DELHI PUBLIC SCHOOL, JAMMU
Assignment
SESSION (2018 – 19)

Class: XI
Sub: Maths

Q1. In a certain A.P. the 24th term is twice the 10th term. Prove that the 72nd term is twice the 34th term.

Q2. If the nth term of the A.P. 9, 7, 5,… is same as the nth term of the A.P. 15, 12, 9,…. find n.

Q3. How many terms are there in the A.P. whose first and fifth terms are -14 and 2 respectively and the sum of the terms is 40?

Q4. The sum of first 7 terms of an A.P. is 10 and that of next 7 terms is 17. Find the progression.

Q5. The third term of an A.P. is 7 and the seventh term exceeds three times the third term by 2. Find the first term, the common difference and the sum of first 20 terms.

Q6. Between 1 and 31 are inserted m arithmetic means so that the ratio of the 7th and $(m – 1)$ th means is 5 : 9. Find the value of m.

Q7. Evaluate the following $\sum_{n=1}^{n}\left(2^{k}+3^{k-1}\right)$

Q8. The fifth term of a G.P. is 81 whereas its second term is 24. Find the series and sum of its first eight terms.

Q8. Find the equation of a line which passes through the point (22, -6) and is such that the intercept on x-axis exceeds the intercept on y-axis by 5.

Q9. Find the equation of the line passing through the point (2, 2) and cutting of intercepts on the axes whose sum is 9.

Q10. Find the equation of the line whose perpendicular distance from the origin is 4 units and the angle which the normal makes with the positive direction of x-axis is 15°

Q11. Find the equation of a straight line on which the perpendicular from the origin makes an angle of 30° with x-axis and which forms a triangle of area $50 / \sqrt{3}$ with the axes.

Q12. Find the equation of the straight line perpendicular to $2x – 3y = 5$ and cutting off an intercept 1 on the positive direction of the x-axis.

Q13. Find the equation of the circle whose centre is at (3, 4) and which touches the line 5x + 12y = 1.

Q14. Find the equations of the circle passing through two points on Y-axis at distances 3 from the origin and having radius 5.

Q15. Find the equation of a parabola with vertex at the origin, the axis along x –axis and passing through (2, 3)

Q16. Find the equation of a parabola with vertex at the origin and the directrix, y = 2.

Q17. Find the equation of the parabola whose focus is (5, 2) and having vertex at (3, 2).

Q18. Find the area of the triangle formed by the lines joining the vertex of the parabola $x^2 = 12y$ to the ends of its latus-rectum.

Q20. Find the equation of an ellipse whose foci are at $(\pm 3, 0)$ and which passes through (4, 1).

Q21. Find the equation of an ellipse whose eccentricity is 2/3, the latus-rectum is 5 and the centre is at the origin.