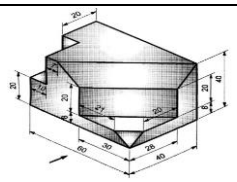
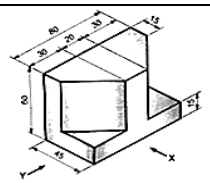
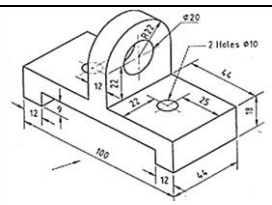
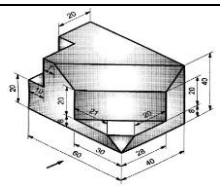
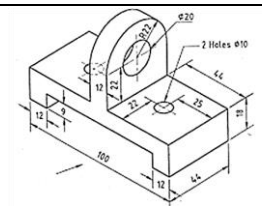
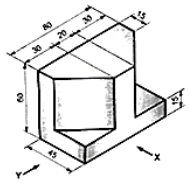
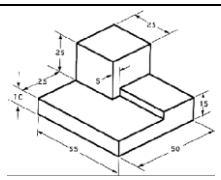
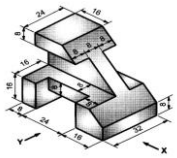
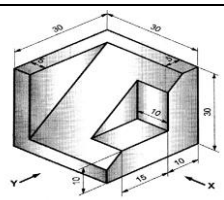
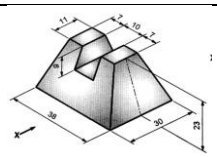
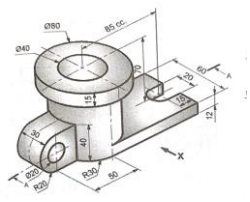
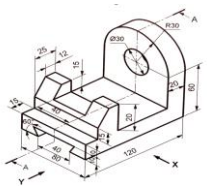
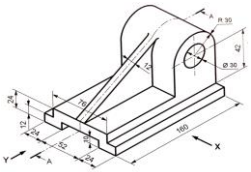
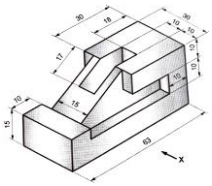
TCET
DEPARTMENT OF ENGINEERING SCIENCES AND HUMANITIES
Choice Based Credit Grading Scheme with Holistic and Multidisciplinary Education
Under Autonomy - CBCGS-HME 2023
University of Mumbai

Name of Subject :-	Engineering Graphics and Design (EGD)	DEPT :-	ES&H
Year(SE/TE/BE):-	FE/FT	Subject Code:-	HSMC1201
ACADEMIC YEAR :-	**2024-25 (January - May 2025)**	SEMESTER:-	II
Scheme:-	CBCGS-HME2023		
Faculty Incharge:-	Mr. Ashwin Pathak /Mr.Shivram Poojari /Ms. Yogita Honrao/ Ms. Soma Karmokar/ Mr. Suraj Singh/ Mr. Rajeshwar Deshmukh/ Mr. Ankush Biradar		

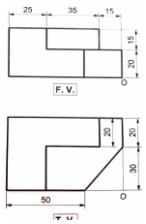
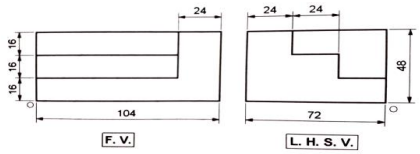
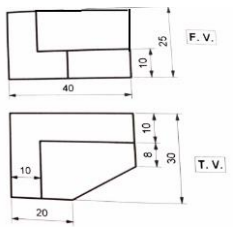
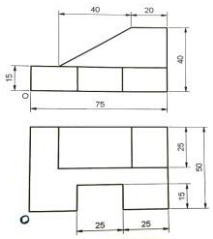
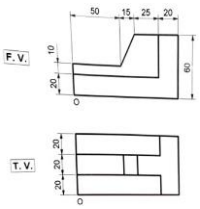
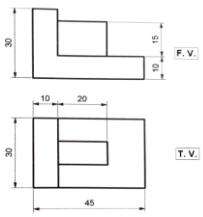
Sr No.	Questions	CO	RBT	Marks	Type	Pi
1	Enlist any four apparatus in engineering graphics	CO 1	R	2	T	1.3.1
2	Enlist the types of pencil lead used in engineering drawing	CO 1	R	2	T	1.3.1
3	Define a Cycloid.	CO 1	R	2	T	1.3.1
4	What is the value of eccentricity of parabola	CO 1	R	2	T	1.3.1
5	What is the value of eccentricity of hyperbola	CO 1	R	2	T	1.3.1
6	What is the value of eccentricity of ellipse	CO 1	U	2	T	1.3.1
7	Draw a horizontal line of 80 mm and divide it into 12 equal parts	CO 1	U	2	T	1.3.1
8	Define a Involute.	CO 2	U	3	T	1.3.2
9	Draw a horizontal line of 100 mm and divide it into 8 equal parts	CO 3	U	4	T	1.3.3
10	Draw a circle of 30 mm radius and devide it into 12 number of equal parts	CO 4	U	5	T	1.3.4
11	State any four types of lines used in engineering drawing	CO 1	R	2	T	1.3.1
12	Draw a hyperbola whose distance of focus from directrix is 50 mm. The eccentricity is 3/2.	CO 1	R	5	N	1.3.1
13	The distance of focus for a conic curve from directrix is 50 mm. Draw the locus of a point P so that the distance moving point from directrix and focus is unity.	CO 1	R	5	N	1.3.1
14	Draw involute of square having each side of length 25 mm	CO 1	U	5	N	3.3.1
15	Draw involute of triangle having each side of length 30 mm	CO 1	U	5	N	1.3.1
16	Locate focus, vertex-1 and vertex-2 of an ellipse with focus directrix distance 25 mm and eccentricity 2/3.	CO 1	U	6	N	3.3.2
17	Draw involute of a equilateral triangle of side 25mm. Also draw tangent and normal at any point on the curve.	CO 1	U	7	N	2.3.3
18	Draw involute of a pentagon of side 25mm.	CO 1	U	7	N	2.3.3
19	Construct a cycloid of a roller having 50mm diameter.	CO 4	U	8	N	1.3.4
20	Draw a cycloid for a point at top on a circle of diameter 30mm for half rotation on horizontal floor.	CO 1	R	5	N	3.2.1
21	Enlist and draw different types of lines used in engineering drawing.	CO 1	R	5	T	3.2.1
22	Draw a cycloid for a point at bottom on a circle of diameter 30mm for half rotation on horizontal floor..	CO 1	U	5	N	3.2.1
23	An elastic string of 150 length is wound around hexagon of 25 mm side. Trace the path of free end of a string keeping the string tight.Draw normal and tangent	CO 1	R	10	N	3.2.1
24	Construct a cycloid having a rolling circle of 50 mm diameter. Also draw a tangent and normal at any point P on the curve.	CO 1	R	10	N	3.2.1
25	The focus of a conic is 30 mm from directrix. Draw the locus of a point P moving in such a way that eccentricity is 2/3. Also draw a tangent and normal at any point on the curve.	CO 1	R	10	N	3.2.1
26	Enlist the steps to draw a cycloid	CO 1	R	10	T	3.2.1
27	Draw hyperbola whose distance of focus is 50 mm and e = 1.5. Draw the tangent and normal at any point on the curve	CO 1	R	10	T	3.2.1
28	A circular wheel of diameter 40 mm rolls over a straight surface without slipping. Draw the curve traced by a point P for one revolution of the wheel. Assume that the initial position of the point P is at the top of the vertical centre line of the wheel. Name the curve and also draw tangent and normal at any point on the curve	CO 1	U	10	T	3.2.1
29	One end of a thread is fixed to one corner of regular hexagonal disc having a side of 25mm. Draw the curve traced out by the other end of the thread when the thread is wound round the disc, the thread being kept tight. Name the curve and also draw normal and tangent at any point on the curve.	CO 1	R	10	T	3.2.1
30	The focus of a conic is 50 mm from directrix. Draw the locus of a point P moving in such a way that eccentricity is 3/2. Also draw a tangent and normal at any point on the curve.	CO 1	U	10	N	3.2.1
31	The focus of a conic is 50 mm from directrix. Draw the locus of a point P moving in such a way that eccentricity is 2/3. Also draw a tangent and normal at any point on the curve.	CO 1	U	10	N	3.2.1
32	The focus of a conic is 50 mm from directrix. Draw the locus of a point P moving in such a way that eccentricity is 1. Also draw a tangent and normal at any point on the curve.	CO 1	A	10	N	3.2.1
33	Construct a cycloid having a rolling circle of 40 mm diameter on an inclined plane at 30degree. Also draw a tangent and normal at any point P on the curve.	CO 1	U	10	N	3.2.1
34	Draw the projection of points 'W' on V.P. and 20 mm below H.P.	CO 2	R	2	N	1.1.1
35	Draw the projection of points 'X' on H.P. as well as V.P. both.	CO 2	R	2	N	1.1.1
36	Draw the projection of points 'A' in third Quadrant relation with H.P and V.P 15mm and 20mm respectively	CO 2	R	2	N	1.1.1
37	A point M is on both HP and VP. Draw its projection.	CO 2	R	2	N	1.1.1
38	Draw the projection of point M which is 50 mm below the HP and on VP.	CO 2	R	2	N	1.1.1
39	Draw the projection of line AB of length 60mm, which is parallel to both HP and VP. Consider point A 15 mm above HP and 20mm infront of VP	CO 2	R	2	N	1.1.1
40	Draw the line of 30 mm parallel to both HP and VP	CO 2	R	2	N	1.1.1
41	Draw the line of 60 mm inclined to HP at 60deg. and parallel to VP	CO 2	U	2	N	1.2.1
42	What do you mean by 'plan length'?	CO 2	R	2	N	1.1.1
43	What do you mean by 'front view'?	CO 2	U	2	N	2.1.1
44	A point 'A' is 25 mm below H.P. and 15 mm behind V.P. Draw its projections.	CO 2	R	2	N	1.1.1
45	Draw the line of 60mm parallel to both HP and VP	CO 2	R	2	N	1.1.1
46	Draw the line of 30mm inclined to HP at 45 deg. and parallel to VP	CO 2	R	2	N	1.1.1
47	What do you mean by 'plan length'?	CO 2	R	2	T	1.1.1
48	What do you mean by 'front view'?	CO 2	U	2	T	1.1.1
49	A point 'D' is 45 mm below H.P. and 55 mm behind V.P. Draw its projections.	CO 2	R	2	N	1.1.1
50	Draw the projection of triangular plate of side 30mm Parallel to the VP and perpendicular to HP.	CO 2	A	5	N	2.3.1
51	Draw the projection of a hexagon plate of side 30mm Parallel to the VP and perpendicular to HP.	CO 2	A	5	N	2.3.1
52	A line CD 60mm long has its end 'C' in both H.P and V.P. It is inclined at 30 0 to H.P and 45 0 to V.P. Draw the projections.	CO 2	A	5	N	2.3.1
53	A line AB 85 mm long, is parallel HP and inclined to VP at an angle 55^0. Consider the whole line to be in the First Quadrant. If the End A is on HP and 20 mm in front of the VP draw its projections and find the Elevation Length.	CO 2	A	5	N	2.3.1
54	Draw the projection of line AB 75 mm long, which is parallel to HP and Perpendicular to VP. Consider the End A 20 mm abo	CO 2	A	5	N	2.3.1
55	Draw the projection of line AB 90 mm long, which is parallel to VP and perpendicular to HP. Consider the End A 10 mm above the HP and 15 mm in front of the VP	CO 2	A	5	N	2.3.1
56	A line AB 70 mm long, is parallel HP and inclined 30^0 to VP. Consider the whole line to be in the First Quadrant. If the End A is on HP and 20 mm in front of the VP draw its projections and find the Elevation Length.	CO 2	A	5	N	2.3.1
57	A 50mm long line AB is parallel to both H.P and V.P. The line is 25mm in front of V.P and 60mm above H.P, draw the projections of the line	CO 2	A	5	N	2.3.1

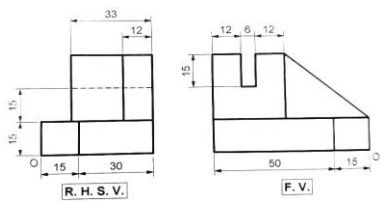
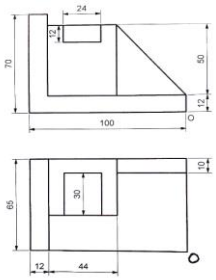
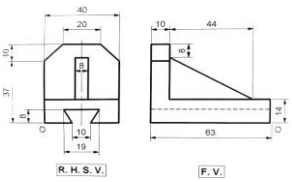
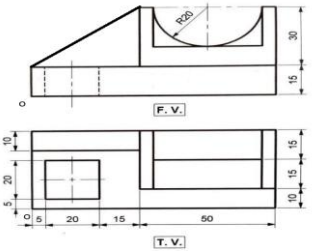
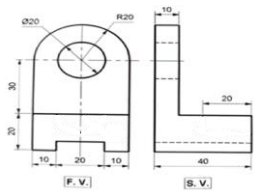
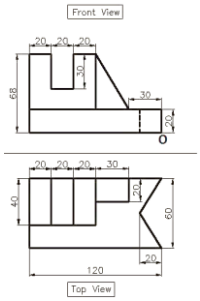
58	Draw the projection of line AB 60 mm long, which is parallel to VP and perpendicular to HP. Consider the End A 20 mm above the HP and 15 mm in front of the VP	CO 2	A	5	N	2.3.2
59	A line AB, 65 mm long has its end point A 20 mm above the HP and 10 mm in front of the VP. Elevation length and Plan length of the line is same and is of length 50 mm. Draw the projections of line AB, assuming the complete line to be in the First Quadrant. Also find its inclinations with HP and VP.	CO 2	A	5	N	2.3.2
60	A line AB, 80 mm long is inclined at an angle of 35° to the HP and 45° to VP. Its end point A is 10 mm above HP and 20 mm in front of VP. Draw the Projection of Line AB. Assume complete line in the 1st quadrant. Also find its plan length and elevation length.	CO 2	A	5	N	2.3.2
61	Distance between the end projectors of line AB are 50 mm apart. The end A is 20 mm above the H.P. and 20 mm infront the V.P. The end B is 10 mm above the H.P. and 40 mm infront of the V.P. Draw projections of line AB, Determine the true length of the line and its inclinations with H.P. and V.P.	CO 2	A	5	N	2.3.2
62	Draw the projections of a line AB 60mm long having point A 10 mm above HP and 25mm in front of VP when it is parallel to HP and inclined at 30° to VP.	CO 2	A	5	N	2.3.2
63	The front view of line inclined at 30deg. to V.P is 65mm long. Draw the projections of a line, when it is parallel to and 40mm above H.P. and one end being 20mm in front of V.P.	CO 2	A	5	N	2.3.2
64	Explain the four quadrants used in the projection of points with neat sketches.	CO 2	U	5	T	2.3.2
65	The distance between the end projectors of a line AB is 60 mm. The end A is 25 mm above H.P. and 45 mm in front of V.P., while the other end B is 60 mm above H.P. and 15 mm in front of V.P. Draw projections and find the true length and also inclination of the line with H.P. and V.P	CO 2	A	10	N	2.1.2 2.3.2
66	Top view and Front view of the line MN, 70 mm long measures 55 mm and 60 mm respectively. Draw the projection of line MN if end M is 15 mm above the HP and 20 mm in front of the VP. Determine inclination of line MN with HP and VP.	CO 2	A	10	N	2.1.2 2.3.2
67	A line AB 70 mm long has its end A 10 mm above H.P. and 20 mm in front of V.P. The line AB is inclined at 40° to H.P. and its front view is inclined at 65° to XY. Draw its projections and find inclination of AB with VP.	CO 2	A	10	N	2.1.2 2.3.2
68	A line AB 80 mm long, is parallel VP and inclined to HP at an angle 350 . Consider the whole line to be in the First Quadrant. If the End A 25 mm above the HP and 10 mm in front of the VP. Also find the Plan Length.	CO 2	A	10	N	2.1.2 2.3.2
69	Draw the projection of line AB 60 mm long, which is parallel to VP and perpendicular to HP. Consider the End A 20 mm above the HP and 15 mm in front of the VP	CO 2	A	10	N	2.1.2 2.3.2
70	A line AB 80 mm long has its end A 20 mm above HP and 30 mm infront of VP. It is inclined at 30 deg. to HP and 45 deg. to VP. Draw the projections of the line and find apparent lengths and apparent inclinations	CO 2	A	10	N	2.1.2 2.3.2
71	Draw the projections of a line AB 100 mm long inclined at 45 deg. to VP and 30 deg. to HP. One end of the line is 20 mm above HP and in VP. Determine apparent lengths and inclinations.	CO 2	E	10	N	2.1.2 2.3.2
72	A line AB 100 mm long is inclined to HP at 45 deg. and inclined to VP at 30 deg. Draw front and top views of line and determine their lengths. Also determine the perpendicular distance of end B from both HP and VP	CO 2	E	10	N	2.3.2
73	A line AB measuring 70 mm has its end A 15 mm infront of VP and 20 mm above HP and the other end B 60 mm infront of VP and 50 mm above HP. Draw the projections of the line and find the inclinations of the line with the both the reference planes of projection	CO 2	E	10	N	2.3.2
74	A line AB 65 mm long, has its end A 20 mm above HP and 25 mm infront of VP. The end B is 40 mm above HP and 65 mm infront of VP. Draw the projections of AB and show its inclination with HP and VP.	CO 2	E	10	N	2.3.2
75	A line AB has its end A 20 mm above HP and 30 mm infront of VP. The other end B is 60 mm above HP and 45 mm infront of VP. The distance between end projectors is 70 mm. Draw its projections. Determine the true length and apparent inclinations	CO 2	A	10	N	2.1.22.3.2
76	The end A of a line AB is on HP and 25 mm infront of VP. The end B is on VP and 50 mm above HP. The distance between the end projectors when measured parallel to the line of intersection of HP and VP is 65 mm. Draw the projections of the line AB and determine its true length and true inclinations with HP and VP	CO 2	E	10	N	2.1.22.3.2
77	State the position of FV, TV and LHSV in 1st angle projection	CO3	R	2	T	1.3.1
78	What is 1st angle projection?	CO3	U	2	T	1.3.1
79	Enlist types of Plane	CO3	U	2	T	1.3.1
80	Difference between 1st angle method & 3rd angle method.	CO3	U	2	T	1.3.1
81	State the position of FV, TV and LHSV in 3rd angle projection	CO3	U	2	T	1.3.1
82	Draw the symbol of 3rd angle projection	CO3	U	2	T	1.3.1
83	Define orthographic projections	CO3	A	2	T	1.3.1
84	In orthographic projections, the FV, TV and SV are projected on which reference planes?	CO3	R	2	T	1.3.1
85	What XY line indicates in TV and FV?	CO3	U	2	T	1.3.1
86	Draw the symbol of 1st angle projection	CO3	U	2	T	1.3.1
87	What is 3rd angle projection?	CO3	A	2	T	1.3.1
88	Draw TV along the shown arrow direction 	CO3	A	5	N	3.2.1
89	Draw FV along X direction 	CO3	U	5	N	3.2.1
90	Draw the FV of given figure along the shown arrow 	CO3	U	5	N	3.2.1

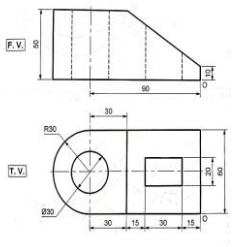
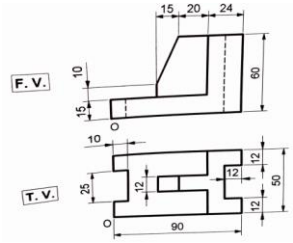
91	Draw FV along the shown arrow direction		CO3	A	5	N	3.2.1
92	Draw the TV of given figure along the shown arrow		CO3	A	5	N	3.2.1
93	Draw TV along X direction		CO3	A	5	N	3.2.1
94	Draw TV along X direction		CO3	A	5	N	3.2.1
95	Draw a) FV along X b) Side View		CO3	U	10	N	3.2.1
96	Draw a) FV along X b) TV		CO3	A	10	N	3.2.1
97	Draw a) FV along X b) TV c) Side View		CO3	A	10	N	3.2.1
98	Draw sectional FV along AA & TV of the given figure.		CO3	A	10	N	3.2.1

99	Draw 1) Sectional FV (along A-A) 2) LHSV 	CO3	U	10	N	3.2.1
100	Draw 1) Sectional FV (along A-A) 2) LHSV 	CO3	A	10	N	3.2.1
101	Draw 1) FV (Along X) 2) LHSV 3) TV 	CO3	A	10	N	3.2.1
102	Draw the FV of a triangular prism, base 40 mm side and axis 50 mm long, resting on one of its bases on the H.P. with a vertical face perpendicular to the V.P	CO 4	U	2	N	3.2.1
103	Draw the Base of a pentagonal pyramid, base 25 mm edge and axis 50 mm long, having its base on the V.P.	CO 4	U	2	N	3.2.1
104	Draw the top view of a square pyramid with a base side of 30 mm, placed on the HP such that two adjacent base edges are equally inclined to the VP.	CO 4	U	2	N	3.2.1
105	Draw a pentagon of side 30mm.	CO 4	U	2	N	3.2.1
106	Draw top view of a hexagonal pyramid of side of base 35 mm kept on HP such that one of its base edges is parallel to VP	CO 4	U	2	N	3.2.1
107	Draw a hexagon of side 30mm.	CO 4	U	2	N	3.2.1
108	Draw TV of a square pyramid of side of base 25 mm kept on HP on its apex such that one of its base edge is parallel to VP	CO 4	U	2	N	3.2.1
109	How many slant edges a square and a pentagonal pyramid have?	CO 4	U	2	N	3.2.1
110	Draw the TV of a triangular prism, base 40 mm side and axis 50 mm long, resting on one of its bases on the H.P. with a vertical face perpendicular to the V.P	CO 4	E	2	N	3.2.1
111	Draw the FV of a pentagonal pyramid, base 30 mm edge and axis 50 mm long, having its base on the H.P. and an edge of the base parallel to the V.P.	CO 4	A	2	N	3.2.1
112	Draw the TV of a pentagonal pyramid, base 30 mm edge and axis 50 mm long, having its base on the H.P. and an edge of the base parallel to the V.P.	CO 4	A	2	N	3.2.1
113	Draw the FV of a cylinder, base 40 mm diameter and axis 50 mm long resting on the H.P. on their respective bases.	CO 4	A	2	N	3.2.1
114	Draw the TV of a cylinder, base 40 mm diameter and axis 50 mm long resting on the H.P. on their respective bases.	CO 4	A	2	N	3.2.1
115	Draw the FV of a cone, base 40 mm diameter and axis 50 mm long, resting on the H.P. on their respective bases.	CO 4	E	2	N	3.2.1
116	Draw the FV & TV of a square pyramid side of base 30mm and axis height 45mm with its axis parallel to HP and perpendicular to VP and base edges equally inclined to HP.	CO 4	E	5	N	3.2.1
117	A square pyramid with a base side of 30 mm and an axis height of 60 mm is resting on one of its triangular faces on the HP. Draw projections of the pyramid.	CO 4	A	2	N	3.2.1
118	Draw the front view (FV) and top view (TV) of a pentagonal pyramid with a base side of 30 mm and an axis height of 60 mm, placed on HP on its base such that one of its base edges is inclined 300 to the VP.	CO 4	A	2	N	3.2.1
119	A square pyramid of a side of base 25 mm and an axis 50 mm has one of its edges of base on HP and triangular face containing that edge is 250 inclined to HP. Draw its projections	CO 4	A	2	N	3.2.1
120	A pentagonal pyramid with a base edge of 30 mm and slant edges of 70 mm is resting on one of its base corners on Horizontal Plane (HP) and its axis is inclined 500 to HP. Draw its projections.	CO 4	A	2	N	3.2.1
121	A hexagonal pyramid of 25 mm edge of the base and 65 mm length of axis is resting on HP on its apex with axis perpendicular to HP and one of its base edges parallel to VP. Draw its projections.	CO 4	A	2	N	3.2.1
122	A square pyramid of side of base 35 mm and axis 70 mm is resting on one of its edges on HP such that the triangular faces containing that base edge is perpendicular to HP. Draw its projection.	CO 4	A	2	N	3.2.1
123	Draw the FV & TV of a pipe of diameter 60mm and axis height 95mm, having its axis parallel to both the reference planes	CO 4	E	5	N	3.2.1
124	Draw the FV and TV of a pentaprism side of base 35 mm and axis height 45 mm when its axis is perpendicular to HP and parallel to VP	CO 4	A	5	N	3.2.1
125	A square prism, side of base 40 mm and axis 75 mm is resting on one of the Centre of its base in the ground. Draw the projections of the prism when one of itsrectangular faces is parallel to HP.	CO 4	E	5	N	3.2.1
126	A triangular prism with its base edges 20 mm and axis 35 mm has a rectangular side face is inclined at 30degree to the VP and an edge of base within that face is parallel to the VP. Draw the projections of the prism.	CO 4	E	5	N	3.2.1
127	The axis of the hexagonal prism, side of base 30 mm and height 60 mm is inclined at 300 to the HP and parallel to VP. Draw its projections	CO 4	A	5	N	3.2.1
128	A right pentagonal prism 90 mm high with each side of the base 30 mm is resting on one of the base edges on the horizontal plane and the face containing that edge is inclined at 45degree to the HP. Draw the projections of the pentagonal prism.	CO 4	E	5	N	3.2.1
129	Draw the plan and elevation of a right circular tube 50mm diameter of the base and 100mm axis length, when its axis is inclined at 50° to the H.P. and 17° to the V.P.	CO 4	A	10	N	3.2.1
130	A conical shape, diameter 60 mm and height 70 mm has one of the generators in the HP and the plane containing the axis and that generator makes an angle 45° with VP. Draw the projections of the cone when the apex is away from the observer.	CO 4	E	10	N	3.2.1
131	A square pyramid with a base edge of 30 mm and axis height of 70 mm is placed on one of its base edges on the Horizontal Plane (HP). One of its triangular faces, containing this base edge, is inclined at 50° to the HP, and the base edge within this face is parallel to the Vertical Plane (VP). Draw the orthographic projections of the pyramid.	CO 4	A	10	N	3.2.1
132	A pentagonal pyramid base edge 28 mm and axis height 60 mm long rests on its base edges on HP. Draw its projections if the axis is 350 inclined to HP and top view of the axis is 350 inclined to the VP. Consider apex is nearer to the observer.	CO 4	A	10	N	3.2.1
133	A square pyramid with a base side of 35 mm and an axis height of 70 mm is placed on the Horizontal Plane (HP) on one of its base corners. The slant edges containing that base corner is inclined at 450 to HP and top view of that slant edge is inclined 450 to VP with the apex of pyramid being nearer to VP. Draw the projections of the pyramid	CO 4	A	10	N	3.2.1

134	A pentagonal pyramid base edge 28 mm and axis height 60 mm long rests on its base edges on HP such that the triangular face containing that base edge is perpendicular to HP. Draw its projections.	CO 4	A	10	N	3.2.1
135	A square pyramid base edge 30 mm and axis height 60 mm long rests on its base edges on HP. Draw its projections if the axis is 300 inclined to HP and top view of the axis is 350 inclined to the VP. Consider apex is nearer to the observer.	CO 4	A	10	N	3.2.1
136	A hexagonal pyramid of 30 mm base edges and axis length 70 mm is having one of its base edges in the HP and parallel to VP. Draw its projections if its apex is in the VP and 55 mm above HP.	CO 4	A	10	N	3.2.1
137	A pyramid with a square of side of base 40mm and axis 70 mm has one of the triangular faces on the VP. Draw the projections when the front view of the axis is inclined 30° to the HP, keeping the apex nearer to the observer.	CO 4	A	10	N	3.2.1
138	A square pyramid, side of base 40 mm, axis length 60 mm is suspended by a string from one of its corners of the base. The TV of an axis is inclined at 40° to the VP and apex is nearer to the observer. Draw its projections.	CO 4	A	10	N	3.2.1
139	A tetrahedron PQRS of 50 mm long edges has edge PQ in the HP. The edge RS is inclined at 30° and 45° to the HP and VP respectively. Draw its projections.	CO 4	A	10	N	3.2.1
140	A rectangular pyramid has a corner of its base in the HP and axis is inclined at 45° to the HP. Longer edge of rectangular base is making an angle of 30° with XY line in top view. Draw projections of pyramid, whose base size is 40 mm x 50 mm and axis is 65 mm long	CO 4	E	10	N	3.2.1
141	Draw DLS of a square pyramid of base side 20mm and slant edge 50mm	**CO5**	U	2	N	3.2.1
142	Develop the lateral surface of a square pyramid, base side 60 mm, top side 30 mm, and height 100 mm.	**CO5**	U	2	N	3.2.1
143	Develop the lateral surface of a frustum of a hexagonal pyramid with base side 50 mm, top side 25 mm, and height 90 mm.	**CO5**	U	2	N	3.2.1
144	Develop the lateral surface of a square pyramid with base edge 40 mm and slant height 70 mm.	**CO5**	U	2	N	3.2.1
145	Draw DLS of a pentagonal pyramid of base side 25mm and slant edge 60mm	**CO5**	U	2	N	3.2.1
146	Draw DLS of a hexagonal pyramid of base side 25mm and slant edge 65mm	**CO5**	U	2	N	3.2.1
147	Draw DLS of a triangular pyramid of base side 30mm and slant edge 65mm	**CO5**	U	2	N	3.2.1
148	A section plane is perpendicular to VP and 30° inclined to HP and bisecting the axis of pyramid. Draw FV showing the position of the section plane. (Assume the solid is square pyramid of any size resting on its base on HP)	**CO5**	U	2	N	3.2.1
149	A section plane is perpendicular to VP and 40° inclined to HP and bisecting the axis of pyramid. Draw FV showing the position of the section plane. (Assume the solid is any pyramid of any size resting on its base on HP)	**CO5**	U	2	N	3.2.1
150	What is Auxillary Inclined Plane?	**CO5**	U	2	T	3.2.1
151	A cone of base diameter 90 mm and height 120 mm is cut by a plane inclined at 35° to HP and 50 mm below the apex. Draw the sectional views.	**CO5**	U	2	T	3.2.1
152	A cone with base diameter 80 mm and height 150 mm is cut by a vertical plane passing through the axis and inclined 45° to VP. Draw FV and sectional TV.	**CO5**	U	2	T	3.2.1
153	A frustum of a cone with base diameter 100 mm, top diameter 50 mm, and height 120 mm is cut by a plane inclined at 40° to HP. Draw sectional views.	**CO5**	U	2	T	3.2.1
154	A square pyramid with base side 40 mm and axis height 90 mm is cut by an AIP inclined 45° to HP, passing 30 mm below the apex. Draw FV and sectional TV.	**CO5**	U	2	T	3.2.1
155	A pentagonal pyramid with base edge 30 mm and axis height 80 mm is cut by a plane inclined at 50° to HP and bisecting the axis. Draw sectional views.	**CO5**	U	2	T	3.2.1
156	A square pyramid side of base 30 mm, axis height 70 mm is resting on its base on HP such that its base edges are equally inclined to VP. Draw FV and Sectional Top view of the pyramid if the cutting plane is inclined to HP at an angle 35°and 30mm below apex.	**CO5**	A	5	N	3.2.1
157	A pentagonal pyramid with edge of base 30 mm and axis 55 mm length is resting on its base on HP, with one of its base edge perpendicular to VP. It is cut by a AIP inclined at an angle 40° to HP and 30mm above base of the pyramid. Draw FV and sectional top view.	**CO5**	A	5	N	3.2.1
158	A square pyramid side of base 40 mm, axis height 65 mm is resting on HP such that its adjacent base edges are equally inclined to VP. Draw FV and Sectional Top view of the pyramid if the cutting plane is inclined to HP at an angle 45°and bisecting the axis of pyramid	**CO5**	A	5	N	3.2.1
159	A square pyramid side of base 40 mm, axis height 65 mm is resting on HP such that its base edges are equally inclined to VP. Draw FV, sectional TV if the cutting plane is inclined to HP at an angle 45°and bisecting the axis of pyramid	**CO5**	A	5	N	3.2.1
160	A pentagonal pyramid with edge of base 25 mm and axis 50 mm length is resting on its base on HP, with one of its base edge perpendicular to VP. It is cut by a AIP inclined at an angle 50° to HP and bisecting the axis. Draw FV and sectional top view.	**CO5**	A	5	N	3.2.1
161	A hexagonal pyramid side of base 35 mm, axis height 75 mm is resting on HP on its base. Draw the FV and Sectional Top view of the pyramid if the cutting plane is inclined to HP at an angle 30° and bisecting the axis of pyramid.	**CO5**	A	5	N	3.2.1
162	A square pyramid side of base 35 mm, axis height 70 mm is resting on HP on its base such that one of its base edges is parallel to VP. Draw the FV and Sectional Top view of the pyramid, it is cut by AIP inclined to HP at an angle 50° and 30mm below apex.	**CO5**	A	5	N	3.2.1
163	A square pyramid side of base 35 mm, axis height 70 mm is resting on HP on its base. It is cut by an AIP inclined at an angle 50° to HP, bisecting the axis of the pyramid. Draw FV Sectional Top View, DLS of the pyramid.	**CO5**	A	10	N	3.2.1
164	A cone of base diameter 50 mm and axis height 90 mm is resting on HP on its base. It is cut by an AIP inclined at 45° to HP, passing through a point 35 mm below the apex. Draw FV, sectional TV, and DLS.	**CO5**	A	10	N	3.2.1
165	A cone with base diameter 60 mm and height 120 mm is lying on HP on its base. It is cut by an AIP inclined at 30° to HP, passing 50 mm below the apex. Draw FV, sectional TV, and DLS.	**CO5**	A	10	N	3.2.1
166	A cone of base diameter 75 mm and height 130 mm is resting on HP on its base. An AIP inclined at 35° to HP passes 40 mm above the base. Draw FV, sectional TV, and DLS.	**CO5**	A	10	N	3.2.1
167	A hexagonal pyramid with base side 30 mm and axis height 65 mm is lying on HP on its base, with one of its base edges parallel to VP. It is cut by an AIP inclined at 30° to HP, passing 45 mm above the base. Draw FV, sectional TV, and DLS.	**CO5**	A	10	N	3.2.1
168	A square pyramid with base side 30 mm and height 70 mm is resting on HP with one base edge perpendicular to VP. It is cut by an AIP inclined at 30° to HP, passing 25 mm below the apex. Draw FV, sectional TV, and DLS.	**CO5**	A	10	N	3.2.1
169	A hexagonal pyramid base 30 mm side, axis 65 mm is lying on HP on its base base such that one of its base edges is parellel to VP. It is cut by an AIP inclined at an angle 30° to HP. Cutting plane passes at a point 45 mm above the base. Draw FV, Sectional Top View, DLS.	**CO5**	A	10	N	3.2.1
170	A frustum of a hexagonal pyramid with base side 40 mm and top base side 25 mm is cut by an inclined plane. Develop its lateral surface.	**CO5**	A	10	N	3.2.1
171	A triangular pyramid with base side 45 mm and height 70 mm is cut by a plane inclined 40° to HP, passing 30 mm above the base. Develop the lateral surface.	**CO5**	A	10	N	3.2.1
172	A hexagonal prism with base side 35 mm and height 80 mm is cut by an AIP inclined at 30° to HP, bisecting the axis. Draw FV, sectional TV, and DLS.	**CO5**	A	10	N	3.2.1
173	A pentagonal prism with base edge 30 mm and height 70 mm is cut by a plane inclined 40° to HP. Draw FV, sectional TV & Develop its lateral surface.	**CO5**	A	10	N	3.2.1
174	A cone of base diameter 65 mm and axis 100 mm is resting on its base on HP. It is cut by a horizontal plane passing 45 mm below the apex. Draw FV, sectional TV, and True shape.	**CO5**	A	10	N	3.2.1
175	A square pyramid side of base 30 mm, axis height 70 mm is resting on HP on its base such that one of its base edges is perpendicular to VP. It is cut by an AIP inclined at an angle 30° to HP. Cutting plane passes at a point 25 mm below the apex. Draw FV, Sectional Top View, DLS.	**CO5**	A	10	N	3.2.1
176	A pentagonal pyramid base 25 mm side, axis 60 mm is lying on HP on its base such that one of its base edges is perpendicular to VP. It is cut by an AIP inclined at an angle 30° to HP. Cutting plane passes at a point 35 mm above the base. Draw the FV, Sectional Top View, DLS of the pyramid.	**CO5**	A	10	N	3.2.1
177	A hexagonal pyramid side of base 30 mm, axis height 60 mm is resting on HP on its base such that one of its base edges is parallel to VP. It is cut by an AIP inclined at an angle 45° to HP, bisecting the axis of the pyramid. Draw FV, Sectional Top View, DLS.	**CO5**	A	10	N	3.2.1
178	A square pyramid side of base 30 mm, axis height 70 mm is resting on HP on its base such that its adjacent base edges are equally inclined to VP. It is cut by an AIP inclined at an angle 30° to HP. Cutting plane passes at a point 25 mm below the apex. Draw FV, Sectional Top View, DLS.	**CO5**	A	10	N	3.2.1
179	A hexagonal Pyramid side of base 35 mm and axis length 70 mm is resting on its base on HP such that one of its base edges is perpendicular to VP. It is cut by an Auxiliary Inclined Plane (AIP) which is inclined at 45° to HP, bisecting the axis of pyramid. Draw I)FV Ii)Sectional Top View Iii)DLS	**CO5**	A	10	N	3.2.1
180	Define isometric projections	**CO6**	U	2	T	3.2.1
181	Draw an isocircle of 30mm diameter on the left plane	**CO6**	U	2	N	3.2.1
182	Draw an isocircle of 40mm diameter on the right plane	**CO6**	U	2	N	3.2.1
183	Draw an isocircle of 50mm diameter on the top plane	**CO6**	U	2	N	3.2.1
184	Name the method to draw isometric circle	**CO6**	U	2	T	3.2.1
185	What shape do we get by drawing circle in isometric projections	**CO6**	U	2	T	3.2.1
186	Draw an isocircle of 45mm diameter on the right plane	**CO6**	A	2	N	3.2.1

187	Draw isometric view for the given two views 	**CO6**	A	5	N	3.2.1
188	Draw isometric view for the given two views 	**CO6**	A	5	N	3.2.1
189	Draw isometric view for the given two views 	**CO6**	A	5	N	3.2.1
190	Draw isometric view for the given two views 	**CO6**	A	5	N	3.2.1
191	Draw isometric view for the given two views 	**CO6**	A	5	N	3.2.1
192	Draw isometric view for the given two views 	**CO6**	A	5	N	3.2.1

193	Draw isometric view for the given two views 	**CO6**	A	5	N	3.2.1
194	Draw isometric view for the given two views 	**CO6**	A	10	N	3.2.1
195	Draw isometric view for the given two views 	**CO6**	A	10	N	3.2.1
196	Draw isometric view for the given two views 	**CO6**	A	10	N	3.2.1
197	Draw isometric view for the given two views 	**CO6**	A	10	N	3.2.1
198	Draw isometric view for the given two views 	**CO6**	A	10	N	3.2.1

199	Draw isometric view for the given two views 	**CO6**	A	10	N	3.2.1
200	Draw isometric view for the given two views 	**CO6**	A	10	N	3.2.1