CLASS X

SAMPLE PAPER

MATHS

General Instructions:

All questions are compulsory.
Question paper is divided into four sections: Section A contains 4 questions each carry 1 mark, Section B contains 4 questions each carry 2 marks, Section C contains 4 Questions each carry 3 marks and Section D contains 4 questions each carry 4 marks.

SECTION – A (1 marks each)

1. For what values of k will the following pair of linear equations have infinitely many Solutions?
$kx + 3y – (k – 3) = 0$ and $12x + ky – k = 0$
2. State Euclid's Division Lemma.
3. Find the quadratic polynomial whose zeroes are $7 + \sqrt{3}$ & $7 - \sqrt{3}$
4. The angles of a quadrilateral are in AP whose common difference is 10°. Find the angles.

SECTION – B (2 marks each)

5. Divide: $3x^2 – x^3 – 3x + 5$ by $x – 1 – x^2$.

6. Find the roots of the equation: $2x^2 - x + \frac{1}{8} = 0$
7. The sum of n terms of an AP is $(5n^2 - 3n)$. Find the AP and hence find its 10th term.
8. Which term of the AP 24, 21, 18, 15, ….is first negative term?

9. Solve: px + qy = p – q and qx – py = p + q
10. Prove that $7 - 2\sqrt{3}$ is an irrational number.
11. Find the roots of the equation: $\frac{1}{x+4} - \frac{1}{x-7} = \frac{11}{30}$
12. 200 logs are stacked in the following manner: 20 logs in the bottom row, 19 in the next row,18 in the row next to it and so on. In how many rows are the 200 logs placed and how many logs are in the top row?

SECTION – C (4 marks each)

13. Draw the graphs of the equations x – y + 1 = 0 and 3x + 2y – 12 = 0. Determine the coordinates of the vertices of the triangle formed by these lines and the x-axis, and shade the triangular region.
14. A motor boat whose speed is 18 km/h in still water takes 1 hour more to go 24 km upstream than to return downstream to the same spot. Find the speed of the stream.
15. Obtain all the zeroes of $x^4 - 6x^3 - 26x^2 + 138x - 35$, if two of its zeroes are $2 + \sqrt{3}$ & $2 - \sqrt{3}$
16. Show that any positive odd integer is of the form 6q + 1 or 6q + 3 or 6q + 5 where

q∈ Z.