



NATIONAL MATHEMATICS OLYMPIAD-2015

Class: VIII
Time: 60 Minutes

Model Paper-1

Total Marks: 60

Total No. of Questions = 60(Each Question Carries-1 Mark)

I. Choose the Correct Answer among the given Options and write it in the given Answer Sheet

1. By selling a table for Rs.330 a trader gains 10%. Find the cost price of the table. []
A. Rs.320 B. Rs.300 C. Rs.430 D. Rs.430
2. A dealer buys a wrist watch for Rs.225 and spends RS.15 on its repairs. If he sells the same for RS.300, find his profit percent. []
A. 75% B. 60% C. 25% D. 20%
3. Malvika gets 98 marks in her exams. This amounts to 56% of the total marks. What are the maximum marks? []
A. 175 B. 150 C. 200 D. 160
4. Akhil has to pay 4% sales tax in addition to the price of a certain article. Find the price of the article, if he pays Rs.260 in all. []
A. Rs.220 B. Rs.250 C. Rs.256 D. Rs.200
5. The value of a machine depreciates every year by 10%. What will be its value after 2 years, if its present value is Rs.50,000? []
A. Rs.40,500 B. Rs.40,050 C. Rs.40,000 D. Rs.45,000
6. Minimum points required to have a line is []
A. 1 B. 2 C. 3 D. 4
7. Is every chord of a circle also a diameter []
A. Yes B. no C. Cont Say D. None of these
8. Number of line segments passes through a point []
A.2 B.1 C. infinitely D. many
9. Diameter of a circle is ---- its radius . []
A. Twice B. Thrice C. Same D. None of these
10. The largest chord in a circle []
A. Radius B. Diameter C. segment D. None of these
11. Two sides with a common end point are called []
A. Opposite sides B. adjacent sides C. parallel sides D. None of these
12. The interior of a curve together with its boundary is called []
A. Interior B. region C. closed curve D. None of these
13. $(4pq+3q)^2 - (4pq-3q)^2$ is []
A. $48pq^2$ B. $9q^2$ C. $16p^2q^2$ D. None of the above

14. 78×82 is

- A. 6400 B. 6936 C. 6396 D. None of the above

15. If Cost Price of an article is Rs 5000 and selling price is Rs 6000, then the profit % is

- A. 10% B. 15% C. 20% D. 25%

16. If the cost price is Rs. 4500 and gain is 5%, then the SP is

- A. Rs 4700 B. Rs 4725 C. Rs 4750 D. Rs 4775

17. If the selling price of 10 articles is equal to the cost price of 11 articles, then the gain % is

- A. 5% B. 7% C. 10% D. 15%

18. Bananas are bought at the rate of 4 for Rs. 3. At what rate must they be sold to get a gain of 20% for each banana?

- A. Rs 0.50 B. Rs 0.75 C. Rs 0.85 D. Rs 0.90

19. The Compound interest is

- A. always less than the simple interest B. always equal to the simple interest
C. always greater than simple interest D. always greater than or equal to simple interest.

20. In case of Compound interest, the principal

- A. increases every year B. remains same
C. decreases every year D. increase for the first year and then decreases

21. The square of 75 is

- A. 5265 B. 5625 C. 6255 D. 6525

22. The approximate value of $\sqrt{3}$ up to three places of decimal is

- A. 1.723 B. 17.230 C. 0.173 D. 1.732

23. The square root of 0.0324 is

- A. 0.18 B. 0.018 C. 0.012 D. 0.128

24. Lateral surface area of a cylinder

- A. $\pi r^2 h$ B. $2\pi r h$ C. $2\pi r[r+h]$ D. None of these

25. Total surface area of a cylinder

- A. $2\pi r h$ B. $2\pi r^2 h$ C. $2\pi r[r+h]$ D. None of these

26. Base perimeter of a room is 34m and the height of the room is 10m . Find the area of the four side walls .

- A. $34 \times 10 \text{ m}^2$ B. $2 \times 34 \times 10 \text{ m}^2$ C. $34 \times 10 \times 10 \text{ m}^2$ D. none of these.

27. The curved surface area of a cylinder is $100\pi \text{ m}^2$. Length of the cylinder is 10 m . Find its Radius .

- A. 10m B. 5m C. 20m D. none of these

28. A parallelogram with sides of equal length.

- A. rectangle B. rhombus C. kite D. triangle.

29. The adjacent angles in a parallelogram are

- A. equal B. 90 degree C. supplementary D. complementary

30. Name the polygon having 10 sides.

- A. Decagon B. heptagon C. octagon D. nonagon

31. The number of sides of a regular polygon whose each exterior angle has a measure of 30° []
 A.8 B.12 C.7 D.6
32. Adjacent angles of a parallelogram are $2x$ and $3x$. Which are the angles? []
 A. 72° and 108° B. 36° and 72° C. 144° and 216° D. 72° and 180° .
33. The opposite angles of a parallelogram are []
 A. supplementary B. complementary C. equal D. unequal.
34. Find the range of first five prime numbers. []
 A. 2 B. 7 C. 9 D. 11
35. For the class interval 15-20, what is the class width. []
 A. 6 B. 5 C. 4 D. 2
36. The no of tallies with respect to a choice is IIII IIII III . Find the frequency of the choice. []
 A.10 B.11 C.12 D.13
37. What is the lower limit of the class interval 10-20. []
 A. 20 B. 10 C. 15 D. 5
38. Add $ab-bc+cd$ and $2ab-2bc-cd$ []
 A. $ab+2cd$ B. $3ab+bc$ C. $3ab-2bc$ D. $3ab-3bc$
39. Subtract $2x^3-x^2+4x+6$ from x^3+5x^2-4x+6 []
 A. x^3+6x^2-8x B. $-8x+6x^2-x^3$ C. $12+4x^2+3x^3$ D. $3x^3+6x^2-8x$
40. Find the product of $5a^2b$, $-3b^2c$, $-4ac^2$ []
 A. $100abc$ B. $60ab^2c$ C. $60a^2b^2c^2$ D. $60a^3b^3c^3$
41. Write the polynomial $4x-6x^2+3-8x^3$ in standard form. []
 A. $-8x^3-6x^2+4x+3$ B. $3+4x-6x^2-8x^3$ C. 3 D. $3+4x-6x^2+x^3$
42. Find the product of b^2 , b , $4b$, $6b^0$ []
 A. $6b$ B. $4b$ C. $24b$ D.1
43. What is the numerical coefficient in the product of $3a^2b$ and $-4ab^2c$ []
 A. a^3b^3c B. a,b,c C. 3,-4 D. -12 (e) 12
44. The volume of a cube whose edge is $6a$ is []
 A. $36a^3$ B. $216 a^3$ C. $170 a^3$ D. $216 a^6$
45. An oil tin measures $20\text{cm} \times 30\text{cm} \times 40\text{cm}$. If 1 square meter of tin costs Rs 25, the cost of 10 such tins will be []
 A. Rs 13 B. Rs 6 C. Rs 130 D. Rs 60
46. If the surface area of a cube is 150 sq.cm . then its volume will be []
 A. 5cm^3 B. 25cm^3 C. 30 cm^3 D. 125cm^3
47. The volume of a cuboid whose length, breadth and height are in the ratio 3:1:2 is []
 A. $l \times b$ B. $6b^3$ C. $8 l^3$ D. $8 b^3$
48. The total surface area of a cylinder whose height is twice the radius is []
 A. $6\pi r^2$ B. $8\pi^2 r$ C. $36\pi^2 r$ D. $81\pi r^2$

49. The radius of a roller is 35cm. length of the roller is 2m. How much area will the roller cover in 50 revolutions []
 A. 3850005cm² B. 220 m² C. 200 m² D. 7700 cm²
50. The length of cuboid is 4 times its breadth and the height is half of length if breadth is 6cm then volume is []
 A. 8b³ B. (16 /3) b³ C. 16/3b³ D. 8/b³
51. The coefficient of x in -17xyz is []
 A. 17 B. -17 C. -17y D. -17yz
52. An example for trinomial is []
 A. 3xy+3z B. 3x³ y³ z³ C. x³ D. x+y+z
53. On subtracting 5x² -4y² +6y from 7x² -4y² +4y +3 we get []
 A. 12x²-8y²+10y+3 B. 2x²-2y+3 C. 2x²-2y D. -2x²+2y-3
54. The length, breadth and height of a rectangular box are m²n, np², pm respectively. Its volume is []
 A. m²n+np²+pm B. m³n³p³ C. 3mnp D. m³n²p³
55. A monomial multiplied by a monomial always gives []
 A. monomial B. binomial C. trinomial D. a constant
56. 3x²yz and 9[x/3]²yz are []
 A. binomials B. trinomials C. like terms D. unlike terms
57. The numerical coefficient of (-m) x (17n) x (-2) is []
 A. 34 B. -34 C. -2 D. -17
58. The square root of 9801 is []
 A. 91 B. 93 C. 89 D. 99
59. The square root of []
 A. 4 B. 10 C. 1 D. 2
60. √0.81 x √0.25 x √100 = []
 A. 4.5 B. 0.45 C. 0.045 D. 45

Answer Key

1. B 2. C 3. A 4. B 5. A 6. B 7. B 8. C 9. A 10. B 11. B 12. B 13. A 14. C 15. C 16. B 17. C 18. D 19. D 20. B 21. B 21. D 22. A 23. D 24. C 25. A 26. B 27. B 28. C 29. A 30. B 31. A 32. C 33. A 34. B 35. D 36. B 37. D 38. B 39. D 40. A 41. C 42. D 43. B 44. C 45. D 46. B 47. A 48. B 49. A 50. D 51. D 53. B 54 55. A 56. C 57. A 58. D 59. D 60. A