SNS ACADEMY

CLASS –XI
ASSIGNMENT- 14

SUBJECT – MATHEMATICS
TOPIC – INTRODUCTION TO 3-DIMENSIONAL GEOMETRY

Q1. Find the ratio in which the line joining the points (2, 4, 16) and (3, 5, -4) is divided by the plane $2x – 3y+ z + 6 = 0$. Also find the co-ordinates of the point of division.

Q2. Find the ratio in which the line segment joining the points (2, 4, 5) and (3, 5, -4) is divided by the YZ-plane. Also find the co-ordinate of the point of division.

Q3. Using section formula, show that point P (2, -3, 4), Q (-1, 2, 1) and R $(0, \frac{1}{3}, 2)$ are collinear.

Q4. Find the co-ordinates of the centroid of the triangle whose vertices are (1, 5, -2), (3, 2, 7) and (-7, -1, 4)

Q5. Three vertices of a parallelogram ABCD are A (3, -4, 7) B (5, 3, -2) and C (1, 2, -3). Find the fourth vertex D.

Q6. Find the coordinates of the points which trisect the line segment AB, given A (2, 1, -3) and B (5, -8, 3).

Q7. The x co-ordinate of a point is 9. Find its other co-ordinates if this point lies on the line joining the points (7, 2, 1) and (10, 5, 7)

Q8. A point P(x, y, z) is such that 3PA = 2PB, when A and B are the points (1, 3, 4) and (1, -2, -1) respectively. Find the equation to the locus of the point P.

Q9. Show that the points (-1, -6, 10), (1, -3, 4), (-5, -1, 1) and (-7, -4, 7) are the vertices of a rhombus.

Q10. Prove that the points (1, 2, 3), (-1, 1, 4) and (0, 3, 3) and (1, 3, 2) are equidistance from the pt. (-1, 1, 1).

Q11. Find the co-ordinates of the point which divides the line segment joining the points (-2, 3, 5) and (1, -4, -6) in the ratio (2:3 internally   (ii) 2:3 externally