

SAINIK SCHOOL ENTRANCE EXAMINATION :

Paper I—Mathematics and Science

Class - IX

NMA + NSC

Time : 2½ Hrs.

Max. Marks : 275

Name in full

Roll No.

Initials of Invigilator

Code No.
(To be filled by the Office)



ENTRANCE EXAM :

MATHEMATICS AND SCIENCE : CLASS IX

NOTE :—Candidate is NOT to write his Name or Roll Number on the Main Answer Book.

Marks obtained

A		B	
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Code No.

Full Signature of Examiner

Checked by

INSTRUCTIONS

PART—A

1. This paper contains 50 questions : questions 1 to 20 carry 2 marks each, questions 21 to 40 carry 3 marks each and questions 41 to 50 carry 10 marks each.
2. Minimum qualifying marks are 25%.

PART—B

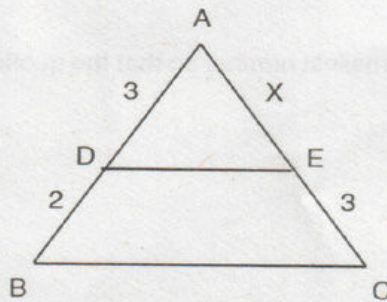
1. It contains 43 questions : 1 to 35 carry one mark each and 36 to 43 carry 5 marks each.

Choose the correct answer from the given alternatives :

1. The square root of 1000000 is :
(a) 100 (b) 10 (c) 1000 (d) 10000
2. The square root of 16.81 is :
(a) 4.9 (b) 4.1 (c) 4 (d) 2.9
3. The cube root of 74088 is :
(a) 42 (b) 44 (c) 48 (d) 52
4. The cube root of -17576 is :
(a) 26 (b) -36 (c) 36 (d) -26
5. The cube root of $\left(\frac{27}{-4096}\right)$ is :
(a) $\frac{-3}{16}$ (b) $\frac{3}{16}$ (c) $\frac{7}{14}$ (d) $\frac{-7}{14}$
6. Value of $(343)^{\frac{2}{3}}$ is :
(a) 31 (b) 29 (c) 49 (d) 39
7. The value of $(8^2 + 15^2)^{\frac{1}{2}}$ is :
(a) 23 (b) 17 (c) 27 (d) 7
8. The only perfect cube number between 50 and 100 is :
(a) 55 (b) 54 (c) 75 (d) 64
9. Which one of the following is Pythagorean triplet :
(a) (1,2,3) (b) (2,3,4) (c) (3,4,5) (d) (4,5,6)
10. If the area of a square is 1600 m^2 its each side is :
(a) 400 m (b) 200 m (c) 40 m (d) 20 m
11. The value of 102×106 is :
(a) 1012 (b) 10182 (c) 1812 (d) 1086
12. Factors of $x^2 + 9x + 20$ are :
(a) $(x + 4)(x + 5)$ (b) $(x - 4)(x - 5)$ (c) $(x + 9)(x + 20)$ (d) $(x + 10)(x + 2)$
13. Product of $(1 - x)(1 + x + x^2)$ is :
(a) $1 + x^3$ (b) $x^3 - 1$ (c) $1 - x^2$ (d) $1 - x^3$
14. Solution of equation $\frac{2x - 3}{3x + 2} = \frac{-2}{3}$ is :
(a) $\frac{5}{12}$ (b) $\frac{12}{5}$ (c) $\frac{-5}{12}$ (d) $\frac{-12}{5}$

15. A polygon having 5 sides is known as :
 (a) Octagon (b) Pentagon (c) Hexagon (d) Rhombus
16. A line through the mid points of two sides of a triangle is :
 (a) Perpendicular to the third side (b) Parallel to the third side
 (c) Coincide with the third side (d) None of these
17. If d_1 and d_2 are the lengths of the two diagonals of a rhombus then its area is :
 (a) $d_1 + d_2$ (b) $d_1 \times d_2$ (c) $\frac{1}{2} \times d_1 \times d_2$ (d) $\sqrt{d_1 \times d_2}$
18. In a cyclic quadrilateral opposite pairs of angles are :
 (a) Complementary (b) Supplementary (c) Equal (d) None of these
19. The degree measures of an angle inscribed in a semi-circle is :
 (a) 60° (b) 180° (c) 90° (d) 360°
20. Area of the surface of a sphere of radius r is :
 (a) $2\pi r$ (b) $\frac{4}{3}\pi r^3$ (c) $4\pi r^2$ (d) $4\pi r^3$
21. A regular polygon is inscribed in a circle. If a side subtends an angle of 30° at the centre, the number of the sides are :
 (a) 6 (b) 10 (c) 12 (d) 8
22. The square root of $21\frac{5}{169}$ is :
 (a) $4\frac{8}{13}$ (b) $5\frac{8}{13}$ (c) $3\frac{8}{13}$ (d) $2\frac{8}{13}$
23. The cube root of $(-125) \times (-3375)$ is :
 (a) 25 (b) -25 (c) 75 (d) -75
24. The volume of a cubical box is 32.768 Cum. Length of its each side is :
 (a) 6.2 m (b) 3.2 m (c) 4.2 m (d) 16.2 m
25. The value of $(1^3 + 2^3 + 3^3)^2$ is :
 (a) 4 (b) 8 (c) 18 (d) 6
26. Product of $(a + b)$ and $(a - b)$ is :
 (a) $a^2 + b^2$ (b) $a^2 - b^2$ (c) $2a - 2b$ (d) $2a + 2b$
27. The value of $(505)^3$ is :
 (a) 128787625 (b) 1010625 (c) 1515625 (d) 12625
28. The sum of two numbers is 45 and their ratio is 7 : 8 the numbers are :
 (a) 21, 24 (b) 22, 23 (c) 20, 25 (d) 15, 30

29. The amount of Rs. 1000 in one year at 2% per annum compounded half-yearly is :
(a) Rs. 1020.10 (b) Rs. 1020 (c) Rs. 1030.10 (d) Rs. 1010.10
30. The parallel sides of a trapezium are 15 meter and 18 meter. The distance between them is 12 m. Area of the trapezium is :
(a) 130 m^2 (b) 198 m^2 (c) 132 m^2 (d) 138 m^2
31. A triangle has sides 17 m, 25 m and 26 m. Its area is :
(a) 102 m^2 (b) 204 m^2 (c) 304 m^2 (d) 68 m^2
32. The circumference of a circle is 44 m. Its diameter is :
(a) 7 m (b) 14 m (c) 22 m (d) 28 m
33. The radius of a circle is 3.5 cm. The area of a sector of this circle with angle 120° is :
(a) $\frac{70}{6} \text{ cm}^2$ (b) $\frac{77}{6} \text{ cm}^2$ (c) $\frac{80}{6} \text{ cm}^2$ (d) 105 cm^2
34. If the radius of a right circular cylinder is 7 cm and altitude is 15 cm then its volume is :
(a) 2100 cm^3 (b) 2310 cm^3 (c) 2210 cm^3 (d) 2130 cm^3
35. The diameter of a sphere is 14 cm then its volume is :
(a) 1427.33 cm^3 (b) 1437.33 cm^3 (c) 1417.33 cm^3 (d) 1433.17 cm^3
36. If lines l and m are both parallel to line n then l and m are :
(a) Parallel to each other (b) Perpendicular to each other
(c) Intersecting each other (d) None of these
37. In the given figure DE || BC the value of x is :



- (a) 3.5 (b) 2.5 (c) 4.5 (d) 5.5

43. Calculate : $4 \times 81^{\frac{1}{2}} \times \left(81^{\frac{1}{2}} + 81^{\frac{3}{2}} \right)$

44. Find the value of $a^3 + 8b^3$, if $a + 2b = 10$ and $ab = 15$

45. Using division state whether $3y^2 + 5$ is a factor of :

$$6y^5 + 15y^4 + 16y^3 + 4y^2 + 10y - 35$$