



**BK BIRLA CENTRE FOR EDUCATION**  
SARALA BIRLA GROUP OF SCHOOLS  
SENIOR SECONDARY|CO-ED DAY CUM BOYS' RESIDENTIAL SCHOOL



**ANNUAL EXAMINATION , 2025**

**MATHEMATICS (041)**

Class : VIII  
Date : 08-03-2025  
Admission No.:

Duration: 3 Hrs  
Max. Marks : 80  
Roll No.:

**General Instructions:**

1. This Question Paper has 5 Sections A, B, C, D and E.
2. Section A has 20 MCQs carrying 1 mark each.
3. Section B has 5 questions carrying 02 marks each.
4. Section C has 6 questions carrying 03 marks each.
5. Section D has 4 questions carrying 05 marks each.
6. Section E has 3 case based integrated units of assessment (04 marks each) with sub- parts of the values of 1, 1 and 2 marks each respectively.
7. All Questions are compulsory. However, an internal choice in 2 Qs of 2 marks, 2 Qs of 3 marks and 2 questions of 5 marks has been provided.

**SECTION A**

1. The expansion of  $a^3$  is  
a)  $3 \times a$                       b)  $a + a + a$                       c)  $3 \times 3 \times 3$                       d)  $a \times a \times a$
2. What will be the unit digit of the cube of a number 528 ?  
a) 4                                  b) 6                                  c) 2                                  d) 8
3. On what a discount is calculated?  
a) S.P.                              b) M.P.                              c) Profit                              d). None of these
4. The ratio of 10 m to 1 km is  
a) 1 : 10                            b) 10 : 1                            c) 1:100                            d) 100 : 1
5. What is the value of  $5x^{25} - 3x^{32} + 2x^{12}$  at  $x=1$ ?  
a) 0                                  b) 2                                  c) 4                                  d) None of these
6. The algebraic expression  $8a + 6b - 9c$  is a  
a) Monomial                      b) Binomial                      c) Trinomial                      d) None of the above
7. The space occupied by solids is called its:  
a) Area                              b) surface area                      c) volume                              d) none of these
8. If the area of a base of a cylinder is  $11 \text{ cm}^2$  and its height is 7 cm, then its volume is:  
a)  $121 \text{ cm}^3$                       b)  $154 \text{ cm}^3$                       c)  $77 \text{ cm}^3$                       d)  $49 \text{ cm}^3$
9. Which of the following is the common factor of  $21x^2y$  and  $35xy^2$ ?  
a)  $7xy$                               b)  $xy^2$                               c)  $xy$                               d)  $x^2y$
10. Multiply  $(x + y)$  and  $(x - y)$ . The value of this product for  $x = 9$  and  $y = 5$  is  
a) 25                                  b) 56                                  c) 16                                  d) - 4
11. Coordinates of origin are:  
a) ( 5 , 5 )                      b) ( 4 , 4 )                      c) ( 0 , 0 )                      d) ( 3 , 3 )
12.  $3x+15 = 0$  will have:  
a) Unique solution              b) Two solutions              c) Infinitely many solutions              d) No solutions.

13. The solution of the equation  $3(x - 4) = x + 6$  is

- a) 18                      b) 9                      c) -9                      d) None of these

14. A quadrilateral has three acute angles, each measure  $80^\circ$ . The measure of the fourth angle is:

- a)  $130^\circ$                       b)  $360^\circ$                       c)  $360^\circ$                       d)  $120^\circ$

15. State the name of a regular polygon of 6 sides.

- a) Pentagon                      b) hexagon                      c) heptagon                      d) None of these

16.  $3^{-2} \times 3^{-5}$  is equal to:

- a)  $3^{-7}$                       b)  $3^{-3}$                       c)  $3^{-10}$                       d)  $3^7$

17.  $0.09 \times 10^{10}$  is equal to:

- a) 9 00 00 00 00                      b) 9 00 00 00                      c) 90 00                      d) 9

18.  $a^2 - b^2$  is a product of

- a)  $(a + b)(a - b)$                       b)  $(a + b)(a + b)$                       c)  $(a - b)(a - b)$                       d) none of these.

19. **Assertion (A) –The ratio of 50 paise to Rs. 1 is 1: 2.**

**Reasons (R) –A ratio can be defined as the relationship or comparison between two numbers of the same unit to check how bigger is one number than the other one**

- 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

20. Assertion: (A): **All the parallelograms are rectangles.**

**Reason(R): All the rhombuses are parallelograms**

- 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

### SECTION B

21. Find the smallest number by which the number must be multiplied to obtain a perfect cube: 2560.

22. 72 % of 25 students are interested in mathematics. How many students are not interested in Mathematics ?

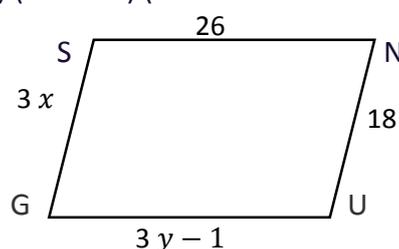
OR

A Scooter was bought at Rs 42,000. Its value depreciated at the rate of 8 % per annum. Find its value after one year.

23. Multiply : i)  $5x(2x + 3y + 5)$                       ii)  $(7x + 3)(5x + 2)$

24. GUNS is a parallelogram

Find  $x$  and  $y$



OR

Two adjacent angles of a parallelogram are  $(2x + 10^\circ)$  and  $(3x - 40^\circ)$ .

Find the measure of all angles of the parallelogram.

25. Simplify: a)  $[3^{-1} \times 4^{-1}]^2$       b)  $[3^{-1} \div 5^{-1}]^3$

**SECTION C**

26. Find the Cube root of : 13824.

27. Find the side of the cube whose surface area is  $600 \text{ cm}^2$ .

OR

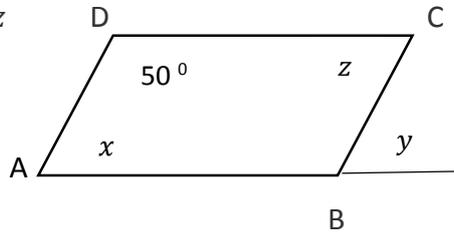
Find the area of a Trapezium whose parallel sides are 20 m and 30 m and the distance between them is 12 m.

28. Factorise : a)  $100 \text{ m}^2 - 121 \text{ n}^2$       b)  $49 \text{ x}^2 - 36$ .

29. Solve for  $x$  :  $8x + 4 = 3(x - 1) + 7$

30. ABCD is a parallelogram. Find  $x$ ,  $y$  and  $z$

$\angle D = 50^\circ$



31. Find the value of  $x$  so that  $7^{2x+1} \div 49 = 7^3$

OR

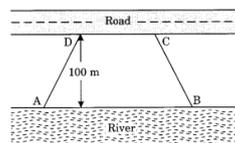
Express the following in usual form: i)  $3.89 \times 10^3$     ii)  $2.98 \times 10^{-3}$     iii)  $1.23 \times 10^{-5}$

**SECTION D**

32. If 60 % people in a city like cricket , 30 % like football and remaining like other games. then what percent of the people like other games ? If the total number of people is 50 lakh, find the exact number who like each type of game .

33. Simplify: i)  $(a^2 + 5)(b^3 + 3) + 5$     ii)  $(a + b)(c - d) + (a - b)(c + d) + 2(ac + bd)$

34. Mohan wants to buy a trapezium-shaped field. Its side along the river is parallel to and twice the side along the road. If the area of this field is  $10500 \text{ m}^2$  and the perpendicular distance between the two parallel sides is 100 m, find the length of the side along the river.



OR

Danial 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  $100 \text{ m}^2$  of area is painted. How many cans of paint will she need to paint the room ?

35. a) Factorise :  $p^4 - 81$

b) Factorise the expression and divide :  $y^2 + 7y + 10 \div (y + 5)$

OR

a) Factorise :  $a^4 - b^4$       b)  $p^2 + 6p - 16$

**SECTION E**

36. Smart watches are a big innovation in the wearable industry , performing too many functions. The most common now a days is to count the number of steps . This has a big impact on health. Gunjan noticed the number of steps she walked on her smart watch in the evening and found to be 256.



- i) Is the given number a perfect cube ? 1
- ii) If not , what is the smallest number to be multiplied to make it a perfect cube ? 2

OR

What is the cube root of resulting number ?

- iii) What will be the unit digit of cube of 256 ? 1

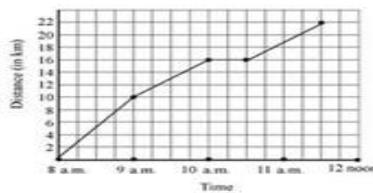
37. Anup after retirement thought to stay in village house . After going there he found there was shortage of water in village , so he thought of constructing a well . He hired some labours and guided them that well should be 7 m in diameter and 20 m deep.

- i) What is the shape of the well ? 1
- ii) What will be radius of the well ? 1
- iii) What will be volume of the well ? 2

OR

What will be the Curved surface area of the well ?

38. A courier person cycles from a town to a neighbouring suburban area to deliver a parcel to a merchant . His distance from the town at a different times is shown by the following Graph. Answer the following using the below given graph.



- i) What is the scale taken for time along x – axis ? 1
- ii) How much time did the person take for the travel ? 2

OR

Did the person stop on his way ? Explain.

- iii) How far is the place of the merchant from the town ? 1

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