

Blay
10/10/25

BHARTIYA SHIKSHA BOARD
Model Paper – Half yearly
MATHEMATICS - Class 8
Session 2025-26

Time: 3 Hours

Max Marks: 80

Instructions:

- Read the questions carefully.
- Please check that this question paper contains 04 printed pages.
- **10** minutes extra time is allowed to read this question paper. During this time, students will only read the question paper and not write the answer.
- Attempting all the questions is compulsory.
- This question paper contains **38** questions.
- This question paper comprises of four **section A, B, C and D.**
Section A: Q.no.1 to 20, each question carries 1 mark.
Section B: Q.no. 21 to 27, each question carries 2 marks.
Section C: Q.no. 28 to 36, each question carries 4 marks.
Section D: Q.no. 37 to 38, each question carries 5 marks.
- There is no overall choice in this question paper. However, an internal choice has been given in 2 questions of 2 marks each and 2 questions of 4 marks each. You have to attempt only one of the choices in such questions.

Section-A

1. What is the meaning of the Sanskrit term 'Varga'?
(a) A triangle (b) A square number
(c) A circle (d) none of these
2. What is the Bharatiya name for algebra.
(a) Ganit (b) Avyakt Ganit
(c) Bijaganit (d) patiganit
3. What is the meaning of the word 'Bija' and 'ganit'?
(a) Seeds and calculation (b) numbers and science
(c) unknown and known (d) expression and problems
4. Square root of 81 is:
(a) 7 (b) 9 (c) 5 (d) 8
5. The additive inverse of $-\frac{5}{7}$ is:
(a) $\frac{-7}{5}$ (b) $-\frac{5}{7}$ (c) $\frac{5}{7}$ (d) $\frac{7}{5}$

6. $a^2 - b^2$ is equal to
 (a) $(a - b)(a + b)$ (b) $(a - b)(a - b)$
 (c) $(a + b)(a + b)$ (d) $a^2 + b^2$
7. 20% of 100 is:
 (a) 28 (b) 40 (c) 80 (d) 20
8. A linear equation in one variable has only _____ solution.
 (a) Two (b) one (c) three (d) four
9. Write 0.0000069 in standard form:
 (a) 6.9×10^{-6} (b) 6.9×10^{-8} (c) 6.9×10^0 (d) 690000
10. Multiplicative inverse of 7^5 is
 (a) 7^5 (b) $\frac{7}{5}$ (c) 7 (d) 7^{-5}
11. Find the square root of 100 by repeated subtraction method.
12. Find the cube root of 1728 by prime factorisation.
13. Show that: $-(-x) = x$, where $x = -\frac{2}{3}$.
14. Find the two rational numbers between 1 and 2.
15. Find the value: $2^2 + 3^3 + 4^0$
16. Solve: $3x = 2x - 8$
17. Find product: $p^2q^2r^3$ by $\frac{2}{3}pqr$.
18. Amount is equal to:
 (a) Compound Interest + principal (b) compound Interest – principal
 (c) 2 x principal (d) 2x compound Interest
19. Statement: cube of 900 will end in four zeros.
 Reason: let 'a' be an integer, then $a^3 = a \times a \times a$
 (a) Both (S) and (R) are true (b) Both (S) and (R) are false
 (c) (S) is false but (R) is true (d) (S) is true but (R) is false
20. Statement (S): The sum of $x^2 + 6x$ and $x^3 + 3x$, will have three terms.
 Reason (R): A polynomial having three terms is called a trinomial.
 (a) Both (S) and (R) are true (b) Both (S) and (R) are false
 (c) (S) is false but (R) is true (d) (S) is true but (R) is false

Section-B

21. Find 25% of 400.

22. Find the simple interest at the end of one year for ₹400 at 5% interest per annum.

Or

Divide: $x^2 + 8x + 16$ by $x+4$

23. Using identities, find the value of $(47)^2$.

24. Solve and verify the solution of equation: $\frac{2x+1}{2-x} = 3$.

25. Find the multiplicative inverse of $(-\frac{2}{13}) \times (\frac{3}{-7})$.

26. Find the value of x : $2^x = \frac{1}{1024}$.

27. Three numbers are in the ratio 3:4:5 and the sum of their cubes is 216000. Find the numbers.

Or

Write a Pythagoreans triplet whose smallest number is 6.

Section - C

28. Find the smallest number by which 9408 should be divided to get a perfect square number. Also find the square root of the perfect square number.

29. If $x^3 = \frac{729}{2197}$, $y^3 = \frac{9261}{42875}$. Find the value of $x + y$.

30. Write True or False:

- (a) 0 is the smallest rational number .
- (b) Every integer is a rational number.
- (c) Every whole number is an integer.
- (d) 0 is a whole number but it is not a rational number.

31. Simplify: $\frac{(2^2 \times 9^{-2} \times 12^2)}{6^{-2} \times 18}$

32. In a class of 35 students, the number of boys is $\frac{2}{5}$ of the girls. Find the number of boys and girls in the class.

33. If $\frac{y+1}{y} = 12$, find the value of $\frac{y^2+1}{y^2}$.

34. The sale price of an article including 5% GST is ₹1050. Find its cost price.

Or

Find the amount and compound interest on ₹33,250 for three years if the rate of interest is $\frac{25}{2}\%$ per annum compounded annually.

35. The price of laptop is ₹42000. The shopkeeper offered a discount of ₹2400 on cash payment. Find the discount percentage on the laptop.

36. Find the square root of 0.037249?

Or

Factorise: $2a^2 + 4a - 48$.

Section D

Case study questions:

37. Today, Mr. Javed, a mathematics teacher, has to teach the properties of rational numbers. He wrote some of them on the board of the class.

$$A = \frac{2}{3}, B = \frac{5}{7}, C = -\frac{2}{3}, D = -\frac{3}{7}$$

- (a) He asked Jaya to find the sum of **A** and **B** and check if sum is a rational number?
- (b) He asked Mohit to find **C-D** and check that the answer is a rational number?
- (c) He asked Anil to find **A+D** and **C+B**? Are they equal? What property of rational number shows here?

38. A shop selling electrical goods has announced a clearance sale to clear old stock as shown here in the picture.



On the basis of given information, answer the following question.

- (a) What price will a customer has to pay to buy a geyser?
- (b) What is the discount percent offered on the table fan?
- (c) If a customer has to pay ₹8,500 to buy a washing machine, what was its marked price?