UPES
End Semester Examination, May 2024

Course: Mechanical Drawing	**Semester: IV**
Program: BSc(H) Physics	**Time : 03 hrs.**
Course Code: PHYS2018K	**Max. Marks: 100**
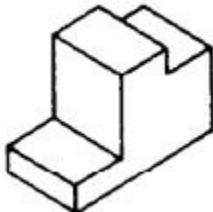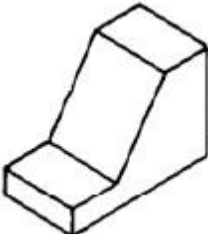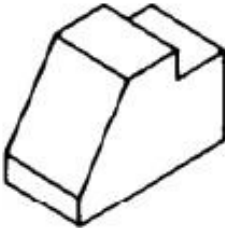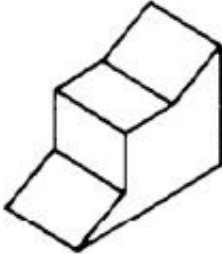
Instructions: Use the provided A3 drawing sheets for the exam.

SECTION A
(5Qx4M=20Marks)

S. No.		Marks	CO
Q 1	Draw the 1st angle projections of the following object having a length of 70 mm, width of 30 mm and height of 50 mm, assuming all other dimensions. 	4	CO1
Q 2	Draw the 1st angle projections of the following object having a length of 70 mm, width of 30 mm and height of 50 mm, assuming all other dimensions. 	4	CO1
Q 3	Draw the 3rd angle projections of the following object having a length of 70 mm, width of 30 mm and height of 50 mm, assuming all other dimensions 	4	CO1

Q 4	Draw the 3rd angle projections of the following object having a length of 70 mm, width of 30 mm and height of 50 mm, assuming all other dimensions	4	CO1
Q 5	Differentiate between Polyhedron solids and Solids of Revolution. Give examples of both types of solids.	4	CO1

SECTION B
(4Qx10M= 40 Marks)

Q 6	A straight-line PQ has its end P 20 mm above the HP and 30 mm in front of the VP. End Q is 80 mm above the HP and 70 mm in front of the VP. If the end projectors are 60 mm apart, draw the projections of the line. Determine its true length and true inclinations with the reference planes.	10	CO1
Q 7	A semicircular plate of 70 mm diameter has its straight edge in the VP. The surface of the plate makes an angle of 30° with the VP. Draw its projections.	10	CO2
Q 8	A 30° – 60° set square of longer side 80 mm longer side, which is in the VP, is 45° inclined to VP. Draw its projections. **OR** A rhombus of diagonals 40 mm and 70 mm long has one end of its major diagonal in HP. It looks like a square of 40 mm diagonals in the TV. Draw its projections and find its inclination with the HP.	10	CO2
Q 9	A square pyramid, base 40 mm side and axis 65 mm long, has its base in the VP. One edge of the base is inclined at 30° to the H.P., and a corner contained by that edge is on the H.P. Draw its projections.	10	CO3

SECTION-C
(2Qx20M=40 Marks)

Q 10	(a) A tetrahedron of 50 mm long edges is resting on one edge on HP while one triangular face containing this edge is vertical. Draw its projections. (b) Draw the projections of a cone, base 50 mm diameter and axis 70 mm long, lying on the H. P. on one of its generators with the axis parallel to the V.P.	20	CO3

| Q 11 | A hexagonal pyramid, base 30 mm side and axis 65 mm long, is resting on its base on the H.P. with two edges parallel to the V.P. It is cut by a section plane, perpendicular to the V.P. inclined at 45° to the H.P. and intersecting the axis at a point 25 mm above the base. Draw the front view, sectional top view, sectional side view and true shape of the section.

OR

A cone with a 40 mm diameter and 50 mm axis is resting on one generator on HP, which is parallel to VP. Draw its projections (the front view, sectional top view, sectional side view and true shape) if it is cut by a horizontal section plane through its base centre. | **20** | **CO4** |