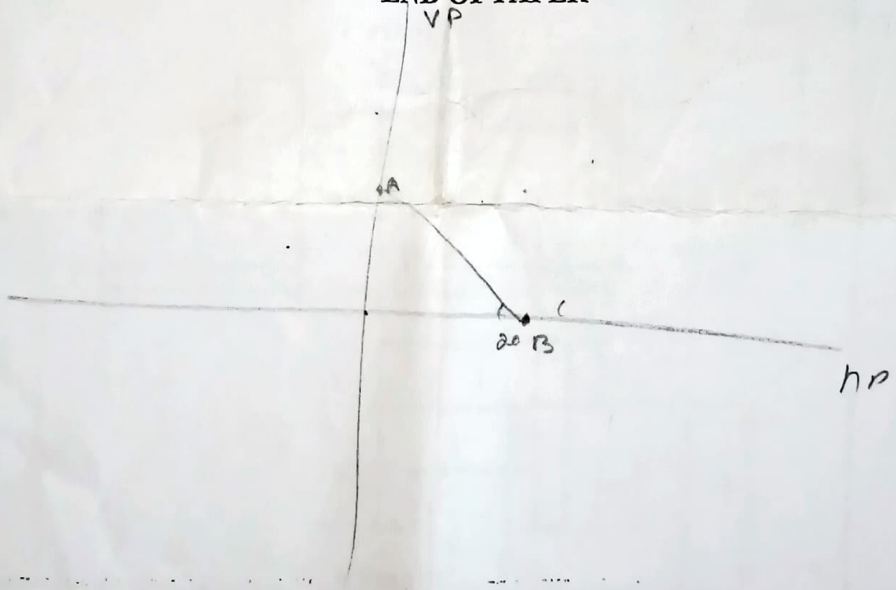


Figure 4

Q.5	(a)	A line CD, 45 mm long, has its end C 15 mm below HP and 10 mm behind VP. End D is 40 mm below the HP and 45 mm behind the VP. Draw its projections and determine ϕ and 0.	06
	(b)	A right regular hexagon prism, edge of base 25 mm and height 55 mm, rests on an edge of its base in HP such that its axis is parallel to VP and inclined to the HP at 45°. Draw the projections of the solid.	14
Q.6	(a)	A line AB, 75 mm long, has its end A in VP and 45 mm from HP and end B in the HP. The line is inclined at 45° to the VP and lies in third quadrant. Draw its projections.	05
	(b)	A right regular pentagonal pyramid, edge of base 25 mm and height 55 mm, rests on its base: (1) on ground plane, (2) on HP, with one of	14

		its base edges parallel to VP. A section plane perpendicular to VP and inclined to HP (on ground plane) at 30°, cuts the pyramid and passes through the centre of its axis. Draw its front and sectional top view.	
		OR	
Q.7	(a)	A line AB, 90 mm long, is inclined at 300 to the H.P. Its end A is 12 mm above the H.P. and 20 mm in front of the v.P. Its front view measures 65 mm. Draw the top view of AB and determine its inclination with the v.P.	05
	(b)	Construct a cycloid of diameter 60 mm. ✓	07
	(c)	Construct a ellipse of major axis 85 mm and minor axis 60 mm using concentric circle method on one side and rectangle method on other side.	07

END OF PAPER



Seat No.: _____ Enrolment No._____

NATIONAL FORENSIC SCIENCES UNIVERSITY

Semester 1 ATKT Examination – July 2022

B. Tech - M.Tech Computer science & Engineering.

Subject Code: CTBTCSE S1 P5 **Date: 15/07/2022**

Subject Name: Engineering Graphics

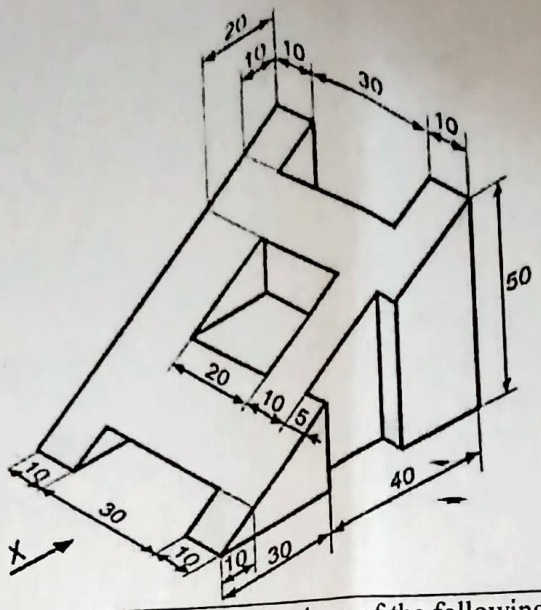
Time: 11:00 to 14:00 **Total Marks: 100**

Instructions:

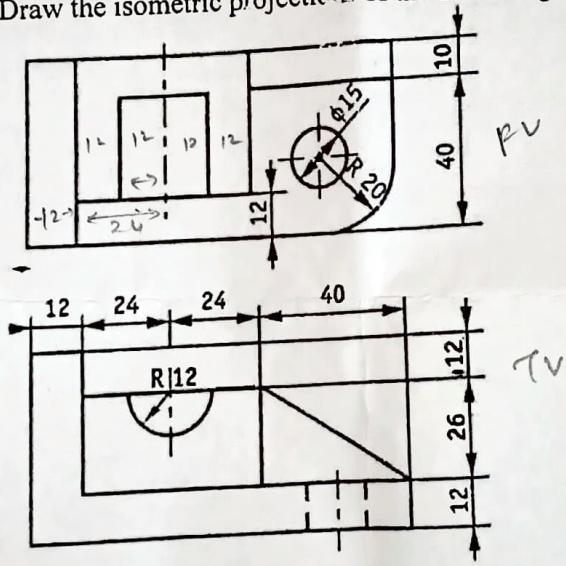
1. **Write down eachquestion on separate page.**
2. **Attempt all questions.**
3. **Make suitable assumptions wherever necessary.**
4. **Figures to the right indicate full marks.**

			Marks
Q.1	(a)	Construct a diagonal scale of R.F. (1/6250) to read up to 1 kilometre and to read meters on it. Show a length of 653 metres on it.	07
	(b)	Draw an ellipse using concentric circle method on one half and rectangular method on the other half. Take major and minor axis lengths to be 65 mm and 30 mm respectively.	07
Q.2	(a)	Draw the projections of points, positions of which are given below: 1. A point 'A' on H.P. and 40 mm in front of V.P. 2. A point 'B' on V.P and 25 mm above H.P. 3. A point 'C' is 50 mm above H.P. and 50 mm in front of V.P. 4. A point 'D' 24 mm below H.P. and 57 mm in front of V.P.	08
	(b)	The distance between end projectors of a straight line PQ is 130 mm. Point P is 40 mm below H.P. and 25 mm in front of V.P. Point Q is 75 mm above H.P. and 30 mm behind V.P. Draw the projections and find out its T.L., inclination with the horizontal Plane (θ), Inclination with the vertical Plane (Φ) and lengths of top view and front view.	07
	(c)	ABCD is a rhombus of diagonals AC = 110 mm and BD = 70 mm. Its corner A is in the H.P. and the plane is inclined to the H.P. such that the plan appears to be a square. The plan of diagonal AC makes an angle of 20° to the V.P. Draw the projections of the plane and find its inclination with H.P.	07
Q.3	(a)	A square pyramid, side of base 50 mm and height 64 mm, is freely suspended from one of the corners of the base. Draw its projections when vertical plane containing axis makes an angle of 45° with the V.P.	08
	(b)	A cone, diameter of base 70 mm and height 80 mm, is resting on H.P. on its base. It is cut by a cutting plane perpendicular to V.P. and H.P. C.P. remains 15 mm away from the axis. Draw plan, elevation and sectional side view. State the nature of section.	09

Q.4	(a)	Draw the orthographic projections of the following :	14

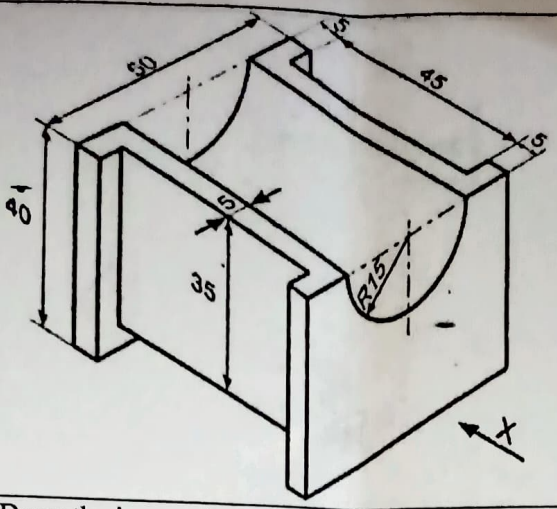


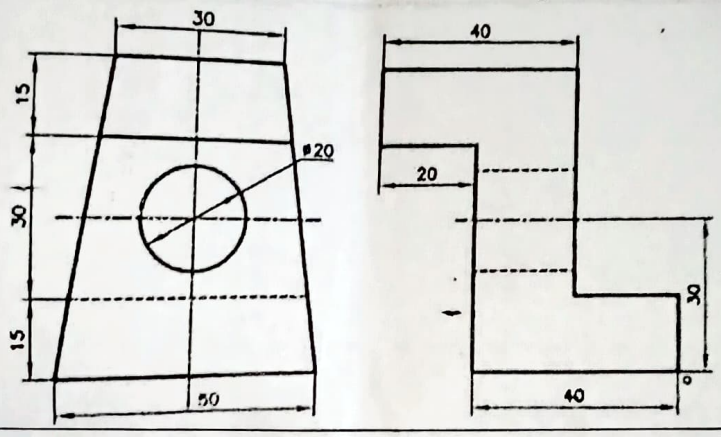
	(b)	Draw the isometric projections of the following:	14



OR

Q.4	(a)	Draw the orthographic projections of the following :	14



	(b)	Draw the isometric projections of the following: 	14
Q.5	(a)	A line EF, 65 mm long, has its end E 25 mm below H.P. and 30 mm behind V.P. The end F is 40 mm below H.P. and 50 mm behind VP. Draw the projections of Hine EF and find its inclinations with H.P. and V.P.	07
	(b)	A cone, diameter of base 60 mm and height 90 mm, is resting on H.P. on the point of peryphery of the base. Axis of the cone makes 60° with the H.P. and 30 with the V.P. Draw the projections of the cone, when the apex is nearer to V.P.	07
	(c)	Draw the involute of a hexagon of side 30 mm.	05

EF = 65 mm