

1st Periodic Assessment: (2025-2026)

Name of the student :

Roll: Sec:

- **Section A** contains 10 questions of 1 mark each.
- **Section B** contains 5 questions of 2 marks each.
- **Section C** contains 4 questions of 3 marks each.
- **Section D** contains 2 questions of 5 marks each.
- **Section E** contains 2 questions (CASE STUDY) of 4 marks each.

- If $x + y + z = 0$ then $x^3 + y^3 + z^3$ is equal to
 - $3xyz$
 - $-3xyz$
 - xy
 - $-2xy$
- Every point on a number line represents
 - a rational number
 - a natural number
 - an irrational number
 - a unique number
- Which of the following is an irrational number?
 - 0.3799
 - $\sqrt{23}$
 - $\sqrt{225}$
 - $7.\overline{478}$
- A rational number lying between $\sqrt{2}$ and $\sqrt{3}$ is
 - $\sqrt{6}$
 - 1.6
 - 1.9
 - $\frac{\sqrt{2}+\sqrt{3}}{2}$
- The angles of a triangle are in the ratio $2 : 3 : 4$. The largest angle of the triangle is
 - 120°
 - 100°
 - 80°
 - 60°
- An angle is one fifth of its supplement. The measure of the angle is
 - 15°
 - 30°
 - 75°
 - 150°
- The value of $p(y) = y^2 - y + 1$ for $p(0)$ is:
 - 1
 - 3
 - 2
 - 1
- If two angles are complements of each other then each angle is
 - an acute angle
 - an obtuse angle.
 - a right-angle
 - a reflex angle.
- The degree of $4 - y^2$ is:
 - 0
 - 1
 - 2
 - 3
- Which are the zeroes of $p(x) = x^2 - 1$:
 - 1, -1
 - 1, 2
 - 2, 2
 - 3, 3

- 11.** Find four rational number between 0.2 and 0.3.
- 12.** Simplify: $(3\sqrt{5} - 5\sqrt{2})(4\sqrt{5} + 3\sqrt{2})$
- 13.** Find the value of k, if $x - 1$ is a factor of $p(x) = 2x^2 + kx - \sqrt{2}$.
- 14.** Determine whether the polynomial $x^3 + x^2 + x + 1$ has $(x + 1)$ a factor.
- 15.** Can a triangle have two obtuse angles? Give reason for your answer.

- 16.** Show that $0.4\overline{7}$ can be expressed in the form $\frac{p}{q}$, where p and q are integers and $q \neq 0$.
- 17.** Locate $\sqrt{5}$ on the number line.
- 18.** If $p(x) = x^2 - 4x + 3$, evaluate : $p(2) - p(1) + p(-1)$
- 19.** Prove that the sum of three angles of a triangles of a triangle is 1800.

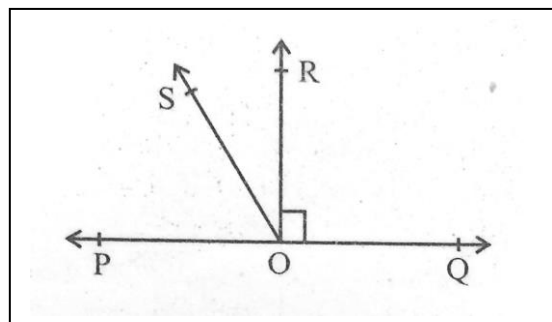
SECTION-D

20. (i) Prove that if two lines intersect each other, then the vertically opposite angles are equal.

(2 + 3)

- (ii) In the given Figure, POQ is a line. Ray OR is perpendicular to line PQ. OS is another ray lying between rays OP and OR. Prove that

$$\angle ROS = \frac{1}{2}(\angle QOS - \angle POS).$$



21. i) Find the value of P, if $(x+1)$ is a factor of the polynomial $2x^3 - 2x^2 + x - P$.
ii) Using suitable identity, factorise :

$$27x^3 - 27x^2y + 9xy^2 - y^3$$

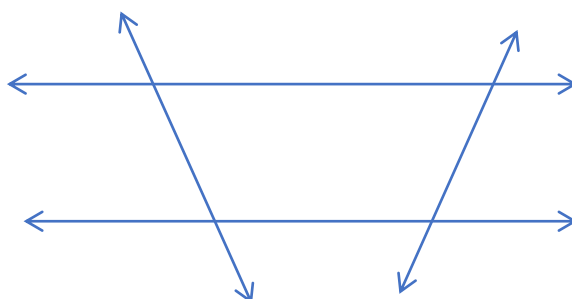
SECTION-E

Case study-based questions:

22. Mobile phones are very harmful for our eyes if they are used for a longer period of time. School going children spend long hours on phone in their free time and as a result their eyesight become weak. To generate awareness about the ill effects of “using mobile phone for long hours” a group of ‘ $2x + 3y$ ’ teachers, ‘ xy ’ boys and ‘ $2x^3 + 27y^3$ ’ girls in a school started the campaign on the same.

Based on the above information, answer the following questions:

- (a) Name the mathematical concept used here.
(b) Write the coefficient of x of the polynomial $2x^3 + 27y^3$.
(c) If $2x + 3y = 12$ and $xy = 6$, then find the value of $4x^2 + 9y^2$.
23. The space between the four streets l, m, n and p was used for dumping garbage. An NGO planned to get it cleaned and make a playground for children. The information is shown in the figure.



- i) Are streets l and m parallel?
ii) Why are the streets n and p parallel?
iii) What type of pair of angles are x and y? find the value of $(x + y)$