ANNUAL EXAMINATION

Question Paper 2024

NCERT BASED SYLLABUS

FOR CBSE AND STATE BOARD
FOLLOWING NCERT

SESSION ENDING EXAMINATION 2023-2024

CLASS-VIII

SUBJECT-MATHEMATICS

Maximum Marks: 60 **Time: 2 Hrs. 30 min**

GENERAL INSTRUCTIONS:

1. This question paper has four sections A, B, C, and D.
2. Section A has 15 Multiple Choice Questions carrying 1 mark each.
3. Section B has 5 questions carrying 2 mark each.
4. Section C has 5 questions carrying 3 marks each.
5. Section D has 5 questions carrying 4 marks each.
6. Internal choices are provided in 2 questions of Section B, 2 questions of Section C and 1 question of Section D.
7. All questions are compulsory.

SECTION – A $(1\times15 = 15)$

Q.1 What is the highest power of variable in a linear equation? 1

a) 0 b) 1 c) 2 d) 3

Q.2 Which of the following triplets are pythagorean? 1

a) 3, 4, 5 b) 6, 8, 12 c) 1, 4, 6 d) 7, 8, 9

Q.3 The value of $\sqrt{5+\sqrt{11+\sqrt{18+\sqrt{49}}}}$ is 1

a) 3 b) 4 c) 5 d) 6

Q.4 The smallest number by which 9408 must be divided so that it becomes a perfect square is 1

a) 2 b) 3 c) 4 d) 5

Q.5 Add $ab-bc,\ bc-ca,\ ca-ab$. 1

a) abc b) $a+b+c$ c) 0 d) $ab+bc+ca$

Q.6 Area of a rectangle with length $4ab$ and breadth $6b^2$ is 1

a) $24a^2b^2$ b) $24ab^3$ c) $24ab^2$ d) $24ab$

Q.7 The side of a cube whose surface area is 600 cm^2 is 1

a) 100 b) 10 c) 20 d) 60

Q.8 The diagonals of rhombus are 24 cm and 10 cm respectively. The perimeter of the rhombus is 1

a) 68 cm b) 60 cm c) 52 cm d) 50 cm

Q.9 Find the value of $(3^{-1}+4^{-1}+5^{-1})^0$ 1

a) 0 b) 1 c) 12 d) 2

Q.10 The value of $\left(\frac{125}{27}\right)^{-\frac{1}{3}}$ is 1

a) $\frac{1}{3}$ b) $\frac{5}{3}$ c) $\frac{3}{5}$ d) $\frac{2}{3}$

Q.11 Which of the following are in inverse proportion? 1

a) Speed and distance covered b) Speed and time taken

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c) Distance covered and time taken d) None of these

Q.12 Find the value of $66pq^2r^3 \div 11qr^2$. 1

a) $6pqr$ b) $6p^2qr^2$ c) $6pq^2r$ d) $6pq^2r^2$

Q.13 Find the common factor of $14pq,\ 28p^2q^2$. 1

a) $28pq$ b) $28p^2q^2$ c) $14pq$ d) $14p^2q^2$

Q.14 A point which lies on both the axis is 1

a) (0,0) b) (0, 1) c) (1, 0) d) (1, 1)

Q.15 The coordinates of point at a distance of 3 units from the x-axis and 6 units from the y-axis is 1

a) (0, 3) b) (6, 0) c) (3, 6) d) (6, 3)

SECTION – B $(2\times5 = 10)$

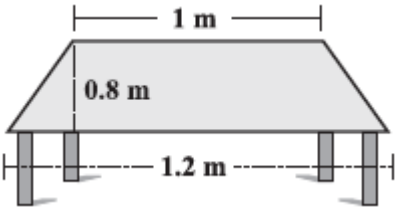
Q.16 Solve $5x + 9 = 5 + 3x$ 2

Q.17 Find the square root of the decimal number 51.84 by division method. 2

OR

Find the square root of 4624 by prime factorisation method.

Q.18 The shape of the top surface of a table is a trapezium. Find its area if its parallel sides are 1 m and 1.2 m and perpendicular distance between them is 0.8 m. 2



OR

The diagonals of a rhombus are 7.5 cm and 12 cm. Find its area.

Q.19 Express 1425.36 in expanded form. 2

Q.20 Find the value of m for which $5^m \div 5^{-3} = 5^5$ 2

SECTION – C $(3\times5 = 15)$

Q.21 Solve the given linear equation and check your result: 3

$8x + 4 = 3(x - 1) + 7$

Q.22 A group of 360 people were asked to vote for their favourite season from the three seasons rainy, winter and summer 3

(i) Which season got the most votes?

(ii) Find the central angle of each sector.

(iii) Draw a pie chart to show this information.

Season	No. of votes
Summer	90
Rainy	120
Winter	150

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Q.23 Subtract: $3l\,(l - 4m + 5n)\ from\ 4l\,(10n - 3m + 2l)$ 3

OR

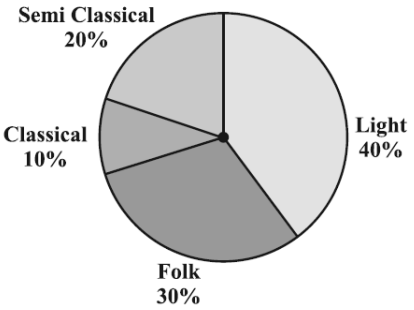
Simplify $3x(4x - 5) + 3$ and find its values for $x = 3$

Q.24 The internal measures of a cuboidal room are 12 m × 8 m × 4 m. Find the total cost of whitewashing all four walls of a room, if the cost of white washing is Rs 5 per m^2. What will be the cost of white washing if the ceiling of the room is also whitewashed. 3

Q.25 A train is moving at a uniform speed of 75 km/hour. 3
(i) How far will it travel in 20 minutes?
(ii) Find the time required to cover a distance of 250 km.

SECTION – D $(4 \times 5 = 20)$

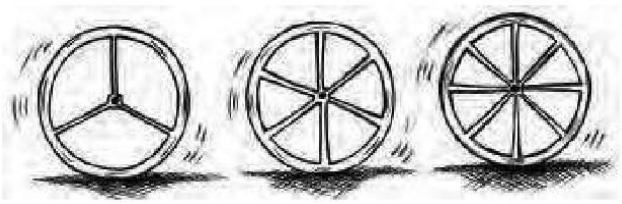
Q.26 A survey was made to find the type of music that a certain group of young people liked in a city. Adjoining pie chart shows the findings of this survey. From this pie chart answer the following: 4



(i) Which type of music is liked by the maximum number of people?
(ii) Which type of music is liked by least number of people?
(iii) If 20 people liked classical music, how many young people were surveyed?
(iv) If a cassette company were to make 1000 Music CD's, how many of folk type would they make?

Q.27 Factorize: 4
(i) $p^4 - 81$
(ii) $p^2 + 6p + 8$

Q. 28 Rehman is making a wheel using spokes. He wants to fix equal spokes in such a way that the angles between any pair of consecutive spokes are equal. Help him by completing the following table. 4



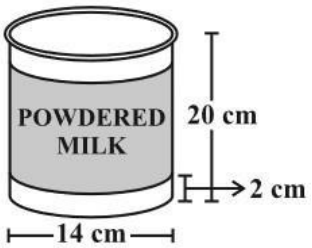
Number of spokes	4	6	8		12	
Angle between a pair of consecutive spokes	90^0	60^0		36^0		24^0

Q. 29 4

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A company packages its milk powder in cylindrical container whose base has a diameter of 14 cm and height 20 cm. Company places a label around the surface of the container. If the label is placed 2 cm from top and bottom, what is the area of the label.



Q.30 Draw a graph for the following: 4

Side of square (cm)	2	3	4	5	6
Area (sq cm)	4	9	16	25	36

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CLASS-VIII SUBJECT-MATHEMATICS

MARKING SCHEME

Time Allowed: 2Hrs. 30 Mins. Maximum Marks: 60

Q.No.		Marks
Q.1	b) 1	1
Q.2	a) 3, 4, 5	1
Q.3	b) 3	1
Q.4	b) 3	1
Q.5	c) 0	1
Q.6	b) $24ab^3$	1
Q.7	d) 10 cm	1
Q.8	c) 52 cm	1
Q.9	b) 1	1
Q.10	c) $\frac{3}{5}$	1
Q.11	b) Speed and time taken	1
Q.12	a) $6pqr$	1
Q.13	c) $14pq$	1
Q.14	a) (0,0)	1
Q.15	d) (6, 3)	1
Q.16	$5x - 3x = 5 - 9$ $x = -2$	1 1
Q.17	square root of the decimal number 51.84 = 7.2 OR Prime Factorisation = $2 \times 2 \times 2 \times 2 \times 17 \times 17$ Square root = $2 \times 2 \times 17 = 68$	2 1 1

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Q.18	Area = 0.88 m^2 OR Area of rhombus = 45.0 cm^2	2
Q.19	Expanded Form = $1 \times 1000 + 4 \times 100 + 2 \times 10 + 5 \times 1 + 3 \times \frac{1}{10} + 6 \times \frac{1}{100}$	2
Q.20	$5^m \div 5^{-3} = 5^5$ $5^{m-(-3)} = 5^5$ $5^{m+3} = 5^5$ $m + 3 = 5$ $m = 2$	 ½ ½ ½ ½
Q.21	$8x + 4 = 3(x - 1) + 7;\ 8x + 4 = 3x - 3 + 7; 8x - 3x = 0; x = 0$ For Checking:	2 1
Q.22	(i) Winter (ii) Winter - 150°, Rainy - 120°, Summer - 90°. (iii)  	1 1 1
Q.23	$3l\ (l - 4\,m + 5\,n)$ from $4l\ (10\,n - 3\,m + 2\,l)$ $(40ln - 12lm + 8l^2) - (3l^2 - 12lm + 15ln)$ $40ln - 12lm + 8l^2 - 3l^2 + 12lm - 15ln$ $25ln + 5l^2$ OR $12x^2 - 15x + 3$ values for $x = 3$ is 66	 1 1 1 2 1
Q.24	Area of the four walls of the room = Perimeter of the base × Height of the room = 2 (l + b) × h = 2 (12 + 8) × 4 = 2 × 20 × 4 = 160 m^2 total cost of white washing = Rs1280	 2 1
Q.25	The train will cover a distance of 25 km in 20 minutes. 200 minutes or 3 hours 20 minutes will be required to cover a distance of 250 kilometres.	1½ 1½

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<table>
<tr><td>Q.26</td><td>(i) Light
(ii) Classical
(iii) 200
(iv) 300</td><td>1
1
1
1</td></tr>
<tr><td>Q.27</td><td>(i) $p^4 - 81 = (p^2)^2 - (3^2)^2$
$(p^2 + 3^2)(p^2 - 3^2) = (p^2 + 3^2)(p + 3)(p - 3)$
(ii) $p^2 + 6p + 8 = (p + 2)(p + 4)$ =</td><td>2
2</td></tr>
<tr><td>Q. 28</td><td><table>
<tr><td>Number of spokes</td><td>4</td><td>6</td><td>8</td><td>10</td><td>12</td><td>15</td></tr>
<tr><td>Angle between a pair of consecutive spokes</td><td>90^0</td><td>60^0</td><td>45^0</td><td>36^0</td><td>30^0</td><td>24^0</td></tr>
</table></td><td></td></tr>
<tr><td>Q. 29</td><td>Diameter of cylindrical container = 14 cm
Radius of cylindrical container r =7 cm
Height of cylindrical container = 20 cm
Height of the label h = 20 - 2 - 2 = 16 cm
Curved surface area of label = $2\pi rh = 2\times 22/7\times 7\times 16 = 704$ cm^2
Hence the area of the label of 704 cm^2</td><td>1
2
1</td></tr>
<tr><td>Q.30</td><td>For correct graph</td><td>4</td></tr>
</table>

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