INDIAN SCHOOL AL WADI AL KABIR

Final Examination Revision Paper (2025-26)

Class: IX | Sub: MATHEMATICS (Subject Code 041) | Max Marks: 80

Time:3 hours

General Instructions:

1. This question paper has 5 sections- A, B, C, D and E.
2. Section A- PART-1 (MCQ) comprises of 18 questions of 1 mark each
3. Section A- PART-2 (Assertion and Reason) comprises of 2 questions of 1 mark each.
4. Section B- (Short answer) comprises of 5 questions of 2mark each.
5. Section C- (Long answer) comprises of 6 questions of 3 marks each.
6. Section D- (Long answer) comprises of 4 questions of 5 marks each.
7. Section E – comprises of 3 Case study-based questions of 4 marks each with sub parts of the values 1, 1 and 2 marks each respectively.
8. All Questions are compulsory. However, an internal choice has been provided for certain questions.

Section A

PART-1 MCQ (1 mark each)

Q.1. The point which lies on x-axis at a distance of 11 units in the negative direction of x-axis is:

A (11, 0) **B** (-11, 0) **C** (0, -11) **D** (0, 11)

Q.2. The value of k if the point (2, -3) lies on the line 5x + ky = 1 is_____.

A 3 **B** -3 **C** -9 **D** 9

Q. 3. The coefficient of x^2 in the expansion of $(2x + 3)(2x + 7)$ is:

A 27 **B** 13 **C** 4 **D** 21

Q. 4. The length of each side of an equilateral triangle is 16 cm, then the area of the triangle is:

A $64\sqrt{3}cm^2$ B $256\sqrt{3}cm^2$ C $16\sqrt{5}cm^2$ D $48\sqrt{3}cm^2$

Q. 5. The number 0.23333 ..... in the form $\frac{p}{q}$, where p and q are integers and q≠0 can be expressed as:

A $\frac{23}{99}$ **B** $\frac{7}{30}$ **C** $\frac{21}{90}$ **D** $\frac{233}{1000}$

Q. 6. According to Euclid's definition, the ends of a line are_____.

A breadthless **B** lengthless **C** points **D** None of these

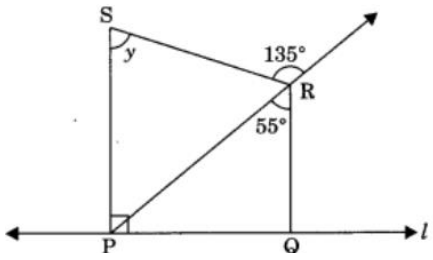
Q. 7. The denominator of $\frac{5}{4\sqrt{3}-3\sqrt{2}}$ after rationalizing the denominator is:

A $3\sqrt{6}$ **B** 30 **C** 12 **D** 6

Q. 8. The value of $318^2 - 317^2$ is_____.

A 635 **B** 1 **C** 636 **D** 100,806

Q. 9. In the given fig. $PS \perp l, RQ \perp l$, then the value of y is:



A 55° **B** 90° **C** 80° **D** 135°

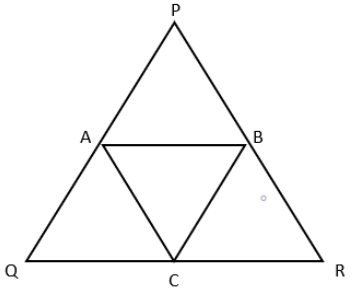
Q.10. If the volumes of two cones be in the ratio 1:4 and the radii of their bases be in the ratio 4:5, then the ratio of their heights is_____.

A 25:64 **B** 5:4 **C** 25:16 **D** 1:5

Q.11. XYZ is a right angled triangle in which $\angle Y = 90°$ and XY = YZ, then sum of the measure of angle X and Z is:

A 45° **B** 180° **C** 135° **D** 90°

Q.12. The perimeter of ΔABC, if perimeter of ΔPQR is 36cm and A, B and C are midpoints, is:



A 18cm **B** 36cm **C** 20cm **D** 9cm

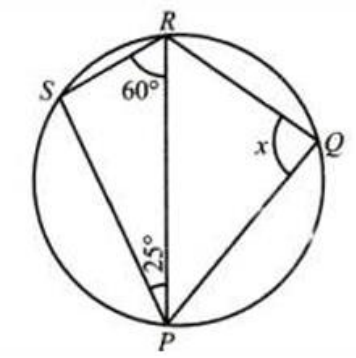
Q.13. The radius of a sphere is 3r, then its volume will be:

A $\frac{4}{3}\pi r^3$ **B** $\frac{32}{3}\pi r^3$ **C** $\frac{8}{3}\pi r^3$ **D** $36\pi r^3$

Q.14. If $4 + 6 - 10 = 0$, then the value of $(4)^3 + (6)^3 + (-10)^3$ is_____.

A 280 **B** -720 **C** -280 **D** 0

Q.15. In the given figure, PQRS is a cyclic quadrilateral. If ∠SPR = 25° and ∠PRS = 60°, then the value of x is:



A 125° **B** 90° **C** 85° **D** 105°

Q.16. The class marks of the frequency distribution are 12, 18, 24, 30,.....Then the class representing the class mark 18 is:

A 12-24 **B** 16-20 **C** 15-21 **D** 10-26

Q.17. Volume of a hemisphere is 19404 cubic cm. The total surface area is:

A $5544\ cm^2$ **B** $1386\ cm^2$ **C** $2772\ cm^2$ **D** $4158\ cm^2$

Q.18. By applying RHS congruence rule, you want to establish that ΔABC ≅ΔXYZ. It is given that $\angle B = \angle Y = 90°$ and AB = XY. The additional information needed to establish the congruence is:

A $\angle A = \angle X$ **B** $\angle C = \angle Z$ **C** $AC = XZ$ **D** BC = YZ

DIRECTION: A statement of Assertion (A) is followed by a statement of Reason (R).

Choose the correct option.

(A) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A).

(B) Both Assertion (A) and Reason (R) are true and Reason (R) is not the correct explanation of Assertion (A).

(C) Assertion (A) is true but Reason (R) is false.

(D) Assertion (A) is false but Reason (R) is true.

Q.19 **Assertion**: Abscissa of a point is positive in the quadrant III.

Reason: If P (7, -5) is a point on the graph, and a perpendicular PM is drawn from P to y-axis. Then the coordinates of M are (0, -5).

Q.20 **Assertion**: Two angles measures b−25° *and* 140°−2b. If each one is opposite to equal sides of an isosceles triangle, then the value of 'b' is 55°.

Reason: One angle of an equilateral triangle is less than 60°.

Section B

S.A. (2 mark each)

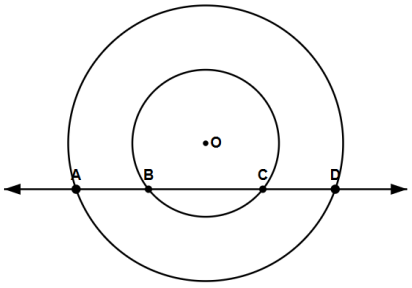
Q.21. Check whether (3x - 2) is a factor of the polynomial $f(x) = 3x^3 - 5x^2 + 4x - 4$.

Q.22. a) A capsule of medicine is in the shape of a sphere of diameter 7 mm. Find the area of the coating required to cover this capsule.

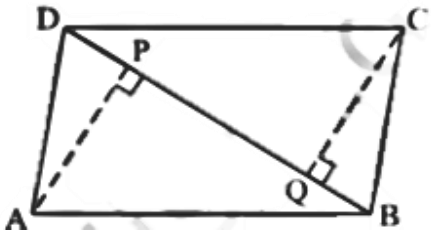
OR

b) Find the curved surface area and the total surface area of a cone whose height is 6 cm and slant height 10 cm. (Take π = 3.14)

Q.23. Two concentric circles with centre O have A, B, C and D as the points of intersection with a line as shown in the figure. If AD = 12 cm and BC = 8 cm, find the lengths of AB and CD.



Q.24. ABCD is a parallelogram and AP and CQ are perpendiculars from vertices A and C on diagonal BD. Prove that Δ APB ≅ Δ CQD.



Q.25. a) Write down four solutions for the equation 3x+2y=12.

OR

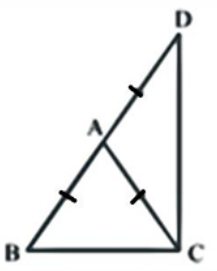
b) A school library charges a fine of ₹5 per day for overdue novels and ₹8 per day for overdue reference books. A student paid a total fine of ₹116. Another student who kept the same number of novels overdue and the same number of reference books overdue paid a fine of ₹6 per day for novels and ₹10 per day for reference books, totaling ₹134.
Express the equations relating the number of days novels were overdue as x, and the number of days reference books were overdue as y in the form ax + by + c = 0.

Section C

S.A. (3 mark each)

Q.26. State any three Euclid's Postulates.

Q.27. ΔABC is an isosceles triangle in which AB = AC. Side BA is produced to D such that AD = AB. Show that ∠ BCD is a right angle.



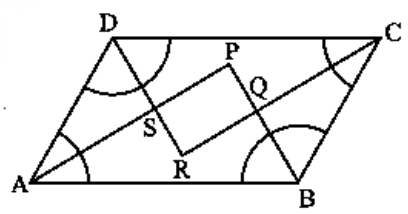
Q.28. a) If $p(z) = z^3 - 5z^2 + 3z - 7$, then find the value of $p(3) + p(2) + p(-1) - p(0)$.

OR

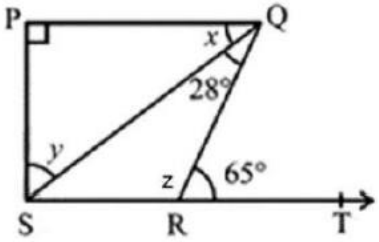
b) Find the value of $a^2 + b^2 + c^2$,$if\ a + b + c = 11$ and $ab + bc + ca = 36$.

Q.29. The internal and external diameters of a hollow hemispherical vessel are 20 cm and 28 cm respectively. Find the cost of painting the vessel all over at 35 paise per cm^2.

Q.30. Show that the bisectors of angles of a parallelogram form a rectangle.



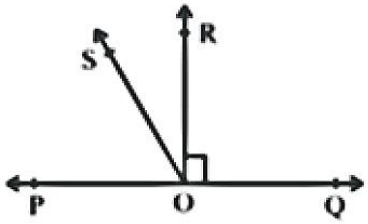
Q.31. a) In the given figure, if PQ⊥PS, PQ∥SR, ∠SQR = 28° and ∠QRT = 65°, then find the values of x, y and z respectively.



OR

b) In Fig. POQ is a line. Ray OR is perpendicular to line PQ. OS is another ray lying between rays OP and OR Prove that:

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



Section D

L.A.(5 mark each)

Q. 32. a) Find the value of a and b if $\frac{5+\sqrt{3}}{5-\sqrt{3}} - \frac{5-\sqrt{3}}{5+\sqrt{3}} = a + \frac{b}{11}\sqrt{3}$

OR

b) If $x = \frac{\sqrt{3}+1}{\sqrt{3}-1}$ and $y = \frac{\sqrt{3}-1}{\sqrt{3}+1}$, then find the value of $x^2 + y^2 + xy$.

Q. 33. Draw a histogram to represent the following data:

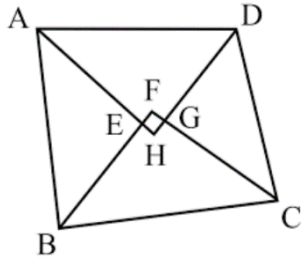
Class interval	10–14	14–20	20–32	32–52	52–80
Frequency	5	6	9	25	21

Q.34. Factorise: $x^3 + 2x^2 - 5x - 6$.

Q.35. a) If two equal chords of a circle intersect within the circle, prove that the segments of one chord are equal to corresponding segments of the other chord.

OR

b) Prove that the quadrilateral formed (if possible) by the internal angle bisectors of any quadrilateral is cyclic.



Section E

CASE STUDY BASED QUESTIONS (4 mark each)

Q.36. During revision hours, two students Vimal and Sunil were discussing with each other about the topics of Number System.

Vimal explained the simplification of $(3\sqrt{5} - 5\sqrt{2})(4\sqrt{5} + 3\sqrt{2})$ by using identity and Sunil explained the simplification of exponents with rational powers.

Based on the above information answer the following questions :

i. a) Represent geometrically $\sqrt{4.7}$ on the number line

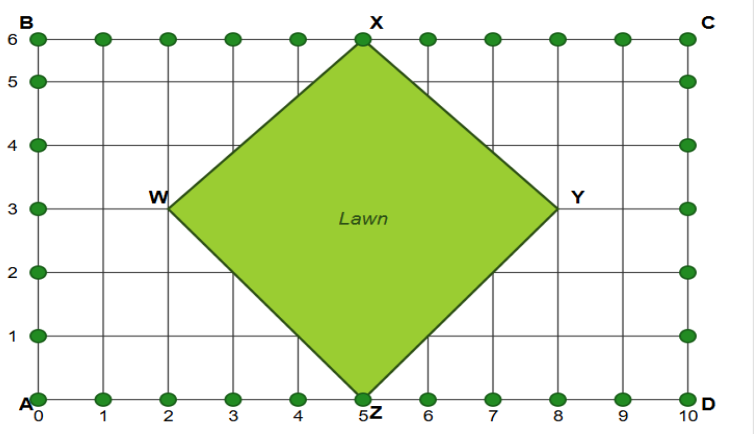
OR (2m)

b) Simplify: $(3\sqrt{5} - 5\sqrt{2})(4\sqrt{5} + 3\sqrt{2})$

ii. What is the simplest rationalising factor of $\frac{1}{\sqrt{75}}$? (1m)

iii. Find the product of $\sqrt[3]{2}, \sqrt[4]{2}, and\ \sqrt[12]{32}$. (1m)

Q.37. The Class IX students of Green Valley School have been allotted a rectangular plot of land for their environmental studies activity. Saplings of Neem are planted along the boundary at a distance of 1 m from each other. There is a lawn WXYZ inside the plot as shown in the figure.



Based on the above information, answer the following questions:

i. What are the coordinates of X, taking A as the origin? (1m)

ii. Find the sum of abscissa of point Z and ordinate of point Y. (1m)

iii. a) Find the area of the lawn

OR (2m)

b) Plot the points P (4, 9) and Q (4, -3) on a graph paper. Join them and write the coordinate of the point where the line PQ cuts the x-axis.

Q.38. World sandwich day is celebrated every year on 3 November. The sandwich got it's name from John Montagu in the 18th century. On the occasion of sandwich day, a food manufacturing company decided to make a record by making the biggest triangular sandwich. Suppose sides of sandwich are 7m, 8m and 9m.

Use the above information, to answer the following questions:

i. Find the perimeter of the triangular sandwich. (1m)

ii. a) The company wants to cover the sandwich with a layer of cheese. What is the area of cheese required?

OR (2m)

b) Calculate the length of the altitude drawn from the longest side to the opposite vertex.

iii. The company wants to make a smaller triangular sandwich with sides in the ratio 2:3:4. If the perimeter is 18 m, find the length of each side. (1m)

****

ANSWERS							
Q.1	B	**Q.2**	A	**Q.3**	C	**Q.4**	A
Q.5	B	**Q.6**	C	**Q.7**	B	**Q.8**	A
Q.9	C	**Q.10**	A	**Q.11**	D	**Q.12**	A
Q.13	D	**Q.14**	B	**Q.15**	C	**Q. 16**	C
Q.17	D	**Q.18**	C	**Q.19**	D	**Q.20**	C
Q.21	Not a factor	**Q.22**	a) 154 mm^2 b) CSA= 251.2cm², TSA= 452.16 cm²	**Q.23**	AB = CD =2cm	**Q.24**	AAS Congruence
Q.25	**a**) (0, 6),(4,0), (2, 3), (-2, 9).. -any four b) 5x + 8y - 116 = 0, 6x + 10y - 134 = 0	**Q.28**	**a)** -38 **b)** 49	**Q.29**	TSA = 2162.28 cm^2 Total cost= ₹756.8	**Q.31**	**a)** x = 37°, y = 53°, z = 115°
Q.32	a) a = 0, b = 10 b) 15	**Q.34**	(x + 1)(x + 3)(x − 2)	**Q.36**	**i)** b) $30 - 11\sqrt{10}$ **ii)** $\sqrt{3}$ **iii)** 1	**Q.37**	**(i)** X = (5, 6) **(ii)** Sum = 5 + 3 = 8 **(iii)** a) Area = (1/2) × 6 × 6 = 18 m² b) (4, 0)
Q.38	**i)** 24m **ii) a)** $12\sqrt{5}\ m^2$ b) $\frac{8\sqrt{5}}{3}\ m$ **(iii)** 4m, 6m, 8m						

****