

NEWGEN SEARCH OLYMPIAD TALENT TEST

NEWGEN SCHOLARS - THE SCIENCE OLYMPIAD

Class: 8

Name:

Time:90mins

MATHEMATICS

I. Choose the correct answers :

1. $2 < \frac{17}{8} < \frac{8}{4} < k < 3$, $k = \dots\dots$

(A) $\frac{1}{7}$

(B) $\frac{1}{2}$

(C) $\frac{2}{5}$

(D) $\frac{5}{2}$

2. $\left(\frac{1}{-8}\right)^{-1} = \dots\dots$

(A) 4

(B) 1

(C) 8

(D) -8

3. The multiplicative inverse of $\frac{-2}{7} \times \frac{-17}{15}$ is

(A) $\frac{105}{34}$

(B) $\frac{15}{34}$

(C) $\frac{115}{27}$

(D) $\frac{105}{3}$

4. $\frac{4}{5}$ th of 1 hour =minutes.

(A) 48

(B) 84

(C) 42

(D) 13

5. A rational number between a and b is

(A) $\left(\frac{a+b}{2}\right)$

(B) ab

(C) \sqrt{ab}

(D) $\frac{b}{2} - a$

6. If $\frac{1}{2}p = \frac{1}{2}$ than p

(A) $\frac{1}{4}$

(B) -1

(C) 1

(D) 0

7. $0.3x + 0.4 = 0.28x + 1.16$, $x = \dots\dots$

(A) 10

(B) 38

(C) 19

(D) 29

8. The sum of first 50 natural numbers is

(A) 125

(B) 25

(C) 1275

(D) 2550

9. $\frac{x-4}{7} = 7-7$, $x = \dots\dots$

(A) 4

(B) 6

(C) -14

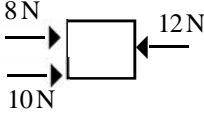
(D) -3

10. Angles like 0° , 30° , 45° , 60° , 90° , 120° and 120° are called angles.
 (A) Dependent (B) Standard (C) Equal (D) Perpendicular
11. Area of rectangle is
 (A) $l+b$ (B) $2(l+b)$ (C) l^2b^2 (D) lb
12. $(4^0+5^{-1}) \times 5^2 \times \frac{1}{3} = \dots\dots$
 (A) -10 (B) 10 (C) $\frac{1}{10}$ (D) -3
13. Profit percentage
 (A) $\frac{\text{Profit}}{\text{loss}} \times 100$ (B) $\frac{\text{Profit}}{\text{cp}} \times 100$ (C) $\frac{\text{Profit}}{100}$ (D) None
14. $\left(\left(\frac{1}{4}\right)^2\right)^3 = \dots\dots$
 (A) $\frac{1}{3092}$ (B) $\frac{1}{6096}$ (C) $\frac{1}{3096}$ (D) $\frac{1}{4096}$
15. $(64)^{0.5} = \dots\dots$
 (A) -4 (B) -8 (C) 8 (D) $\frac{1}{8}$
16. $(x^{-1} + y^{-1})xy = \dots\dots$
 (A) xy (B) $x+y$ (C) $x-y$ (D) $\frac{x}{y}$
17. $4\sqrt{81} - 8x3\sqrt{216} + 155\sqrt{32} + \sqrt{225}$
 (A) 3 (B) 2 (C) 0 (D) 1
18. The C.I. (compound Interest) on Rs. 5000 at the rate of 8% for 2 years is
 (A) Rs. 832 (B) Rs. 238 (C) Rs. 161 (D) Rs. 169
19. $2^n = 2$, then $2^{n+3} = \dots\dots$
 (A) 23 (B) 19 (C) 10 (D) 16
20. Simple interest $I = \dots\dots$
 (A) $\frac{100}{\text{PTR}}$ (B) $\frac{\text{P.T.R}}{100}$ (C) $\frac{100}{\text{PTR}}$ (D) $\frac{\text{P}}{100\text{T}}$
21. $66\frac{2}{3}\% = \dots\dots$
 (A) 2:3 (B) 3:2 (C) 1:4 (D) 4:1
22. At 12% rate for 3 years how much amount will become Rs. 4590 ?
 (A) 3375 Rupees (B) 2375 Rupees (C) 1475 Rupees (D) 1290 Rupees
23. Which of the following are central tendency measure ?
 (A) A.M. (B) Median (C) Mode (D) All of these
24. If n is odd then median =
 (A) $\frac{n+1}{2}$ (B) $\frac{n}{2}$ (C) $\frac{n-1}{2}$ (D) $\frac{n}{2} + 1$
25. Maximum value - minimum value =
 (A) Range (B) Curve (C) Axis (D) Limit

26. Mean of $x, \frac{1}{x}$ is m then the mean of $x^3, \frac{1}{x^3}$ is
- (A) $m(4m^2 - c)$ (B) m^3+3 (C) m (D) $3m$
27. Mid value of class 60 - 100 is.....
- (A) 120 (B) 100 (C) 30 (D) 80
28. Rotation is a
- (A) Expression (B) Change (C) Definite (D) Square
29. Number of lines of symmetry for letter W is
- (A) 9 (B) 1 (C) 3 (D) 2
30. Perimeter of semicircle is
- (A) $f r^2$ (B) $\frac{f}{r}$ (C) $f + r$ (D) $f r$
31. Central angle of circle is
- (A) 160 (B) 300 (C) 360° (D) 180°
32. $3x^2y \times 4xy^2 \times 7x^3y^3 = \dots$
- (A) $84x^6y^6$ (B) $48y^6$ (C) $41yx^6$ (D) $40x^6y^6$
33. Inverse ratio of 5:6 is
- (A) 1:5 (B) 6:5 (C) 5:6 (D) 6:1
34. $x:6 :: 5:3$ then $x = \dots$
- (A) 9 (B) 3 (C) 19 (D) 10
35. $9x^2 - y^2 = \dots$
- (A) $(3x+y)(3x-y)$ (B) $(3x-1)(3x-y)$
 (C) $(3x-y)(3x-3)$ (D) None
36. $(11)^3 = \dots$
- (A) 1221 (B) 1331 (C) 1441 (D) 1113
37. $x^2 - 2 + \frac{1}{x^2} = \dots$
- (A) $\left(x - \frac{1}{x^2}\right)^2$ (B) $\left(\frac{1}{x} - 3\right)^2$ (C) $\left(3x - \frac{1}{x}\right)^2$ (D) None
38. Euler's formula for polyhedra
- (A) $E+F = V + 2$ (B) $E+V = F + 2$ (C) $\frac{E+X+2=F+V}{E+2 = F + V}$ (D) None
39. $(x+8)^2 = x^2 + \square + 64$
- (A) $6x$ (B) $4x$ (C) $16x$ (D) $\frac{x}{4}$
40. T.S.A. of a cube is
- (A) $4a^2$ (B) $6a^2$ (C) $2(lb + bh+hl)$ (D) $2h(l+b)$
41. 1cu.cm. =
- (A) 10mm^3 (B) 100mm^3 (C) 1000mm^3 (D) None
42. Volume of a cuboid (v) =
- (A) $\frac{lb}{h}$ (B) l.b.h. (C) s^3 (D) $\frac{lh}{b}$

43. Diagonal of a cube is
- (A) $a\sqrt{3}$ (B) $\frac{a\sqrt{3}}{a}$ (C) $3a$ (D) $\frac{a}{\sqrt{3}}$
44. The prime factorisation of 72 is
- (A) $2^3 \times 3^2$ (B) $3^3 \times 2$ (C) 3×9^2 (D) 8×16^2
45. $81^2 \cdot 3^8 = \dots\dots\dots$
- (A) 81 (B) 16 (C) 0 (D) 19
46. Area of Rhombus is.....
- (A) $\frac{1}{2}d_1d_2$ (B) $\frac{d_1d_2}{4}$ (C) $\frac{1}{2}d_1\frac{d_2}{3}$ (D) $d_1^2d_2^2$
47. 1 hectare =m²
- (A) 10,000 (B) 2,000 (C) 3,000 (D) 1,000
48. How many cube numbers are there between 1 to 100.
- (A) 9 (B) 10 (C) 6 (D) 03
49. $3\sqrt{64} = \dots\dots\dots$
- (A) 9 (B) 116 (C) 10 (D) 4
50. $\sqrt{2\frac{14}{25}} = \dots\dots\dots$
- (A) $\frac{8}{7}$ (B) $\frac{8}{5}$ (C) $\frac{5}{8}$ (D) $\frac{1}{3}$

GENERAL SCIENCE

51. Let the forces F_1 and F_2 act on the table in opposite directions $F_1 > F_2$, the $F_{net} =$
- A) $F_1 - F_2$ (B) $F_1 + F_2$ (C) 0 (D) $2F_2 - F_1$
52. Find the net force.
- 
- A) 6N (B) 30 N (C) 10 N (D) 14 N
53. Erasing a black board with duster is related to
- A) Push (B) Pull (C) Push & Pull (D) Pressure
54. Friction is independent of
- A) Pressure (B) Direction of motion
C) Area of contact (D) Roughness
55. Which of the following friction has self adjusting force
- A) Sliding friction (B) Static friction (C) Rolling friction (D) Fluid friction
56. Which of the following is called as fake fur
- A) Nylon (B) Rayon (C) Xcrylic (D) Polyester
57. Who is the creator of plastic
- A) Alexander parkes (B) Alexander fleming
C) Herman standinger (D) None of these
58. Labels on clothes are used because _____
- A) Required by law (B) To identify fabric content
C) They donot decompose
59. Rayon is prepared by _____
- A) Coal (B) Oxygen (C) Fibre (D) Cellulose

60. Maximum metals are obtained in ___ state
 A) Liquid B) Solid C) Gaseous D) Plasma
61. Sulphur dioxide is a _____
 A) Basic oxide B) Acidic oxide C) Neutral oxide D) Dual neutral oxide
62. Some metals react with acids to evolve ___ gas
 A) Hydrogen B) Oxygen C) Carbon dioxide D) Nitrogen
63. The eardrum has the surface area ___ of the eardrum
 A) 1/10 B) 2/10 C) 2/20 D) 1/20
64. The shrillness of a sound is known as
 A) Pitch B) Vibration C) Intensity D) Decibel
65. The number of vibrations produced per second is known as
 A) Frequency B) Shrillness C) vibration limit D) Decibels
66. Angle of incidence = Angle of reflection. This rule is explained by
 A) Fermat B) Newton C) Archimedes D) Pascal
67. Which of the following letter doesn't suffer lateral inversion
 A) C B) O C) B D) N
68. Which law states that light chooses the shortest path
 A) Fermat B) Newton C) Archimedes D) Snell
69. Which of the following is less polluting fuel
 A) Natural gas B) Coal gas C) Kerosene D) Petrol
70. Which of the following is called liquid gold
 A) Coal B) Petroleum C) Charcoal D) Natural gas
71. The units of calorific value is _____
 A) Newton/grams B) Newton/kg C) Kilojoules/kg D) Kilojoules/gram
72. In which zone of the candle flame, vaporized wax burns completely.
 A) Outermost zone B) Middle zone C) Dark zone D) Blue zone
73. Electroplating is possible through
 A) Electrolysis B) Chemical process C) Dissolving D) Filtration
74. Pure water is a
 A) Electric conductor B) Semi conductor C) Insulator D) Resistor
75. One of the following is not an electrolyte
 A) Sulphuric acid B) Lemon juice C) Tamarind juice D) Detergent solution
76. The instrument used to measure the intensity of earthquake
 A) Seismograph B) Seismoscope C) Gold leaf electroscope
 D) Lightning conductors.
77. Which are called static charges
 A) Electric charges B) Magnetic charges C) Ionic charges D) None of these
78. Moon is _____ to earth
 A) Natural satellite B) Artificial satellite C) Comet D) Asteroid
79. _____ was the first Indian artificial satellite
 A) Insat B) Kalpana-I C) Aryabhata D) Edusat
80. The distance from the earth to moon is
 A) 3,84,399 km B) 3,64,399 km C) 3,84,299 km D) 3,64,299 km
81. This is the study of living organisms
 A) Botany B) Biology C) Zoology D) Anatomy
82. Which part of the cell contains cell organelles
 A) Nucleoplasm B) Cytoplasm C) Cell membrane D) Cell wall
83. One of them is a common vector
 A) Housefly B) Butterfly C) Mosquito D) Worms
84. One of the following is a chronic disease
 A) Elephantiasis B) Common cold C) Diarrhoea D) Pneumonia

85. The water suitable for drinking is called
 A) Soft water B) Hard water C) Potable water D) Green water
86. Decay of organic matter lying under water releases
 A) Methane B) Ammonia C) Carbonmonoxide D) Argon
87. We get maximum milk production from
 A) Cows B) Boyyaloos C) Camel D) Argon
88. Agar-agar is obtained from
 A) Prawns B) Fishes C) Lobustres D) Sea weeds
89. Long term crops require minimum of
 A) 120 days B) 100 days C) 180 days D) 150 days
90. Which type of crop requires moll water
 A) Wheat B) Paddy C) Cotton D) Groundnet
91. One of them is abiotic component of ecosqstem
 A) Algae B) Fungi C) Sunlight D) None of the above
92. How many trees are needed to prepare one ton of paper
 A) 17 B) 20 C) 10 D) 15
93. One of the following is a Endemic-species
 A) Lion B) Tiger C) Kiwi D) Elephant
94. Which period is called Adolescence
 A) 15-21 B) 16-23 C) 13-19 D) 14-20
95. One of the following is a Junk food
 A) Rote B) Chips C) Biscuits D) Milk
96. Fusion of ovum and sperm is called
 A) Copulation B) Budding C) Gemmule D) Fertilization
97. Pasteurisation is a process
 A) To presence fish B) To presence fruits
 C) to presence milk D) To presence Alcohol
98. Type of micro organisms all responsible in digestion
 A) Algae B) Fungi C) Bacteria D) Virus
99. Microbiology was burn in the year
 A) 1674 B) 1764 C) 1680 D) 1690
100. One of them is a decomposer
 A) Euglena B) Bacteria C) Virus D) Fungi