Indian Institute of Space Science & Technology

End Semester Examination

B.Tech. Second Semester June 2022

Engineering Graphics (AE-141) – PB2

Time: 3 hours Max. Marks: 100

1. The distance between end projectors of a line AB is 60mm. A is 15 mm behind VP and 60 mm below HP, and end B 70 mm above HP and 30 mm infront of VP. Draw the projections of the line. Find the true length and true inclinations of the line with HP and VP. **13 Marks**

2. A hexagonal prism, base edge 30 mm and height 60 mm is resting on its base on HP with one base edge parallel to VP. A pentagonal hole, side 25 mm is drilled through this prism in such a way that one face of the hole is vertical, parallel to and is in line with the axis of the prism. Draw the development of the lateral surface of the prism, if the axis of the hole is perpendicular to VP and is at a height of 30 mm above the base of the prism. **18 Marks**

3. A pentagonal pyramid 30 mm base edge and 60 mm height is resting on its corner with two of its faces equally inclined to HP and the apex in VP. The slant edge containing the corner on which it rest is at 60° with HP. Draw the projections if the sum of the angles of the axis with the reference planes is equal to 90° (or the axis is in profile plane PP). **18 Marks**

4. A tetrahedron of side 60 mm is resting on one of its triangular faces on HP with one of the edges of the face perpendicular to VP. The solid is sectioned by a cutting plane perpendicular to VP in such a way that the true shape of the section is a square of side 30 mm. Draw the front view, sectioned top view and true shape. Measure the inclination of the section plane with HP. **17 Marks**

5. A triangular prism, base edge 30 mm and height 60 mm is resting vertically on a circular disc of diameter 60 mm and thickness 20 mm. Draw the isometric view if the axes are coinciding each other. **17 Marks**

6. Draw the front, top and left side view of the figure given below. 'X' shows the direction of front view. **17 Marks**