

केन्द्रीय विद्यालय संगठन, कोलकाता संभाग
KENDRIYA VIDYALAYA SANGATHAN, KOLAKATA REGION
अर्ध वार्षिक परीक्षा / HALY YEARLY EXAMINATION, 2026-27

कक्षा/ CLASS :VII

समय/ Time: 02:30 घंटे/ Hours

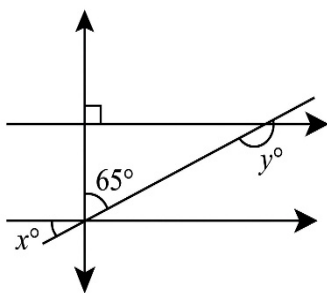
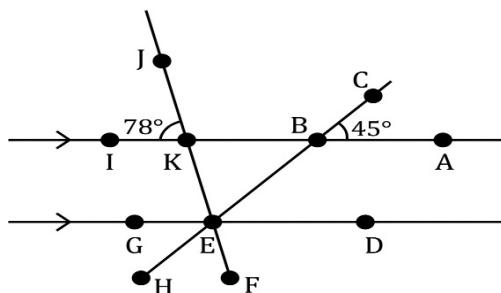
विषय/ SUBJECT : गणित / MATHEMATICS

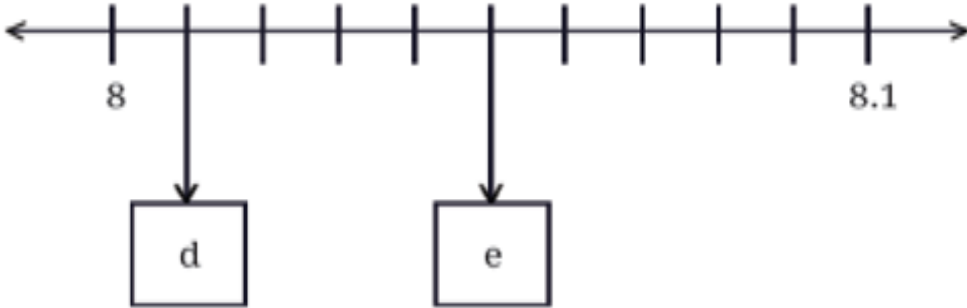
अधिकतम अंक/ Max. Marks: 60

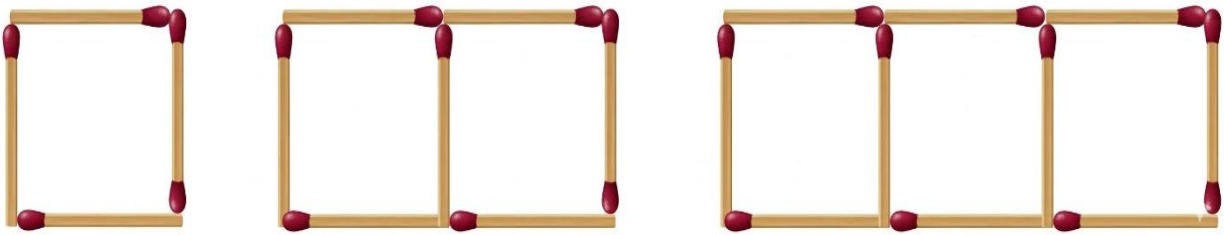
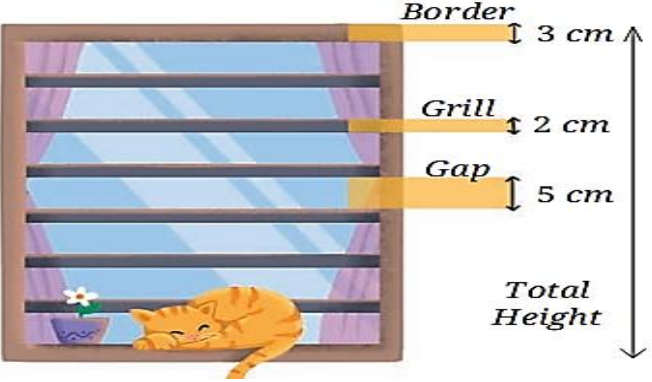
सामान्य निर्देश/ General Instructions:

- The question paper contains 5 pages & consists of 28 questions which is divided into 5 sections A, B, C, D & E.
- Section A comprises of 12 MCQs of 1 mark each.
- Section B comprises of 6 questions of 2 marks each. Internal choice has been provided in 2 questions.
- Section C comprises of 6 questions of 3 marks each. Internal choice has been provided in 1 question.
- Section D comprises of 2 questions of 5 marks each. Internal choice has been provided in 1 question.
- Section E comprises of 2 questions of 4 marks each. Internal choice has been provided in 2 questions.

SECTION A		
1	Suppose you write down all the numbers 1,2,3, ..., 9,10,11, ..., 97,98,99, ...The tenth digit is '1' and eleventh digit is '0' as part of writing the number 10. What would be the 26 th digit: (a)1 (b) 2 (c) 6 (d) 5	1
2	If two parallel lines are cut by a transversal, what is the relationship between the interior angles on the same side of the transversal (consecutive interior angles)? (a) They are supplementary (add up to 180°) (b) They are always equal to each other (c) They are complementary (add up to 80°) (d) They are equal to 45°	1
3	DIRECTIONS for this question: In the questions given below, there are two statements marked as Assertion (A) and Reason (R). Mark your answer as per the codes provided below: (a) Both A and R are true and R is the correct explanation of A. (b) Both A and R are true but R is not the correct explanation of A. (c) A is true but R is false. (d) A is false but R is true. A: Two lines p and q are intersected by a transversal r in such a way that the pairs of corresponding angles so formed are equal. R: Line p is parallel to line q.	1
4	For Alphametic $1G \times G = HG$, the possible value of G for $G \neq H$: (a) 1 or 5 or 6 (b) 5 or 6 (c) Only 6 (d) Only 1	1
5	Which of the following is not equivalent to 1 km? (a) 100000 cm (b) 1000 m (c) 100000 mm (d) 700 m + 30000 cm	1
6	The Ascending Order of numbers is reflected in which of the following: (a) $1.010 < 1.011 < 1.11 < 1.101$ (b) $2.567 < 2.576 < 2.756 < 2.765$ (c) $4.678 \text{ g} < 4.687 \text{ g} < 4.693 \text{ g} < 4.69 \text{ g}$ (d) $33.13 \text{ m} < 33.313 \text{ m} < 33.131 \text{ m} < 33.311 \text{ m}$	1
7	Conversion of 4 milligrams into gram and kilogram (by using decimals) are: (a) 0.004 g & 0.00004 kg (b) 0.004 g & 0.0000004 kg (c) 0.004 g & 0.000004 kg (d) 0.04 g & 0.000004 kg	1
8	Which of the following cannot be the measurements of vertically opposite angles: (a) $80^\circ, 100^\circ, 80^\circ, 100^\circ$ (b) $90^\circ, 90^\circ, 90^\circ, 90^\circ$ (c) $80^\circ, 100^\circ, 70^\circ, 110^\circ$ (d) $60^\circ, 120^\circ, 60^\circ, 120^\circ$	1

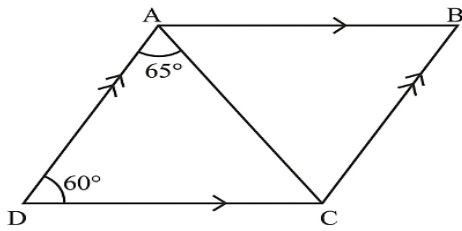
9	The angle formed between the extension of a side of a triangle and the other side is called an exterior angle. If the sides other than the extended side are equal and measurement of the exterior angle is 140° then the all the angles of the triangles are: (a) $140^\circ, 20^\circ, 20^\circ$ (b) $40^\circ, 70^\circ, 70^\circ$ (c) $40^\circ, 60^\circ, 80^\circ$ (d) $140^\circ, 30^\circ, 10^\circ$	1															
10	Which of the following is Fibonacci-Virahanka series? (a) 1,3,6,10,15, ... (b) 1,6,15,28,45, 66,... (c) 2,4,7,11,16 (d) 1,2,3,5,8, ...	1															
11	Simplest form of the expression $2a+3b-(-4c+3b-5bc)-6a$ is: (a) $8a+6b+4c-5bc$ (b) $-4a+4c-5bc$ (c) $-4a+4c+5bc$ (d) $8a+4c+5bc$	1															
12	The terms and their coefficient of the expression $5x - 4y - 3$ are: <table border="1" data-bbox="183 504 702 705"> <thead> <tr> <th></th><th>Terms</th><th>Coefficients</th></tr> </thead> <tbody> <tr> <td>(a)</td><td>$5x, -4y$</td><td>5, -4</td></tr> <tr> <td>(b)</td><td>$5x, -4y, 3$</td><td>5, -4, 3</td></tr> <tr> <td>(c)</td><td>$5x, -4y, -3$</td><td>5, 4, 3</td></tr> <tr> <td>(d)</td><td>$5x, -4y, -3$</td><td>5, -4</td></tr> </tbody> </table>		Terms	Coefficients	(a)	$5x, -4y$	5, -4	(b)	$5x, -4y, 3$	5, -4, 3	(c)	$5x, -4y, -3$	5, 4, 3	(d)	$5x, -4y, -3$	5, -4	1
	Terms	Coefficients															
(a)	$5x, -4y$	5, -4															
(b)	$5x, -4y, 3$	5, -4, 3															
(c)	$5x, -4y, -3$	5, 4, 3															
(d)	$5x, -4y, -3$	5, -4															
SECTION B																	
13	Soujanya, Deyotri, Srijani & Eklavya went to a hotel and ordered four Masala Dosas. Each Dosa Costs Rs. 75 and they wish to thank the waiter by tipping Rs. 20 . (i) Write an Arithmetic Expression describing the total cost. (ii) Calculate the Total Cost.	2															
14(A)	Find the value of x and y: 	2															
14(B)	OR In the given figure, $\angle ABC = 45^\circ$ and $\angle IKJ = 78^\circ$. Find angles $\angle GEH$ & $\angle FED$: 	2															
15(A)	Subtract the expressions given below: (a) $9a - 6b + 14$ from $6a + 9b - 18$ (b) $-15x + 13 - 9y$ from $7y - 10 + 3x$	2															

	OR										
15(B)	Add the expressions given below: (a) $4d - 7c + 9$ and $8c - 11 + 9d$ (b) $-6f + 19 - 8s$ and $-23 + 13f + 12s$										
16	Write algebraic expressions by using the variable 'k': (a) 3 more than 2 times a number. (b) From 5 times a number 7 is subtracted.	2									
17	Identify the statements that are true. (a) The expression $4m - 1$ always gives odd numbers. (b) Both expressions $2p + 1$ and $2q - 1$ describe all odd numbers.	2									
18	In the number line shown below, what decimal numbers do the boxes labelled 'd' & 'e' denote: 	2									
<u>SECTION C</u>											
19	During the daytime a snail climbs 3 cm up a post, and during the night while asleep, accidentally slips down by 2 cm. The post is 10 cm high, and a delicious treat is on its top. In how many days will the snail get the treat?	3									
20(A)	Fill in the boxes of the given grid to make it a 3×3 magic square with 15 as the magic sum. Repetition of numbers is not allowed. Some boxes are already filled. <table border="1" data-bbox="183 1478 386 1601"> <tr> <td>2</td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td>1</td> </tr> <tr> <td></td> <td>3</td> <td></td> </tr> </table> OR	2					1		3		3
2											
		1									
	3										
20(B)	Solve this alphametic and suggest the possible values of U, A & T: $\begin{array}{r} \text{UT} \\ + \text{TA} \\ \hline \text{TAT} \end{array}$										

21	Look at the matchstick pattern below. Observe and identify the pattern. How many matchsticks are required to make 10 such squares. How many are required to make 'n' squares: 	3
22	Pushpita sells two types of flowers on Independence Day: champak and marigold. 'p' customers only bought champak, 'q' customers only bought marigold, and 'r' customers bought both. On the same day, she gave away a tiny national flag to every customer. How many flags did she give away that day?	3
23	For the following situation: (i) Write the expression describing the situation (ii) Identify its terms and find the value of the expression. (iii) Find the total height of the window by writing an expression describing the relationship among the measurements shown in the picture. 	3
24	What are the face values & place values of '2' in the numbers 856.925, 729.876 & 985.342?	3
<u>SECTION D</u>		
25(A)	Light Year is the unit of distance. It is used in Space Science and Astronomy. It is the distance travelled by the light rays in one year. Light always travels with speed of 300000 km/s. Now convert: 1 Light Year into m. OR	5
25(B)	Evaluate the following in a faster way (without using direct multiplication): (i) 56×125 (ii) 96×625 (iii) 4×1768×25 (iv) 125×40×8×25 (v) 16× 24 × 625	
26(A)	Construct a triangle ABC with BC = 6 cm, AB = 5 cm, CA = 5 cm. Construct an altitude AD from A to BC. Measure the length AD. OR	5
26(B)	Construct a triangle ABC where AB = 5 cm, $\angle A = 45^\circ$ and $\angle C = 80^\circ$.	

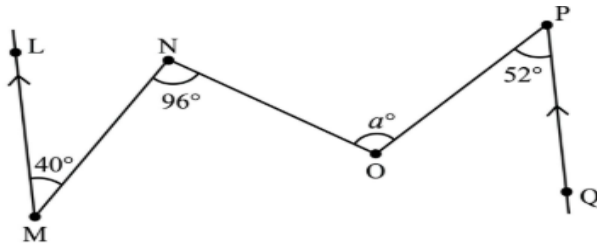
SECTION E

- 27(A) In the given figure, line segment AB is parallel to CD and AD is parallel to BC. $\angle DAC$ is 65° and $\angle ADC$ is 60° . What are the measures of angles $\angle CAB$, $\angle ABC$, $\angle ADC$ and $\angle BCD$?



OR

- 27(B) What is the measure of angle $\angle NOP$ in the given figure?



- 28 A local train from Yahapur to Vahapur stops at three stations at equal distances along the way. The time taken in minutes to travel from one station to the next station is the same and is denoted by t . The train stops for 2 minutes at each of the three stations.

- (a) If $t = 4$, what is the time taken to travel from Yahapur to Vahapur?
(b) What is the algebraic expression for the time taken to travel from Yahapur to Vahapur?

OR

Numbers are written in a particular sequence in this endless 4-column grid. Give expressions to generate all the numbers in a given column (1, 2, 3, 4) by using the variable of your choice.

1	2	3	4
1	2	3	4
5	6	7	8
9	10	11	12
13	14	15	16
