

कक्षा/ CLASS :VIII

समय/ Time: 02:30 घंटे/ Hours

विषय/ SUBJECT :गणित / MATHEMATICS

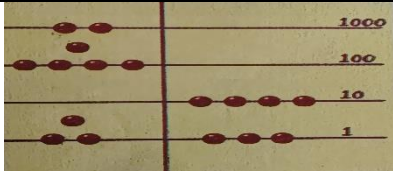
अधिकतम अंक/ Max. Marks: 60

General Instructions:

1. All questions are compulsory.
2. Section A has 12 Multiple Choice questions each of 1 mark each in which Q.N. 11 and 12 are of Assertion and Reason type questions.
3. Section B has 6 Very Short answer type questions each of 2 marks each.
4. Section C has 6 Short Answer type questions each of 3 marks each.
5. Section D has 2 Long Answer type question of 5 marks each.
6. Section E has 2 Case-Based questions of 4 marks each, broken into 1+1+2 marks parts.
7. Options are provided in 2 questions of 2 marks, 1 question of 3 marks and 1 question of 5 marks.
8. Internal choice is provided in the 2 marks parts of Case-Based questions.

S.NO	QUESTION	MARKS
SECTION-A		
MULTIPLE CHOICE QUESTIONS		
1	How many numbers lie between the squares of the numbers 26 and 27. a) 50 b) 52 c) 53 d) 54	1
2	Standard form of the number 65950 is- a) 6.595×10^3 b) 65.95×10^4 c) 6.5950×10^3 d) 6.5950×10^4	1
3	Which of the following number represent the Gumulgal number (ukasar-ukasar-ukasar-ukasar-urapon) + (ukasar-ukasar-ukasar-urapon) a) 9 b) 11 c) 16 d) 24	1
4	A quadrilateral in which all the sides have the same length but diagonals are unequal in length then the quadrilateral is a – a) Square b) Rectangle c) Rhombus d) Trapezium	1
5	$(a - b)^2 = ?$ a) $(b - a)^2$ b) $a^2 + 2ab + b^2$ c) $a^2 - b^2$ d) $\sqrt{(a - b)}$	1
6	The product of Egyptian numerals and   a) 10^3 b) 10^4 c) 10^5 d) 10^6	1
7	For the statement “ The sum of squares of two consecutive numbers”, which of the following algebraic expression is correct- a) $\{m + (m + 1)\}^2$ b) $m^2 + 1$ c) $m^2 + (m + 1)^2$ d) $(m + n)^2$	1
8	A plot is in the shape of a parallelogram. Which of the following is always true? a) All sides are equal b) Opposite sides are equal and parallel c) Diagonals are equal d) Each interior angle is equal to 90° .	1
9	What is the base of the Mesopotamian number system ? a) 10 b) 20 c) 50 d) 60	1
10	Which of the following is not an Identity – a) $(a + b)^2 = a^2 + 2ab + b^2$ b) $a^2 + b^2 = (a + b)(a - b)$ c) $(x + a)(x + b) = x^2 + (a + b)x + ab$ d) $(a - b)^2 = b^2 - 2ab + a^2$	1

	Assertion/Reason Directions: Each of questions 11 and 12 contain two statements- first Assertion (A) and second Reason (R). Select the correct answer to these questions from the codes (a), (b), (c) or (d) as given 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.	
11	Assertion (A): 4275 is divisible by 9. Reason (R): The digital root of 4275 is divisible by 3.	1
12	Assertion (A): $(x + 6y)(x - 5y)$ can be expressed using distributive law. Reason (R): $(a + b)(a - b) = a^2 - b^2$.	1
SECTION-B VERY SHORT ANSWER TYPE QUESTIONS		
13	Find the cube root of 1728 by prime factorisation method.	2
14	In ancient Rome, a man was calculating the total distance of his journey. If he travelled LX miles each for XL days, what was the total distance he travelled? Express in Roman numerals. OR Represent the number 2060 in Mayan number system.	2
15	Find the product of 212 and 1005 using distributive property.	2
16	The three angles of a quadrilateral are 105.5° , 72.5° , 39.5° . Find its fourth angle.	2
17	If $3^x = 243$ and $2^y = 128$, then find the value of $(x + y)$.	2
18	Expand the product $(5 + x)(x - 6)$. OR Express 400 as the difference of two squares.	2
SECTION-C SHORT ANSWER TYPE QUESTIONS		
19	Express the number 32400 as a product of its prime factors and represent the prime factors in their exponential form.	3
20	Two adjacent sides AB and BC of a parallelogram ABCD are in the ratio 5 : 3 . If the perimeter of the parallelogram is 200 cm. Find the length of AB and BC.	3
21	Solve the following cryptarithms – i) $EF \times E = GGG$ ii) $EGG + EGG = PAGE$	3

22	Find the addition by looking at the “Abacus Kit”		3
23	Show that $(a + b)^2 = a^2 + 2ab + b^2$ geometrically.		3
24	Draw a parallelogram with adjacent sides of lengths 4 cm and 5 cm and an angle of 30° between them. OR Using the diagonal properties, construct a parallelogram whose diagonals are of lengths 7cm and 5cm and intersect at an angle of 140° .		3
SECTION-D LONG ANSWER TYPE QUESTIONS			
25	Write ten possible pairs for x and y so that the number $7x8y3$ is divisible by 9.		5
26	Calculate and write the answer in scientific notation: population = 8.2 billion] i) If each person in the world had 30 pieces of clothing, find the total number of clothing. ii) The human body has about 38 trillion bacterial cells. Find the bacterial population residing in all humans in the world. OR i) Find the unit digit if 2^{224} is divided by 4^{32} . ii) How many times larger than 4^{-2} is 4^2 ?	[World	5
SECTION-E CASE-BASED QUESTIONS			
27	Mrs. Sharma has a square garden having perimeter 40 meters. She wants to create a path around the garden using paving stones. The path will be 1 meter wide on all sides. She is curious about how many paving stones she will need. Each paving stone is a square with a side length of 50 cm.   From the above information give the answer of following questions. i) What is the length of the side of the garden. ii) Find the area of Mrs. Sharma’s garden? iii) What is the area of the path? OR How many paving stones will she need to cover the path?		4

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A factory produces refrigerators in two sections: section A produces $(3x+5)$ refrigerators and section B produces $(5x-2)$ refrigerators daily

4



- i) What is the total production of refrigerators in one day?
- ii) Calculate total production of refrigerators for $x = 8$ in the month of June.
- iii) One day section A of the factory produces $(x - 1)$ defective refrigerators and section B produces $(x - 2)$ defective refrigerators, then find the total number of non-defective refrigerators produced by the factory on that day.

OR

What is the total production of refrigerators in the month of January?
