

CLASS: VIII

MID TERM EXAMINATION (SESSION: 2025– 26)

SUBJECT: MATHEMATICS

SET B2

Time Allowed: 2.5 Hours

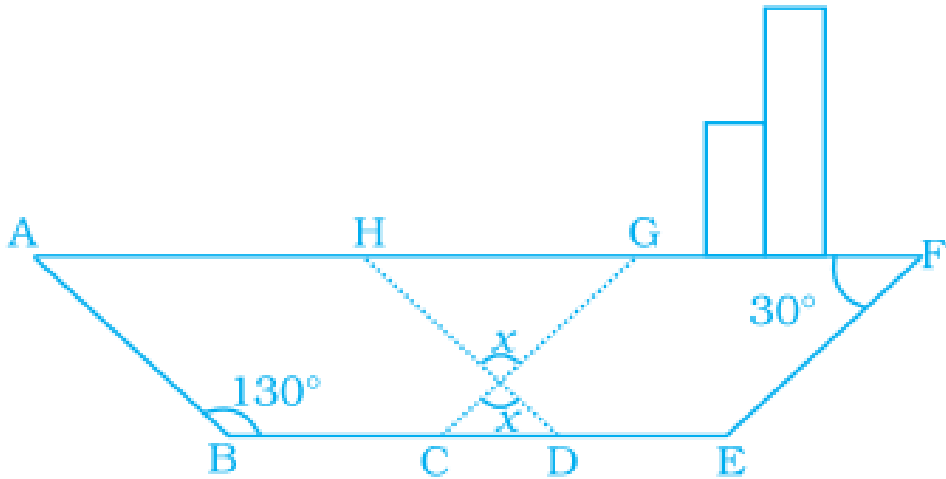
Maximum Marks: 60

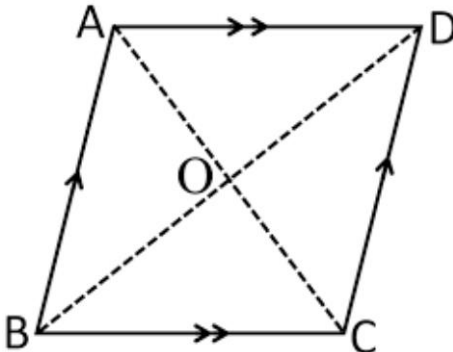
GENERAL INSTRUCTIONS:

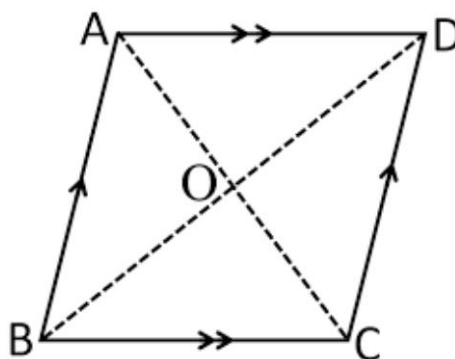
1. The question paper consists of 16 questions divided into 5 sections A, B, C, D and E.
2. Section A has 12 questions of 1 mark each
3. Section B has 6 questions. Q2 – Q7 are of 2 marks each.
4. Section C has 3 questions. Q8 – Q10 are of 3 marks each.
5. Section D has 3 questions. Q11 – Q13 are of 5 marks each.
6. Section E has 3 case-based questions. Q14 – Q16 are of 4 marks each.

Set B2	SECTION A	Marks
	Question 1 (i – xii)	
(i)	Monthly salary of a person is Rs. 15000. The central angle of the sector representing his expenses on food and house rent on a pie chart is 60°. The amount he spends on food and house rent is (a) Rs. 5000 (b) Rs. 2500 (c) Rs. 6000 (d) Rs. 9000	1
(ii)	The smallest number by which 432 must be divided to get a perfect square is (a) 2 (b) 3 (c) 4 (d) 6	1
(iii)	ABCD is a trapezium with AB parallel to CD. Which of the following CANNOT be concluded based on this? (a) $\angle 1 = \angle 4$ (b) $\angle 2 = \angle 3$ (c) $\angle 1 + \angle 2 + \angle 6 = 180^\circ$ (d) $\angle 3 + \angle 4 + \angle 5 = 180^\circ$	1

(iv)	Two coins are tossed simultaneously. Find the probability of getting exactly one head. (a) $\frac{1}{2}$ (b) $\frac{1}{4}$ (c) $\frac{3}{4}$ (d) 1	1
(v)	In which of the following quadrilaterals are the diagonals equal in length? (a) Rhombus and Rectangle (b) Square and Rectangle (c) Rhombus and Parallelogram (d) Square and Rhombus	1
(vi)	The multiplicative inverse of $\left(\frac{4}{9} \times \frac{-3}{7}\right)$ is (a) $\frac{12}{63}$ (b) $\frac{-12}{63}$ (c) $\frac{-4}{21}$ (d) $\frac{-21}{4}$	1
(vii)	In a fruit basket, one-fourth of the fruits are bananas, 30% are apples, and the rest are oranges. What percent of the fruits in the basket are oranges? (a) 30% (b) 45% (c) 40% (d) 70%	1
(viii)	A table costs ₹ 1500 more than a chair. If the cost of the chair is ₹ x , which of these expressions shows the total cost of the table and the chair together, in rupees? (a) $x + 1500$ (b) $x - 1500$ (c) $2x + 1500$ (d) $2x - 1500$	1
(ix)	The additive inverse of $\frac{-8}{15}$ is (a) $\frac{15}{8}$ (b) $\frac{8}{15}$ (c) $\frac{-15}{8}$ (d) $\frac{-8}{15}$	1
(x)	If the ratio of boys to girls is 2:3, then the percentage of girls is: (a) 40% (b) 50% (c) 60% (d) 30%	1
(xi)	If $16 - 3(x - 7) = -14$, then value of x is (a) 17 (b) 15 (c) 14 (d) 18	1
(xii)	How many natural numbers lie between 18^2 and 19^2 ? (a) 30 (b) 37 (c) 35 (d) 36	1
SECTION B		
2.	A washing machine costs Rs 50,000. It depreciates at 25% per year. Find the value of machine after 2 years?	2
3.	Verify $x \times (y \times z) = (x \times y) \times z$ for $x = \frac{2}{3}, y = \frac{-3}{7}, z = \frac{1}{2}$	2

4.	Solve: $0.25(4x - 5) = 0.75x + 8$ OR Solve: $\frac{m}{3} - \frac{m-2}{2} = \frac{1}{6} + \frac{m-1}{6}$	2
5.	Write a Pythagorean triplet whose one member is 16.	2
6.	Find the number of sides of a regular polygon whose each interior angle has a measure of 135° .	2
7.	Solve: $\frac{2x+1}{4} = \frac{3x-1}{3}$	2
	SECTION C	
8.	Using suitable rearrangement, find the sum of $\frac{7}{10} + \frac{1}{7} + 2 + \frac{-4}{5} + \frac{5}{14}$. OR Simplify $\frac{2}{3} \times \frac{-5}{7} + \frac{7}{3} + \frac{2}{3} \times \frac{2}{7}$ by using suitable property.	3
9.	ABCD is a trapezium such that $AB \parallel CD$, $\angle A : \angle D = 2 : 1$, $\angle B : \angle C = 7 : 5$. Find all angles of the trapezium. OR In the following figure of a ship, ABDH and CEFG are two parallelograms. Find the value of x. 	3
10.	The marked price of a mobile phone is ₹40,000. The shopkeeper allows a 10% discount on it. (i) Find the price of the mobile phone after the discount. (ii) If 18% GST is levied on the discounted price, what is the final amount payable by the customer?	1 2

	SECTION D																		
11.	(a) Find the smallest square number that is divisible by each of the numbers 36, 48 and 60.						3												
	(b) Find the square of 63 without actual multiplication.						2												
	OR																		
	Find the square root of 8335.69 by long division method.						5												
12.	A survey was conducted to find out the favourite sports of a group of students. Represent the data using a pie chart.						5												
	<table><tr><td>Sports</td><td>Cricket</td><td>Football</td><td>Badminton</td><td>Tennis</td><td>Others</td></tr><tr><td>Number of students</td><td>70</td><td>25</td><td>30</td><td>40</td><td>15</td></tr></table>							Sports	Cricket	Football	Badminton	Tennis	Others	Number of students	70	25	30	40	15
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13.	In a laboratory, the count of bacteria in a certain experiment was increasing at the rate of 2.5% per hour. Find the number of bacteria at the end of 2 hours if the initial count was 3,50,000.						5												
	OR																		
	Find the difference between Compound Interest and Simple Interest on Rs 45,000 at 12% per annum for 2 years.																		
	SECTION – E																		
14.	CASE STUDY – I																		
	A landscape designer is planning a rhombus-shaped flower bed in a park. The rhombus is named ABCD, and its diagonals AC and BD intersect at point O. The diagonals divide the rhombus into four triangular sections to plant different types of flowers. The following measurements (in cm) are given below:																		
	• $OA = 4x$ • $OC = x + 6$ • $OB = 15$ • $OD = 5x + y$ (i) Find the value of x. (ii) Find the value of y. (iii) (a) Find the length of side AD. Hence, calculate the perimeter of rhombus ABCD.  OR (iii) (b) If $\angle DBC = 48^\circ$, find the measure of $\angle OAD$.																		
						1													
						1													
						2													



15.	<u>CASE STUDY – II</u> The event in-charge of a school is organizing a cultural program in the auditorium. A total of 1,050 chairs are available for the audience. She wants to arrange the chairs in a perfect square layout, where the number of rows is equal to the number of columns, to create a neat and balanced seating arrangement. Based on this information, answer the following question: (i) Is 1,050 a perfect square number? Justify. (ii) If the chairs are arranged to form the largest possible perfect square, how many chairs will be left unused? (iii) (a) How many additional chairs are required to form the next perfect square arrangement? OR (iii) (b) If the number of chairs are increased to 2116 and they are arranged in a perfect square layout, how many rows will be there?	1 1 2
16.	<u>CASE STUDY - III</u> During Library Week celebrations, the school library keeps 50 numbered cards (from 1 to 50) into a box. Each card number represents a specific book on display. A student is asked to draw one card at random, and he/she receives the book that corresponds to the selected number as a gift. Based on this information, answer the following question: (i) How many total outcomes are possible? (ii) What is the probability that the number on the chosen card is a one-digit prime number? (iii) (a) What is the probability that the number on the chosen card is divisible by 2 and 3? OR (iii) (b) What is the probability that the number on the chosen card is not a perfect square number?	1 1 2