INDIAN SCHOOL AL WADI AL KABIR

Revision Question 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. Which among the following is the decimal expansion of an irrational number?

A 0.75 **B** 0.1010010001... **C** 0.3333... **D** None of these

Q.2. An angle is 26° less than its complementary angle. The measure of this angle is_____.

A 58° **B** 57° **C** 25° **D** 48°

Q. 3. The point whose abscissa is -8 and lies on x-axis is:

A (0,8) **B** (8,0) **C** $(-8,0)$ **D** $(0,-8)$

Q. 4. The class marks of two successive classes are given as 45 and 55. Then the width of each class interval is:

A 10 **B** 5 **C** 6 **D** 3

Q. 5. The length of the sides of a triangle are 6 cm, 8 cm and 10 cm. The length of altitude of the triangle corresponding to the side 10 cm is:

A $48\ cm$ **B** $4.8\ cm$ **C** $24\ cm$ **D** $2.4\ cm$

Q. 6. Which of the following is not a Euclid's postulate?

A A straight line may be drawn from any one point to any other point **B** A terminated line can be produced indefinitely **C** All right angles are equal to each other **D** A circle has exactly two centres

Q. 7. $\sqrt{15} \times \sqrt{20}$ is equal to:

A $2\sqrt{15}$ **B** $10\sqrt{3}$ **C** 30 **D** $5\sqrt{3}$

Q. 8. Among the following, which is a valid congruency criterion for triangles?

A ASA **B** SSA **C** AAA **D** ASS

Q. 9. If the perimeter of an equilateral triangle is $24\sqrt{3}\ cm$. Then area of the triangle (in cm^2) is:

A $8\ cm^2$ **B** $8\sqrt{3}cm^2$ **C** $48\sqrt{3}\ cm^2$ **D** $48\ cm^2$

Q.10. If the coordinates of two points are A (4, -1) and B (1, 6), then (abscissa of A) – (ordinate of B) is_____.

A -2 **B** 0 **C** 2 **D** None of these

Q.11. The width of each of the four continuous classes in a frequency distribution is 5, and the upper-class limit of the highest class is 60. Then the lower-class limit of the lowest class is:

A 50 **B** 55 **C** 35 **D** 40

Q.12. If the measures of two adjacent angles are $(4x + 10)°$ and $(x + 20)°$ and they form a linear pair, then the value of x is_____.

A 30° **B** 35° **C** 45° **D** 60°

Q.13. If the actual frequency of the class interval $90 - 120$ is 15 and the minimum class size is 10, then the adjusted frequency of this class interval is_____.

A 30 **B** 105 **C** 10 **D** 5

Q.14. If a whole pizza is sliced into several pieces, it is known that the size of the whole pizza is greater than the size of any one slice. The Euclid's axiom that illustrates this statement is:

A First axiom **B** Fifth axiom **C** Second axiom **D** Third axiom

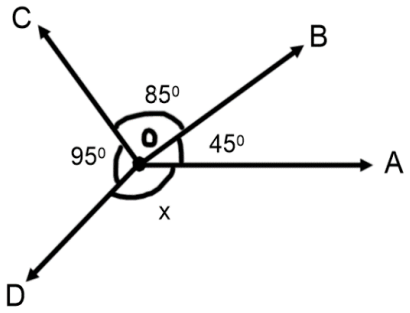
Q.15. There is a number x such that x^2 is irrational but x^4 is rational. Then x can be_____.

A $\sqrt[5]{10}$ **B** $\sqrt[3]{2}$ **C** $\sqrt[4]{2}$ **D** $\sqrt[5]{20}$

Q.16. If the x-coordinate of a point is zero, then this point lies:

A On X - axis **B** In III Quadrant **C** On Y-axis **D** In I Quadrant

Q.17. In the given figure, rays OA, OB, OC, and OD are drawn from point O. If ∠AOB = 45°, ∠BOC = 85°, and ∠COD = 95°, then the value of x is____.



A 315° **B** 225° **C** 35° **D** 135°

Q.18. In triangles ABC and DEF, AB = FD and ∠A = ∠D. The two triangles will be congruent only if:

A BC = EF **B** AC = EF **C** AC = DE **D** BC = DE

DIRECTION: A statement of Assertion (A) is followed by a statement of Reason (R). Choose the correct option.

Q.19 Statement A (Assertion): An isosceles triangle with equal sides 8 cm each and base 12 cm has a semi-perimeter of 16 cm.

Statement R (Reason): The semi-perimeter of any triangle is half the sum of all three sides.

(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.20 Statement A (Assertion): $3^{\frac{5}{2}} \times 3^{\frac{1}{2}} = 27$

Statement R (Reason): For any positive real number 'a' and rational numbers p and q, we have $a^p \times a^q = a^{p+q}$.

(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.

Section B

S.A. (2 mark each)

Q.21. a) Show that $0.3\overline{12}$ can be expressed in the form $\frac{p}{q}$, where p and q are integers and q ≠ 0.

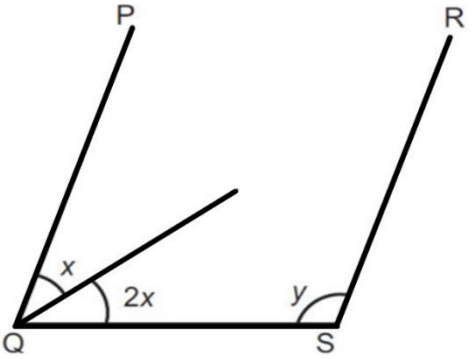
OR

b) Simplify by rationalising the denominator: $\frac{2\sqrt{7}+\sqrt{2}}{\sqrt{7}-\sqrt{2}}$

Q.22. The point $P(a, a-2)$ lies in the first quadrant and the point does not lie on any of the axis. Another point $W(k, 2k-8)$ is such that k is equal to the least possible integer value of a. In which quadrant does the point W lie?

Q.23. An equilateral triangular piece of fabric for a banner has an area of $144\sqrt{3}\ cm^2$. Find the perimeter of the fabric.

Q.24. In the given figure, PQ || RS, and x : y = 2 : 3, then find the value of y.



Q.25. a) Out of three line segments PQ, RS and MN, if PQ = MN and RS = MN, then what is the relation between PQ and RS? State the axiom used here.

OR

b) Solve the equation $x + 12 = 27$ and state the axiom used here.

Section C

S.A. (3 mark each)

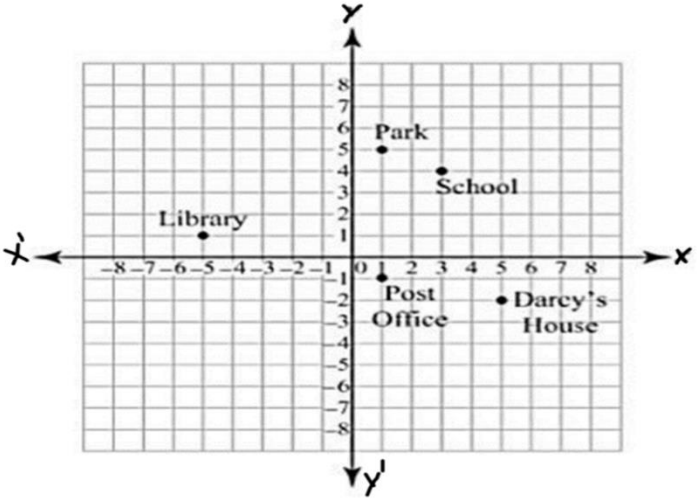
Q.26. Darcy has drawn a coordinate map of her neighborhood showing various important places around her area. She has marked all the places she frequently visits, including her own house.

Observe the given figure and answer the following questions:

i. Name the locations identified by the coordinates (1,-1) and (3,4).

ii. Find the sum of the ordinate of Darcy's House and the abscissa of Park.

iii. Name the quadrants in which the School and Library are located.



Q.27. a) The following table shows the average daily earnings of 40 general stores in a market, during a certain week:

Daily earning (in rupees)	600-700	700-800	800-900	800-900	900-1000
No. of stores	6	9	5	8	12

Draw a histogram to represent the above data.

OR

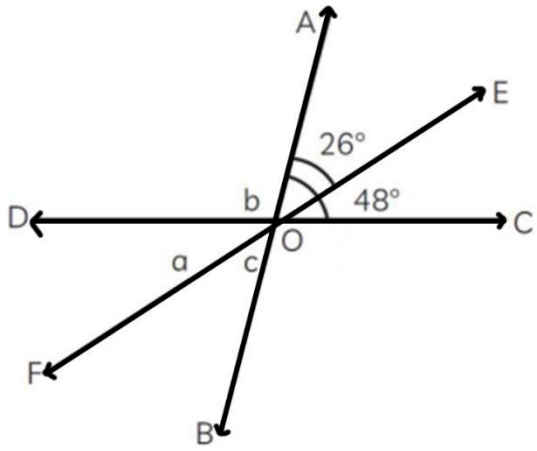
b) Draw a frequency polygon to represent the following data:

Class interval	20-30	30-40	40-50	50-60	60-70
Frequency	2	5	12	19	9

Q.28. State any three Euclid's postulates.

Q.29. Represent $\sqrt{5.6}$ on number line.

Q.30. In the adjoining figure, lines AB, CD, EF intersects at O. If $\angle AOC = 48°$ and $\angle AOE = 26°$, then find the value of a, b, c. Give reasons.



Q.31. a) The perimeter of a triangular traffic sign is 360 cm and its sides are in the ratio 3: 4: 5. Find the area of the triangular traffic sign.

OR

b) A triangular roof tile has sides measuring 21 cm, 28 cm and 35 cm. Find the cost of painting 500 such tiles at the rate of ₹0.75 per square centimeter.

Section D

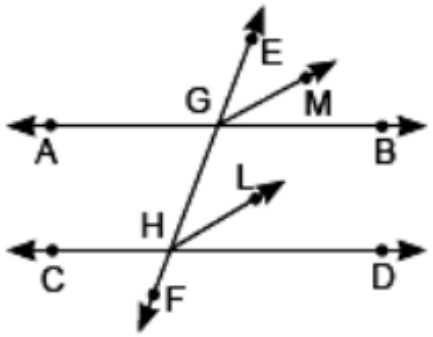
L.A.(5 mark each)

Q. 32. A stage is designed in the shape of an isosceles triangle where one side is 10 m longer than each of the equal sides.

(i) If the perimeter of the stage is 100 m, then find the area of the stage.

(ii) Also, the stage is to be decorated with lights placed evenly around its perimeter. If each light is placed 5 meters apart, find how many lights are needed to decorate the stage.

Q. 33. In the given figure, EF is the transversal to two parallel lines AB and CD. GM and HL are the bisectors of the corresponding angles EGB and EHD. Prove that GM || HL.



Q.34. Plot the points A(2,3), B(4,5), C(6,5), D(8,3), E(7,1), and F(3,1) on graph paper and answer the following questions:

i. Name the type of polygon obtained on joining the points in order.

ii. Find the perpendicular distance of point B from the x-axis.

Q.35. a) Prove that two triangles are congruent if two angles and the included side of one triangle are equal to two angles and the included side of other triangle.

OR

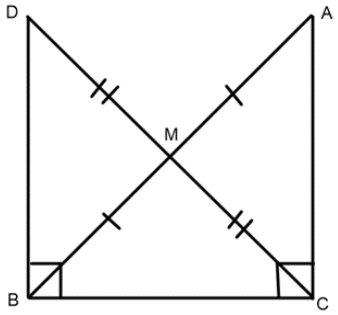
b) $\Delta ABC \text{ and } \Delta DBC$ are two right triangles on the same base BC, right angled at C and B respectively. M is the mid-point of hypotenuse AB and DM = CM. Show that:

(i) $\Delta AMC \cong \Delta BMD.$

(ii) $\angle ACM = \angle BDM.$

(iii) $\Delta DBC \cong \Delta ACB.$

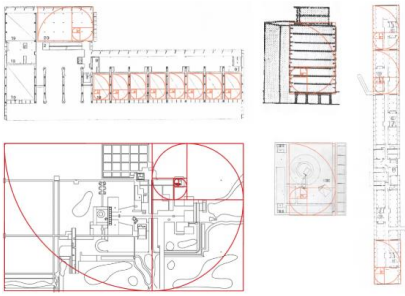
(iv) $AB = DC.$



Section E

CASE STUDY BASED QUESTIONS (4 mark each)

Q.36. The golden ratio φ (phi) is an irrational number that appears frequently in art and architecture. The exact value is $\varphi = \frac{1+\sqrt{5}}{2}$. In ancient Greek architecture, rectangles with sides in the golden ratio were considered most pleasing to the eye. If a rectangle has width 'w' and length 'l' such that $\frac{l}{w} = \varphi$, it's called a golden rectangle.



Based on the above information answer the following questions :

i. a) A famous architect is designing a building facade using golden rectangles. The width of the main section is $(3 + \sqrt{5})$ meters. Find the length of the rectangle.
(Hint: $\frac{l}{w} = \varphi$)

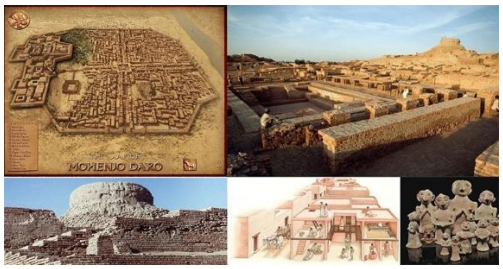
OR (2m)

b) If $x = \sqrt{13} - 2\sqrt{3}$, then what is the value of $x + \frac{1}{x}$.

ii. Determine the type of decimal expansion of the golden ratio φ (phi). (1m)

iii. Write any three irrational numbers in between 0.1 and 0.15 (1m)

Q.37. A national science museum is creating an interactive exhibition called "Journey Through Ancient Geometry" to showcase how different civilizations contributed to mathematical knowledge. The museum curators are researching how civilizations like Egypt used geometry for land measurement, how the Indus Valley people created highly planned cities with standardized building materials, and how Greek mathematicians like Euclid systematically organized geometric knowledge into logical frameworks.

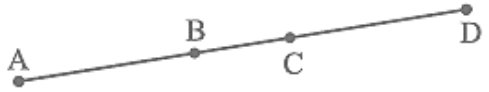


Based on the above information, answer the following questions:

i. The Egyptians had to redraw field boundaries after floods. Which of Euclid's postulates would be most relevant for joining two boundary points with a straight line? State the postulate. (1m)

ii. Two boxes contain equal amounts of grain. After removing half a kilogram from each box, the two boxes still have the same amount of grain. Which axiom does this situation demonstrate? (1m)

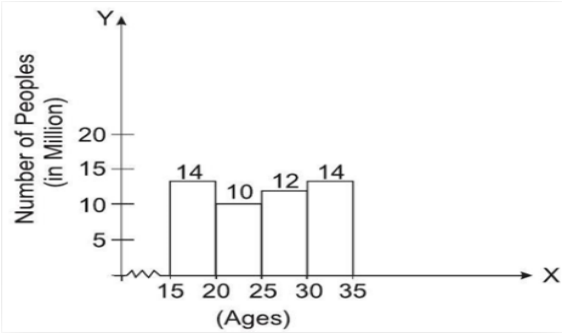
iii. a) In the given figure, if AC = BD, then prove that AB = CD.



OR (2m)

b) State any two Euclid's axioms.

Q.38. India began its vaccination programme on 16th January 2021. Within one year, a massive population was vaccinated — 80% of adults (above 18 years) received the double dose, and 70% of children in the age group 15 to 18 years received the first dose. This was all possible in short span of time due to combine efforts of governments and the citizens. The data collected by the government of vaccinated population is represented below using a histogram.



Use the above information, to answer the following questions:

i. In which age group does the minimum number of vaccinated people fall and how many? (1m)

ii. a) What is the difference between the upper limit of the class interval 25–30 and the lower limit of the class interval 20–25?

OR (2m)

b) Find the class marks of the age group having maximum number of vaccinated people.

iii. Calculate the total number of vaccinated people between the age of 15 years and 35 years. (1m)

ANSWERS							
Q.1	B	**Q.2**	A	**Q.3**	C	**Q.4**	A
Q.5	B	**Q.6**	D	**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**	A
Q.21	**a)** $\frac{103}{330}$ **b)** $\frac{16+3\sqrt{14}}{5}$	**Q.22**	W= (3,-2) IV Quadrant	**Q.23**	P= 72 cm	**Q.24**	$y = 60°$
Q.25	**a)** PQ = RS, First Axiom **b)** $x = 15$, Third Axiom	**Q.26**	**i)** Post Office, School **ii)** -2 + 1 = -1 **iii)** I quadrant, II quadrant	**Q.30**	$c = 26°$, $a = 22°$ (Vertically opposite) $b = 132°$ (Linear pair)	**Q.31**	**a)** 5400 cm^2 **b)** Total area =147000 cm^2 Cost = ₹110,250
Q.32	$i)\ area = 200\sqrt{5}\ sq.m$ **ii)** 20 lights	**Q.34**	**i)** Hexagon **ii)** 5 units	**Q.36**	**i)** a) $l = 4 + 2\sqrt{5}$ b) $2\sqrt{13}$ **ii)** Non terminating Non repeating **iii)** Any 3	**Q.37**	**(i)** A straight line may be drawn from any one point to any other point **(ii)** Seventh axiom
Q.38	**i)** 20-25, 10 million **ii) a) 30-20 =10** b) 17.5, 32.5 **(iii)** 14+10+12+14=50 million						

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