

SPECTRA SAMPLE PAPER
SPECTRA CLASSES
CLASS 8TH
SUBJECT- MATHEMATICS

TIME-2 $\frac{1}{2}$ HR.

MM:60

General Instruction:

1. This question paper consists of 16 questions. All questions are compulsory.
2. Question paper is divided into FIVE sections- Section A, B, C, D and E.
3. In section A – question number 1 have multiple choice questions (MCQs) of 1 mark each.
4. In section B – question number 2 to 7 are Objective type questions of 2 mark each.
5. In section C – question number 8 to 10 are Short Answer (SA) type questions of 3 mark each.
6. In section D – question number 11 to 13 are Long Answer (LA) type questions of 5 mark each.
7. In section E – question number 14 to 16 are source based/case study questions carrying 4 marks each. Internal choice is provided in 2 marks question in each source based/case study question.
8. There is no overall choice. However, an internal choice has been provided in 1 question in Section B, 1 question in Section C and 2 questions in Section D.
9. Draw neat figures wherever required. Take $\pi = \frac{22}{7}$ wherever required if not stated. Use of calculators is NOT allowed.

SECTION-A		
Question 1 consists of Multiple Choice questions (i-xii) of 1 mark each.		
Q. No		Mark
1. (i)	A rational number can be represented in the form of: A. $\frac{p}{q}$ B. pq C. $p+q$ D. $p-q$	1
(ii)	The solution of $2x-3=7$ is: A. 5 B. 7 C. 12 D. 11	1
(iii)	Which of the following is not a quadrilateral? A. Square B. Rectangle C. Triangle D. Parallelogram	1
(iv)	If $\angle A$ and $\angle B$ are two adjacent angles of a parallelogram. If $\angle A = 70^\circ$, then $\angle B = ?$ A. 70° B. 90° C. 110° D. 180°	1
(v)	To construct a quadrilateral, we need to know two diagonals and ____ sides. A. One B. Two C. Three D. All four sides	1
(vi)	The sum of $1 + 3 + 5 + 7 + 9 + 11 + 13 + 15 + 17 + 19$ is: A. 121 B. 120 C. 100 D. 110	1
(vii)	Which of the following is not a perfect cube? A. 216 B. 1000 C. 243 D. 1331	1
(viii)	The percentage of 2:5	1

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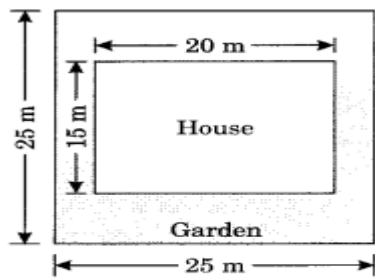
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	A. 20% C. 60%	B. 50% D. 40%	
(ix)	In which of the following, the two expressions are like terms? A. $7x$ and $7y$ C. $7x$ and $7x^2$		1
	B. $7x$ and $9x$ D. $7x$ and $7xy$		
(x)	Volume of a cylinder with base radius = r and height = h , is: A. $2\pi rh$ C. $2\pi r(r+h)$		1
	B. $\pi r^2 h$ D. $\frac{1}{3}\pi r^2 h$		
(xi)	If the weight of 12 sheets of thick paper is 40 grams, how many sheets of the same paper would weigh 2500 grams? A. 750 C. 850		1
	B. 800 D. 950		
(xii)	On factorising $14pq + 35pqr$, we get: A. $pq(14+35r)$ C. $q(14p+35pr)$		1
	B. $p(14q+35qr)$ D. $7pq(2+5r)$		
SECTION-B			
Question 2 to 7 are Objective type questions of 2 mark each.			
2	Sum of two numbers is 95. If one exceeds the other number 15, find the numbers?		2
3	State whether True or False. (a) All rectangles are squares. (b) All rhombuses are parallelograms.		2
4	Verify that $-(-x) = x$ for (i) $x = 11/15$ (ii) $x = -13/17$		2
5	Factorise the following expressions. (i) $-4a^2 + 4ab - 4ca$ (ii) $x^2yz + xy^2z + xyz^2$		2
6	A machine in a soft drink factory fills 840 bottles in six hours. How many bottles will it fill in five hours?		2
7	72% of 25 students are good in mathematics. How many are not good in mathematics?		2
SECTION- C			
Question 8 to 10 are Short Answer (SA) type questions of 3 mark each.			
8	Mrs Kaushik has a square plot with the measurement as shown in the figure. She wants to construct a house in the middle of the plot. A garden is developed around the house. Find the total cost of developing a garden around the house at the rate of ₹ 55 per m ² .		3

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OR

Archana bought medicines from a medical store as prescribed by her doctor for Rs. 36.40 including 4% VAT. Find the price before VAT was added.

	<p style="text-align: center;">OR</p> <p>Archana bought medicines from a medical store as prescribed by her doctor for Rs. 36.40 including 4% VAT. Find the price before VAT was added.</p>															
<p style="text-align: center;">9</p>	<p>If 60% of people in a city like a cricket, 30% like football and the remaining like other games, then what per cent of the people like other games? If the total number of people are 50 lakh, find the exact number who like each type of game.</p>	<p style="text-align: center;">3</p>														
<p style="text-align: center;">10</p>	<p>The number of hours for which students of a particular class watched television during holidays is shown through the given graph.</p> <p>Answer the following questions.</p> <p>(i) For how many hours did the maximum number of students watch TV?</p> <p>(ii) How many students watched TV for less than 4 hours?</p> <p>(iii) How many students spent more than 5 hours watching TV?</p> <div style="text-align: center;"> <table border="1" style="margin: 10px auto;"> <caption>Data from Bar Graph</caption> <thead> <tr> <th>Hours of TV watched per day</th> <th>No. of students</th> </tr> </thead> <tbody> <tr><td>1</td><td>4</td></tr> <tr><td>2</td><td>8</td></tr> <tr><td>3</td><td>22</td></tr> <tr><td>4</td><td>32</td></tr> <tr><td>5</td><td>8</td></tr> <tr><td>6</td><td>6</td></tr> </tbody> </table> </div> <p style="text-align: center;">OR</p> <p>Three numbers are in the ratio 2 : 3 : 4 . the sum of their cubes is 0.334125. Find the numbers.</p>	Hours of TV watched per day	No. of students	1	4	2	8	3	22	4	32	5	8	6	6	<p style="text-align: center;">3</p>
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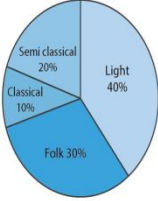
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SECTION-D		
Question 11 to 13 are Long Answer (LA) type questions of 5 mark each.		
11	<p>(a) Subtract the following:</p> <p>(i) Subtract $4a - 7ab + 3b + 12$ from $12a - 9ab + 5b - 3$</p> <p>(ii) Subtract $4p^2q - 3pq + 5pq^2 - 8p + 7q - 10$ from $18 - 3p - 11q + 5pq - 2pq^2 + 5p^2q$</p> <p>(b) Add the following:</p> <p>(i) $2p^2q^2 - 3pq + 4$, $5 + 7pq - 3p^2q^2$</p> <p>(ii) $l^2 + m^2$, $m^2 + n^2$, $n^2 + l^2$, $2lm + 2mn + 2nl$</p>	$[2\frac{1}{2} + 2\frac{1}{2}]$
12	<p>(i) The measures of two adjacent angles of a parallelogram are in the ratio 3 : 2. Find the measure of each of the angles of the parallelogram.</p> <p>(ii) Two adjacent angles of a parallelogram have equal measure. Find the measure of each of the angles of the parallelogram.</p>	5
13	<p>(i) In a stack there are 5 books each of thickness 20 mm and 5 paper sheets each of thickness 0.016 mm. What is the total thickness of the stack?</p> <p>(ii) Express the following numbers in standard form:</p> <p>(a) 0.00000000000085</p> <p>(b) 0.000000000000942</p> <p>(c) 6020000000000000</p> <p>(d) 0.00000000837</p>	$[3+2=5]$
SECTION-E		
14 to 16 are Long Answer (LA) type questions of 4 mark each.		
14	<p>A survey was made to find the type of music that a certain group of young people liked in a city. The adjoining pie chart shows the findings of this survey. From this pie chart, answer the following:</p> <p>(i) If 20 people liked classical music, how many young people were surveyed?</p> <p>(ii) Which type of music is liked by the maximum number of people?</p> <p>(iii) If a cassette company were to make 1000 CD's, how many of each type would they make?</p>	4

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15	Sarita borrowed Rs. 18000 from Vimla at 3% per annum simple interest for 2 years. If she had borrowed this sum at 3% per annum compound interest, what extra amount would she have to pay?	4
16	In a cylindrical dome there are 16 pillars. The radius of each pillar is 35 cm and height is 7 m. Find the total cost of painting the curved surface area of all pillars at the rate of Rs. 8.50 per.	4

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