ANGEL'S PUBLIC SCHOOL

SAMPLE PAPER
PERIODIC TEST – I   SESSION 2021 – 22
CLASS – IX   SUBJECT : MATHEMATICS

TIME: 1.5 HRS   **M.M: 50**
GENERAL INSTRUCTIONS: ROLL NO – _____
   (a) The question paper is divided into 4 sections : A,B,C and D.
   (b) Section **–** A comprises 5 questions of 1 mark each.
   (c) Section **–** B comprises 5 questions of 2 marks each.
   (d) Section **–** C comprises 6 questions of 3 marks each. <u>Attempt any 5.</u>
   (e) Section **–** D comprises 7 questions of 4 marks each. <u>Attempt any 5.</u>

<u>SECTION – A</u>

1. Find: $(64)^{\frac{1}{2}}$

2. Simplify: $(3 + \sqrt{2})(3 - \sqrt{2})$

3. In which quadrant do $(3,-3)$ and $(-4,-3)$ lie?

4. Define monomial.

5. Is zero a rational number? Can you write it in the form $\frac{p}{q}$, where p and q are integers and $q \neq 0$?

<u>SECTION – B</u>

6. Check whether -2 and 2 are zeroes of the polynomial of $x+2$.

7. Find the zero of the polynomial: $p(x) = ax+b$, $a \neq 0$, where a and b are real numbers.

8. (a) What is the name of the horizontal and vertical lines drawn to determine the position of any point in the Cartesian plane?   **(b)** What is the name of the point where these two lines intersect?

9. Evaluate $(104)^2$, using suitable identity.

10. Rationalise the denominator of $\frac{1}{5+\sqrt{3}}$.

<u>SECTION – C</u> (ATTEMPT ANY FIVE)

11. Find $p(0)$, $p(2)$ and $p(3)$ for the polynomial: $p(x) = x^2 - x + 1$.

12. Write $(\frac{3}{2}x+1)^3$ in expanded form.

13. Factorise: $8x^3 + y^3 + 27z^3 - 18xyz$

14. Check whether $7 + 3x$ is a factor of $2x^3 + 4x$.

15. Factorise: $2x^2 + 4x + 2$

16. Express $0.\overline{6}$ in the form of $\frac{p}{q}$, where p and q are integers and $q \neq 0$.

<u>SECTION – D</u> (ATTEMPT ANY FIVE)

17. Find three irrational numbers between the rational numbers $\frac{5}{7}$ and $\frac{9}{11}$.

18. Find five rational numbers between $\frac{3}{7}$ and $\frac{4}{5}$.

19. Plot the points (x,y) given in the following table on the plane, choosing suitable units of distance on the axis.

X	– 2	– 1	0	1	3
Y	8	7	–1.2	3	– 1

20. Simplify the following.

   (a) $(5 + \sqrt{7})\ (2 + \sqrt{5})$

   (b) $(\sqrt{3} + \sqrt{5})^2$

21. Plot the following points on a graph paper.

   (2,0), (1,3), (5,4), (-3,2)

22. Factorise: $4x^2 + 9y^2 + 16z^2 + 12xy - 24yz - 16xz$

23. (a) Give one example each of a binomial of degree 32 and of a monomial of degree 12.

   (b) Determine whether polynomial $(x+1)$ is a factor of $x^4 + x^3 + x^2 + x + 1$.