SPECTRA CLASSES

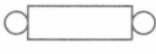## PRACTICE PAPER CLASS 8TH (2024-25)

MATHEMATICS

Time Allowed : $2\frac{1}{2}$ hr.   **Maximum Marks :** 60
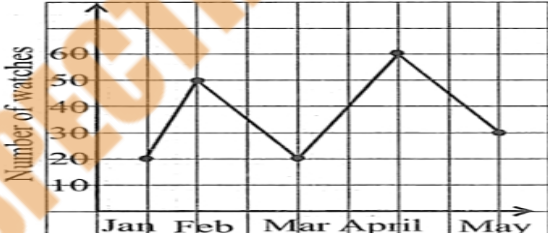
General Instructions:

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 4 mark each.
7. In section E - question number 14 to 16 are source based/case study questions carrying 5 marks each. Internal choice is provided in 2 arks question in each source based/case study question.
8. Draw neat figures wherever required. Take π= $\frac{22}{7}$ wherever required if not stated. Useo f calculators is NOT allowed.

	Section A	
1 {I}	Product of $6a^2 - 7b + 5ab$ and $2ab$ is a) $12a^3b - 14ab^2 + 10ab$ b) $12a^2b - 7ab^2 + 10ab$ c) $6a^2 - 7b + 7ab$ d) $12a^3b - 14ab^2 + 10a^2b^2$	**[1]**
{ii}	Which of the following is the net of a cylinder? a) b) c) d)	**[1]**
{iii}	What is the surface area of the drawing box, if its length is 16 cm, width 6 cm, and height 3 cm? a) $162cm^2$ b) $25cm^2$ c) $200cm^2$ d) $324cm^2$	**[1]**

{iv}	The value of $\frac{2^{2001}+2^{1999}}{2^{2000}-2^{1998}}$ is _____. a) 10 b) 2 c) $\frac{10}{3}$ d) $2^{1000}+1$	**[1]**
{v}	If x be any non - zero integer, then x^{-1} is equal to a) - x b) $\frac{1}{x}$ c) x d) $\frac{-1}{x}$	**[1]**
{vi}	175 men can dig a canal 3150 m long in 36 days. How many men are required to dig a canal 3900 m long in 24 days? a) 384 b) 325 c) 256 d) 225	**[1]**
{vii}	Which of the following is in direct proportion? a) One side of a cuboid and its volume. b) Number of pipes to fill a tank and the time required to fill the same tank. c) Speed of a vehicle and the distance travelled in a fixed time interval. d) Change in weight and height among individuals.	**[1]**
{viii}	The common factor of $72x^3 y^4 z^4$, $120z^2 d^4 x^4$ and $96y^3 z^4 d^4$ is a) $24z^2$ b) $72z^3$ c) $120z^3$ d) $96z^3$	**[1]**
{ix}	$9m^2 + 12mn + 4n^2$ is same as a) $(3m + 2n)^2$ b) $(3m - 2n)^2$ c) $(3m - 2n)$ d) $(3m + 2n)$	**[1]**
{x}	The line graph shows the sale of watches in a company. How many watches were sold in those 5 months? a) 175 b) 180 c) 160 d) 170	**[1]**
{xi}	If (–3)m+1 × (–3)5 = (–3)7, then the value of m is: A. 5 B. 7 C. 1 D. 3	**[1]**

{xii}	The factorisation of 5x – 20 is: A. 5(x-5) B. 5(x-4) C. 5(x-3) D. 5(x-20)	**[1]**
	Section B	
2.	Simplify 3x (4x – 5) + 3 and find its values for x = 3	**[2]**
3.	In a town, an ice - cream parlour has displayed an ice - cream sculpture of height 360 cm. The parlour claims that these ice - creams and the sculpture are in the scale 1:30. What is the height of the ice - creams served?	**[2]**
4.	Metallic discs of radius 0.75 cm and thickness 0.2 cm are melted to obtain 508.68 cm^3 of metal. Find the number of discs to be melted. (use π = 3.14)	**[2]**
5.	Find the value of x so that $(-5)^{x+1} \times (-5)^5 = (-5)^7$	**[2]**
6.	If x and y vary inversely as each other, and x=10 when y=6. Find y when x=15.	**[2]**
7.	Factorise theexpression: $x^2\, yz + xy^2\, z + xyz^2$	**[2]**
	Section C	
8.	Work out the division: 96abc (3a – 12) (5b – 30)÷ 144 (a – 4) (b – 6)	**[3]**
9.	Daniel is painting the walls and ceiling of a cuboidal hall with length, breadth and height of 15 m, 10 m and 7 m respectively. From each can of paint 100 m^2 of area is painted. How many cans of paint will she need to paint the room?	**[3]**
10.	Plot a line graph for the variables p and q, where p is two times q i.e. the equation is p = 2q. Then, find 1. the value of p when q = 3. 2. the value of q when p = 8.	**[3]**
	Section D	
11.	In a building there are 24 cylindrical pillars each having a radius of 28cm and height of 4m. Find the cost of painting the curved surface area of all the pillars at the rate of Rs.8 per m^2 .	**[4]**
12.	Simplify : $\frac{25 \times t^{-4}}{5^{-3} \times 10 \times t^{-8}}\,(t \neq 0)$	**[4]**
13.	The adjacent sides of a rectangle are $x^2 - 4xy + 7y^2$ and $x^3 - 5xy^2$. Find the area.	**[4]**
	Section E	

14.	**Read the text carefully and answer the questions:** The diameter of the Sun is 1.4×10^9 m and the diameter of the Earth is 1.2756×10^7 m.	**[5]**

Suppose you want to compare the diameter of the Earth, with the diameter of the Sun.

Diameter of the Sun = 1.4×10^9 m

Diameter of the earth = 1.2756×10^7 m

Therefore

$$\frac{(1.4 \times 10^9)}{(1.2756 \times 10^7)}$$

$= \frac{1.4}{1.2756} \times 10^{9-7}$

$= \frac{1.4 \times 10^2}{1.2756}$

which is approximately 100

So, the diameter of the Sun is about 100 times the diameter of the earth.

Let us compare the size of a Red Blood cell which is 0.000007 m to that of a plant cell which is 0.00001275 m.

Size of Red Blood cell = 0.000007 m = 7×10^{-6} m

Size of plant cell = 0.00001275 = 1.275×10^{-5} m

Therefore, $\frac{(7 \times 10^{-6})}{(1.275 \times 10^{-5})}$

$= \frac{7}{1.275} \times 10^{-6+5}$

$= \frac{7 \times 10^{-1}}{1.275}$

$= \frac{0.7}{1.2} \approx \frac{1}{2}$

So a red blood cell is half of plant cell in size.

1. What is the standard form. of 0.000035?

   a) 35×10^5

   b) 3.5×10^5

   c) 3.5×10^{-4}

d) 3.5×10^{-5}

2. What is the usual form of 6.35×10^5 ?

   a) 0.00635

   b) 635

   c) 635000

   d) 63500000

3. Size of a bacteria is 0.0000005 m. What is this size in the standard form?

   a) $5 \times 10^6 m$

   b) $5 \times 10^{-6} m$

   c) $5 \times 10^7 m$

   d) $5 \times 10^{-7} m$

4. Sum of mass of earth and moon = 5.97×11^{24} kg + 7.35×110^{22} kg = _____ $\times 10^{22}$ kg

5. 3.61492×10^6 m = 361492 m

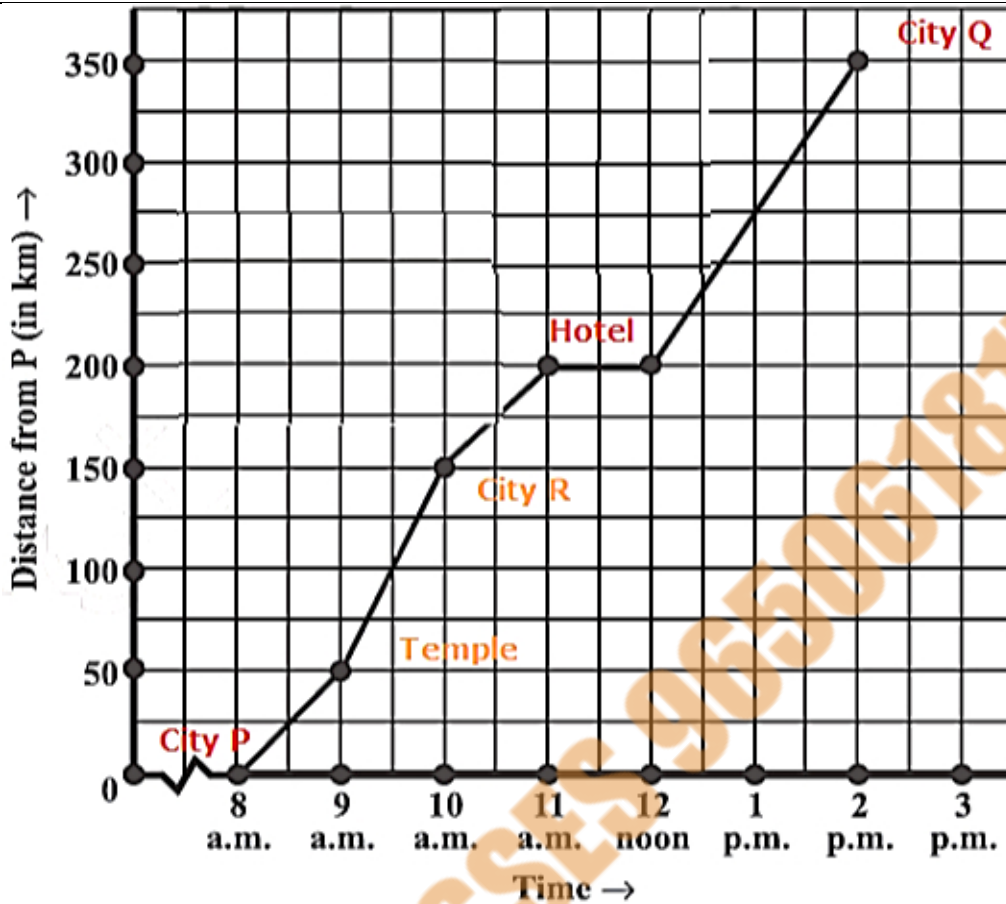| 15. | **Read the text carefully and answer the questions:** The definition of **inverse proportion** states that "Two quantities are said to be in inverse proportion if an increase in one leads to a decrease in the other quantity and a decrease in one leads to an increase in the other quantity".

 Let us take one example: Zaheeda can go to her school in four different ways. She can walk, run, cycle or go by car. Study the following table

  | [5] |

Here as the speed of Zaheeda increases the time taken is decreased so speed and time are in inverse proportion to each other.

1. In 1 hr = 60 min, Zaheeda can walk how many km?

   a) 10

   b) 6

   c) 4

   d) 3

2. If cycling speed of Zaheeda were 10 km/hr, How many minutes will she take to reach the school.

   a) 9

   b) 5

   c) 6

   d) 10

3. If Zaheeda reached school by car in 3 minutes, What was the speed of the car?

   a) 35 km/hr

   b) 30 km/hr

   c) 40 km/hr

   d) 45 km/hr

4. The distance of school from house of Zaheeda = _____ km.

5. **The** distance traveled by Zaheeda with cycling was 1.25 km.

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16 | **Read the text carefully and answer the questions:** Deepak travelled by car from his city P to other city Q. His journey has been plotted in the following graph. | **[5]**

Deepak startedat 8 am from P. At 9 am he crossed through a temple but he did not stop there. At 10 AM.He reached at another city R. Now he felt tired and hungry so his eyes were looking for a hotel. After driving for 1 hr he saw a hotel at road side. He decided to stop at hotel for lunch and relaxing .Total time spent at hotel was 1 hr.At 12 pm Deepak again started for city Q. Finally he reached city Q at 2 PM.

1. How far did the car go during the 2nd hour?

   a) 75 km

   b) 100 km

   c) 150 km

   d) 50 km

2. For which period Deepak stopped at hotel?

   a) 10 am to 11 am

   b) 12 pm to 1 pm

c) 11 am to 12 pm

d) 9 am to 10 am

3. What was the speed of car from Hotel to city Q?

a) 40 km/hr

b) 75 km/hr

c) 50 km/hr

d) 100 km/hr

4. The average speed from city P to Q was _____ km/hr.

5. From temple to city R the speed of car was 100 km/hr.