

NEWGEN SEARCH OLYMPIAD TALENT TEST

NEWGEN SCHOLARS - THE SCIENCE OLYMPIAD

Class: 9

Name:

Time:90mins

MATHEMATICS

I. Choose the correct answers :

- The decimal form of $\frac{1}{18}$ is
(A) $0.0\bar{5}$ (B) $0.0\bar{5}$ (C) $0.\bar{5}$ (D) 0.06
- $(7 + \sqrt{2})(7 - \sqrt{2}) = \dots\dots\dots$
(A) 45 (B) 5 (C) 3 (D) 47
- $a^{1/n}$
(A) $\sqrt[n]{a}$ (B) $\frac{a}{n}$ (C) na (D) n+a
- A polynomial with two terms is called
(A) Monomial (B) Binomial (C) Trinomial (D) Multinomial
- The value of $5x^2 + 6x + 7$ at $x = -1$
(A) 18 (B) -6 (C) 6 (D) 0
- Formula to find mean for a grouped data is
(A) $A + \frac{\sum fidi}{fi}$ (B) $A + \frac{\sum fidi}{C}$ (C) $A + \frac{\sum fidi}{fi}$ (D) None
- One of the factors of $a^3 - 3a^2b + 3ab^2 - b^3$ is....
(A) -3ab (B) 3ab (C) a+b (D) a-b
- If $a+b+c=0$, then $a^3+b^3+c^3 = \dots\dots$
(A) 0 (B) 3abc (C) $3(a+b+c)$ (D) $3(a+b)(b+c)(c+a)$
- Which of the following is an undefined term ?
(A) Point (B) Right angle (C) Triangle (D) Circle
- The author of "the elements".
(A) Pythagoras (B) Thales (C) Eulid (D) Plato
- Statements which are self evident.
(A) Theorems (B) Conjectures (C) Axioms (D) Riders
- A ray hasend points.
(A) 1 (B) 2 (C) 3 (D) Zero
- The pair of angles 35° and 55° are called
(A) supplementary (B) Complementary (C) Right (D) linear pair
- The vertical cross - section of a cone is
(A) triangle (B) circle (C) isosceles triangle (D) right angled triangle
- If $x > 0, y > 0$, then $(-x, y)$ lies
(A) Q_1 (B) Q_2 (C) Q_3 (D) Q_4
- Formula to find the height of a cone is
(A) $l = h^2 + r^2$ (B) $l^2 = h + r_1^2$ (C) $l = \sqrt{r^2 + h^2}$ (D) $l = h + r$

17. Equation of a line parallel to Y-axis is
 (A) $x=8$ (B) $x=0$ (C) $y=0$ (D) $y=-5$
18. Equation of x-axis is
 (A) $x=2$ (B) $x=-2$ (C) $y=0$ (D) $y=1$
19. The number of solutions of $7x-3y-15=0$ is.....
 (A) 2 (B) 1 (C) Infinite (D) 3
20. Comparing $5x-6y = 10$ with $ax + by+c = 0$ value of c is
 (A) 5 (B) 6 (C) 10 (D) -10
21. Which measurement is required to make a triangle along with sides 4cm and 6cm ?
 (A) 1cm (B) 2cm (C) 3cm (D) 1.5cm
22. Diagonals are equal in a
 (A) Rhombus (B) Quadrilateral (C) Rectangle (D) Parallelogram
23. In the parallelogram PQRS, $\angle P = 40^\circ$, then $\angle R = ?$
 (A) 40° (B) 50° (C) 140° (D) 80°
24. Getting a 'head' when an unbiased coin is tossed is.....
 (A) Less likely (B) Equally likely (C) More likely (D) certain
25. If two coins are tossed, the chance of getting no heads is ...
 (A) 1 (B) 2 (C) 3 (D) 4
26. The boundaries of a solid are called
 (A) 5 (B) 6 (C) 10 (D) -10
27. The probability of an event which is certain..
 (A) 0 (B) 1 (C) -1 (D) Can't say
28. Angles in same circle segment are
 (A) Complementary (B) Supplementary (C) Equal (D) unequal
29. The word geometry is derived from
 (A) greek (B) latin (C) English (D) Sanskrit
30. If in $\triangle ABC$ \overline{BX} and \overline{CY} are bisectors to the box angles then $\angle BXC$
 (A) $\left(90 + \frac{1}{2}\angle A\right)$ (B) $\left(90 - \frac{1}{2}\angle A\right)$ (C) $\left(180 - \frac{1}{2}\angle A\right)$ (D) None
31. Angle in the major segment of a circle is
 (A) Obtuse (B) Right angle (C) Straight angle (D) Acute angle
32. A diameter divides the circle into two
 (A) unequal segment (B) equal segment (C) can't say (D) None
33. The perpendicular from the centre of a circle to a chord.
 (A) Bisects it (B) Equal to it (C) Trisects it (D) None
34. A polygon can be divided intoregions
 (A) square (B) rectangular (C) circular (D) Triangular

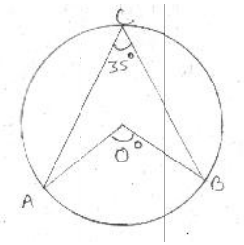
35. In the given figure, CO is the centre of the circle. If $\angle ACB = 35^\circ$

(A) $\frac{1}{2}\angle ACB$

(B) $3\angle ACB$

(C) 55°

(D) $2\angle ACB$



36. Pyramids are found in

(A) China

(B) Egypt

(C) India

(D) Japan

37. Area of parallelogram is

(A) Base x Altitude

(B) $\frac{1}{2}$ x base x height

(C) Product of the diagonals

(D) Half of the product of the diagonals

38. Area of a rhombus with diagonals 6cm and 10cm is

(A) 60cm^2

(B) 30cm^2

(C) 16cm^2

(D) 15m^2

39. ABCD is a trapezium in which $AB \parallel CD$. If $AB = 6.5\text{cm}$, $CD = 3.5\text{cm}$ and $DE = 2\text{cm}$, then its area is

(A) 13cm^2

(B) 7cm^2

(C) 20cm^2

(D) 10m^2

40. Which of the following is a 3D object ?

(A) Rectangle

(B) Circle

(C) square

(D) Cylinder

41. Surface area of a sphere is ...

(A) $4f r^2$

(B) $3f r^2$

(C) $2f r^2$

(D) $5f r^2$

42. CSA of a cone is

(A) $\frac{1}{3}f r^2 h$

(B) $f r^2 h$

(C) $f r^2 h$

(D) $f r l$

43. The expansion of $(5x-1)^2$ is

(A) $25x^2 - 5x + 1$

(B) $25x^2 - 10x + 1$

(C) $25x^2 - 10x - 1$

(D) $25x^2 + 10x + 1$

44. A(2,5) and B(3,7) are points in a graph sheet. The ordinate of B is more than that of A by

(A) 1

(B) 2

(C) 3

(D) 4

45. If 2 is a zero of the polynomial $x^2 - kx + 8$, then $k = ?$

(A) 1

(B) 4

(C) 6

(D) 3

46. $101^2 = \dots\dots\dots ?$

(A) 12001

(B) 10001

(C) 10201

(D) 100201

47. $(t - 1)(t - 1) = \dots\dots\dots$

(A) $t^2 + 1$

(B) $t^2 - 2t + 1$

(C) $t^2 + 2t + 1$

(D) $t^2 - 1$

48. Whose value is 11.18 if $\sqrt{5} = 2.236$

(A) $\sqrt{25}$

(B) $\sqrt{75}$

(C) $\sqrt{125}$

(D) $\sqrt{250}$

49. The combination of Q and S given the set ofnumbers.

(A) natural

(B) Integers

(C) Whole

(D) Real

50. $\frac{3^{1/5}}{3^{1/3}} = \dots\dots\dots$

(A) $3^{1/15}$

(B) $3^{2/15}$

(C) $3^{-2/15}$

(D) $3^{8/15}$

GENERAL SCIENCE

51. Which of these is bulk phenomenon
 A) Evaporation B) Boiling C) Sublimation D) Fusion
52. Which of the following is available in three states
 A) Kerosine B) Water C) Camphor D) Iron
53. What is the displacement if the particle is moving in a circle
 A) $2r$ B) r^2 C) Zero D) 1
54. In there is change in the velocity then the motion is
 A) Speed B) Uniform Acceleration
 C) Uniform motion D) Non-Uniform motion
55. SI unit of momentum is
 A) m/sec. B) kg-m C) kg.m/sec D) kg.m/sec²
56. The inertia of a body depends on
 A) Shape B) Volume C) Mass D) Area
57. Which of the following states snells law
 A) $n_1 \sin r = n_2 \sin i$ B) $n_1 \sin i = n_2 \sin r$ C) $n_2 \sin I = n_1 \sin r$ D) None of these
58. If the angle of incidence is equal to critical angle, then the angle of Refraction is
 A) 0° B) 20° C) 90° D) 180°
59. The value of universal gravitational constant is
 A) $6.67 \times 10^{-11} \text{ N.m}^2\text{kg}^{-2}$ B) 9.8 m/sec^2
 C) $6.67 \times 10^{-12} \text{ N. M}^2 \text{ kg}^{-2}$ D) 981 m/sec^2
60. The distance between the earth and moon is
 A) 3,84,400 km B) 3,84,400 cm C) 84,000 km D) 86,000 km
61. $\text{Zn} + 2\text{Ag} \rightarrow \text{Zn}^{2+} + 2\text{Ag}$ The above reaction is an example of
 A) Combination reaction B) Decomposition reaction
 C) Displacement reaction D) Double decomposition reaction
62. Stainless steel is a mixture of
 A) Carbon, nickel & chromium B) Iron, earbon, nickel & drromium
 C) Iron, Zinc & nickel D) Iron, Zinc, copper, nickel
63. Units of relative density is
 A) g/cm³ B) cm/g³ C) N/m² D) No units
64. The hydraulic jacks which is used in automobile work shops, works on the Principle of
 A) Archimedis B) Pascal C) Jorecelli D) Suspension
65. The physical mixture of two substances is called
 A) Mixture B) Compund C) Coolrid D) Suspensions
66. The phenomenon of seattering of a visible light by the particles of colloid is known as
 A) Tyndall effect B) Chromotography C) Sublimation D) Reflection
67. Who gave the defination of element
 A) Humphry davy B) Robert boyle C) Lavoiser D) Henning Brand
68. Who discovered phosphorous
 A) Issac Newton B) Humphry Davy C) Henning brand D) Robert Boyle
69. Which process is used to seperate diesel with water
 A) Chromatography B) Separating funnel C) Distillation D) Fractional distillation
70. What is the value of Avagadro number
 A) 6.022×10^{23} B) 6.022×10^{24} C) 6.022×10^{25} D) 6.022×10^{22}

71. Who discovered neutron
 A) J.J.Thomson B) Faraday C) Chadwick D) Rutherford
72. Deuterium and Tritium are the Isotopes of
 A) Nitrogen B) Oxygen C) Hydrogen D) Helium
73. The gas which is stable without Octet configuration is
 A) Neon B) Argon C) Helium D) Krypton
74. A Person is climbing a ladder with a suitcase on his head. Then the Work done by that person on that suitcase is
 A) Positive B) Negative C) Zero D) Cannot be defined
75. S.I unit of work
 A) N-m B) kg.m C) N/m D) N.m²
76. The energy possessed by a body by virtue of its motion is called as.
 A) Potential energy B) Kinetic energy C) Attractive energy D) Gravitational energy
77. Specific heat $S =$
 A) Q/T B) QT C) Q/mt D) mt/Q
78. The temperature of a steel rod is 340K. Its temperature in $^{\circ}C$ is _
 A) $540^{\circ}C$ B) $670^{\circ}C$ C) $630^{\circ}C$ D) $530^{\circ}C$
79. Which animals use ultrasonic waves for communicating
 A) Blue whale B) Fish C) Rhinoceros D) Dolphin
80. The sound limit between the frequency of 20Hz-20000 Hz is called as
 A) Audible range B) Ultra sound range C) Low sound range D) Supersonics
81. Who proposed cell theory
 A) Schwann B) Virchow C) Robert brown D) Schleiden
82. The other name for cell fluid is
 A) Cytoplasm B) Protoplasm C) Water D) Vitamins
83. The factors that effect aquatic ecosystem are
 A) Salt content B) Oxygen C) Light and pressure D) Food
84. The flowers ovule produces
 A) Seeds B) Spores C) Both D) None
85. Warm blooded vertebrates are
 A) Aves B) Mammals C) Both D) None
86. Stomata are guarded by
 A) Roots B) Leaves C) Guard cells D) Ground tissue
87. The tissue in which cells are completely gruyed
 A) Sclerenchyma B) Collenchyma C) Parenchyma D) Aerenchyma
88. Reflexes are also type of
 A) Instinct B) Conditioning C) Imprinting D) Imitation
89. Eustachian tube is related to
 A) Ears B) Eyes C) Nose D) Skin
90. Cells are amoeboid in shape
 A) Platelets B) WBC C) RBC D) Blood plasma
91. What is the basic unit life
 A) Tissue B) Cell C) Chromosomes D) Ribosome
92. Water enter into the roots through
 A) Diffusion B) Reverse osmosis C) Osmosis D) All the above

93. The three domains of LUCA are
 A) Archaea B) Bacteria C) Eu D) All the above
94. Blind spot is located at the point
 A) Optic nerve B) Olfactory nerve C) Auditory nerve D) None
95. Deficiency of melanin leads to
 A) Leucoderms B) Pellagra C) Rickets D) None
96. Wasp builds its nest with
 A) Leaves B) Sticks C) Mud D) None
97. Ethology is a sub topic of
 A) Biology B) Physiology C) Zoology D) Aetology
98. The following is a macro nutrient
 A) Nitrogen B) Phosphorus C) Potassium D) All
99. Panchagayya is not made of
 A) Milk B) Curd C) Ghee D) Cow dung
100. Organic matter contains
 A) Organisms B) Roots C) Humans D) All the above
