

Date: 12/03/2024

Standard: VIII

MATHEMATICS

Max. Marks: 80

Time: 3 hours

General Instructions:

1. There are 5 printed pages.
2. There are 4 sections in the paper: A, B, C, D.
3. Section A consists of 20 Objectives of 1 mark each, Section B consists of 6 questions of 2 marks each, Section C consists of 8 questions of 3 marks each and Section D consists of 6 questions of 4 marks each.
4. All questions are compulsory.

SECTION A

Q. Nos	Questions	Marks
	Choose the correct option:	1 × 20
1.	How many outcomes can be obtained by tossing a coin? a) 1 b) 2 c) 3 d) 4	1
2.	The ratio of speed of car 12 km per hour to the speed of scooter 36 km per hour is a) 1:3 b) 1:2 c) 1:4 d) None	1
3.	If we multiply $5x$ and $(-4xyz)$, then we get: a) $20x^2yz$ b) $-20x^2yz$ c) x^2yz d) $-2xyz$	1
4.	Surface area of cube of edge 'a' is: a) $4a^2$ b) a^2 c) $3a^2$ d) $6a^2$	1
5.	The perimeter of a square and its side is in: a) Direct Proportion b) Indirect Proportion c) Neither direct nor indirect d) Cannot be determined	1

The price of a motorcycle was Rs. 34,000 last year. It has increased by 20% this year.

The price of motorcycle now is _____

- a) Rs. 36,000 b) Rs. 38,800 ~~c) Rs. 40,800~~ d) Rs. 32,000

7. If x and y are inversely proportional, then: 1

- a) $x + y = \text{constant}$ b) $x - y = \text{constant}$ ~~c) $xy = \text{constant}$~~ d) $\frac{x}{y} = \text{constant}$

8. The factors of xyz are: 1

- a) x b) y c) z d) All of the options

9. A pack of 52 cards is shuffled and a card is drawn randomly. The probability that the card is not a face card is _____ 1

- a) $\frac{10}{13}$ b) $\frac{1}{2}$ ~~c) $\frac{2}{4}$~~ d) $\frac{9}{13}$

10. The height of a cuboid whose volume is 275 cm^3 and base area is 25 cm^2 is:

- a) 10 cm ~~b) 11 cm~~ c) 12 cm d) 13 cm

11. Which of the following is a like term as $8xy$? <https://www.cbseboardonline.com> 1

- a) 8 b) $8x$ c) $8y$ ~~d) xy~~

12. $3^{-2} \times 3^{-5}$ is equal to: 1

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

13. A cylindrical box has _____ curved surface and _____ circular faces, which are identical. 1

- a) One, One ~~b) One, two~~ c) two, one d) two, two

14. The solution of $\frac{y}{5} = 10$ is: 1

- a) 15 b) 10 ~~c) 50~~ d) 5

Waheeda bought an air cooler for Rs. 3300 including a tax of 10%. The price of the air cooler before VAT was added is:

- a) Rs. 2000 ~~b) Rs. 3000~~ c) Rs. 2500 d) Rs. 2800

16. The factors of $m^2 - 256$ are:

- a) $(m + 4)^2$ b) $(m - 4)^2$ c) $(m - 4)(m + 4)$ d) None

17. The value of 2^{-2} is:

- a) 4 b) $\frac{1}{4}$ c) 2 d) $\frac{1}{2}$

18. If you have a collection of 6 pairs of white socks and 3 pairs of black socks. What is the probability that a pair you pick without looking is white?

- a) $\frac{2}{3}$ b) $\frac{1}{3}$ ~~c) $\frac{1}{5}$~~ d) None

19. Which of the following is not a linear equation in one variable?

- a) $3z + 5 = 0$ b) $3(5x + y) = 0$ c) $3x + 55 = 0$ d) $3y + 5 = 0$

20. Factors of $54x^3y + 81x^4y^2$ are _____

- a) $54x^3y(2 + 3xy)$ b) $27x^3y(2 + 3xy)$ c) $27x^4y^2$ d) None

2x6=12

SECTION B

21. Verify whether the following equation is correct. Rewrite the incorrect equation correctly.

$$(2a)^2 + 5a = 4a + 5a$$

22. What is the probability of getting a marble which is not red from a bag containing 3 black, 8 yellow, 2 red and 5 white marbles?

23. The area of a rhombus is 16 cm^2 . If the length of one diagonal is 4 cm, find the length of the other diagonal.

24. The marked price of a fan is ₹ 2000/- and the shopkeeper allows a discount of 8% on it. Find selling price of the fan.

25. Factorise $144a^2 - 289b^2$ by using the formula $(a^2 - b^2) = (a - b)(a + b)$

26. Simplify: $(3^{-1} \times 4^{-1})^{-1} \times 5^{-1}$

SECTION C

27. Factorise $x^2 + 12x - 45$ by splitting the middle term
28. Simplify: $[5 - 3x + 2y - (2x - y)] - (3x - 7y + 9)$
29. In a trapezium, the parallel sides measure 40 cm and 20 cm. Calculate the area of the trapezium if its non-parallel sides are equal having the lengths of 26 cm.
30. In 15 days, the earth picks up 1.2×10^8 kg of dust from the atmosphere. In how many days will it pick up 4.8×10^8 kg of dust?
31. The list price of a refrigerator is ₹ 9700. If a value-added tax of 6% is to be charged on it, how much one has to pay to buy the refrigerator?
32. Find the value of x : $(\frac{8}{3})^{2x+1} \times (\frac{8}{3})^5 = (\frac{8}{3})^{x+2}$
33. A car can finish a certain journey in 10 hours at the speed of 48 km/hr. By how much should its speed be increased so that it may take only 8 hours to cover the same distance?
34. Solve: $\frac{3x-2}{2x-3} = -\frac{1}{2}$
35. Solve :
- (i) $10y(9y + 21) \div 2(3y + 7)$
- (ii) $9p^2q^2(3z - 12) \div 27pq(z - 4)$
36. A dice is rolled once. What is the probability that a number that will appear will be
- i) An Odd number
- ii) Greater than 1
- iii) A multiple of 3
- iv) A factor of 6
37. Multiply $x^2 + 2y$ by $x^3 - 2xy + y^3$ and find the value of the product for $x = 1$ and $y = -1$.

A cuboidal box of dimensions $2m \times 3m \times 2.5m$ is to be painted except its bottom.

Calculate how much area of the box has to be painted.

39. Solve the given equation $3\frac{1}{x} \times 5\frac{1}{4} = 17\frac{1}{2}$

40. The population of a city increases each year by 4% of what it had been at the beginning of each year. If the population in 1999 had been 6760000, find the population of the city in

i) 2001

ii) 1997.
