

NATIONAL TALENT SEARCH EXAMINATION
(NTSE-2019) STAGE -1
STATE : MADHYA PRADESH, PAPER : SAT

Max. Marks : 100

Date : 04/11/2018

Time : 120 minutes

1. Conductivity of superconductors is:
(A) Infinite (B) Very large
(C) Very Small (D) Zero
2. The S.I. unit of magnetic field intensity is:
(A) Weber (B) Tesla
(C) Oerstead (D) Gauss
3. If the distance travelled by an object is zero, then the displacement of the object is:
(A) zero (B) not zero
(C) negative (D) May or may not be zero
4. Which of the following is non-conservative force?
(A) Electrostatics force (B) Gravitational force
(C) Viscous force (D) Spring force
5. Escape velocity of a particle from the earth is approximately.
(A) 7 km/s (B) 1.1 km/s
(C) 11.2 km/s (D) 112 km/s
6. When a satellite falls to an orbit of smaller radius its kinetic energy:
(A) decrease (B) increase
(C) remain same (D) none of these
7. How many times does a ray bend on passing through a prism?
(A) once (B) twice
(C) thrice (D) none
8. Waves inside a gas are ;
(A) longitudinal (B) transverse
(C) partly longitudinal partly transverse (D) none of these
9. Choose the source of energy which is different from others.
(A) Sun light (B) Falling water
(C) Wind (D) Petroleum
10. Which is called Earth's satellite?
(A) moon (B) sun
(C) venus (D) mars
11. Which is the colour at lower end of visible spectrum?
(A) red (B) green
(C) yellow (D) violet
12. How many planets have rings around them?
(A) 3 (B) 2
(C) 4 (D) 5
13. 1k Wh equal to:
(A) 3.6×10^4 J (B) 3.6×10^5 J
(C) 3.6×10^6 J (D) 3.6×10^7 J
14. Which one of the following will show Tyndall Effect.
(A) Solution of salt (B) Milk
(C) Solution of copper sulphate (D) None of the above

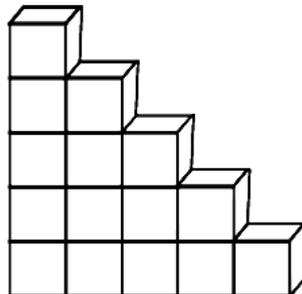
15. Which one of the following is solution.
(A) Soil (B) Aerosols
(C) Coal (D) Soda-water
16. Write chemical formula of Magnesium Chloride
(A) $MgCl_2$ (B) $CaCl_2$
(C) $Cu(NO_3)_2$ (D) $CaCO_3$
17. Isotopes of an element contains
(A) Similar physical properties (B) Different chemical properties
(C) Different no. of Neutrons (D) Different atomic number
18. Valency electron in Cl^- ions is
(A) 16 (B) 8
(C) 17 (D) 18
19. Which one of the following is correct electronic configuration of sodium.
(A) 2, 8 (B) 8, 2, 1
(C) 2, 1, 8 (D) 2, 8, 1
20. Physical state of water at $0^\circ C$ is
(A) Solid (B) Liquid
(C) Gas (D) None of the above
21. Solution is
(A) Homogeneous mixture (B) Heterogeneous mixture
(C) Colloidal (D) All of the above
22. Components present in air can be separated by
(A) Fractional distillation (B) Evaporation
(C) Boiling (D) None
23. Which one of the following is cation
(A) Na^+ (B) Cl^-
(C) H_2 (D) None of the above
24. Electron is invented by
(A) J.J. Thomson (B) Dalton
(C) Niels Bohr (D) None of the above
25. The maximum number of electrons in a shell can be show by
(A) $2n^2$ (B) $2n^3$
(C) $2n^2 + 1$ (D) None of the above
26. Distribution of electrons in carbon is as follow
(A) 2, 4 (B) 2, 2, 2
(C) 4, 2 (D) None of the above
27. All fungi are
(A) Parasites (B) Saprophytes
(C) Symbiont (D) Heterotrophs
28. An exception to cell theory is
(A) Bacteria (B) Virus
(C) Algae (D) All
29. Chemical composition of chromosome is
(A) DNA and lipid (B) DNA and carbohydrates
(C) Proteins and lipids (D) DNA and proteins

30. DNA replication (synthesis) occurs in
(A) G-phase (B) S-phase
(C) G2 phase (D) M phase
31. Bacteria 'easter's are
(A) Virus (B) Bacteria
(C) Fungi (D) Algae
32. Cristae is associated with
(A) Nucleus (B) Chloroplast
(C) Cell Wall (D) Mitochondria
33. Association of algae and fungi forms
(A) Mycorrhiza (B) Lichen
(C) Flower (D) Bio fertilizer
34. Energy flow in ecosystem is
(A) Tetra directional (B) Tri directional
(C) Bi-directional (D) Uni-directional
35. Absorption of water is associated with
(A) Root apex (B) Root hairs
(C) Bark of roots (D) All of these
36. Which gas is not responsible for global warming
(A) CO₂ (B) O₃
(C) NO₂ (D) N₂
37. Lipoprotein is found in
(A) Cell membrane (B) Nucleus
(C) Cytoplasm (D) Cell wall
38. Glycolysis place in
(A) Mitochondria (B) Cytoplasm
(C) Nucleus (D) Chloroplast
39. Amphibians of plant kingdoms are
(A) Bacteria (B) Gymnosperm
(C) Bryophyta (D) Algae
40. When ATP is converted in to ADP it releases
(A) Enzymes (B) Secretions
(C) Energy (D) Hormones
41. The Harappan towns and cities were divided into large blocks
(A) Square (B) Rectangular
(C) Circular (D) Semi-circular
42. The most famous centre of learning during the Mauryan period was
(A) Taxila (B) Ujjain
(C) Nalanda (D) Vallabhi
43. In which year of Ashok coronation did the Kalinga war take place
(A) Fifth year (B) First year
(C) Eighth year (D) Thirteenth year

44. Who built the stupa of Sanchi?
(A) Sariputra (B) Mahomogallana
(C) Mahinda (D) Ashok
45. The founder of Vijaynagar kingdom was
(A) Harihar I (B) Bukkaraya I
(C) Both (A) and (B) (D) Krishnadevraya
46. Taj Mahal is located
(A) In Agra (B) Fatehpur Sikri
(C) In Delhi (D) None of these
47. At where Britishers established the first factory in Bengal in 1651 A.D.
(A) Hugli (B) Murshidabad
(C) Kasim Bazar (D) Calcutta
48. Who is associated with the policy of Doctrine of Laps
(A) Lord Hastings (B) Lord Dalhousie
(C) Lord Wellesley (D) Lord Cornwallis
49. At which place was Tanya Tope hanged to death
(A) Jhansi (B) Kanpur
(C) Shivpuri (D) Sagar
50. Rani Laxmibai was also known as by which name
(A) Chhabili (B) Manu
(C) Manikarnika (D) All of the above
51. What was the real name of Swami Vivekanand
(A) Narendranath (B) Mula Shankar
(C) Gadadhar Chattopadhyaya (D) Mahes Das
52. Chandra Shekhar Azad was born on 23rd July 1806 at
(A) Jhabua (B) Bangagaon
(C) Gurudaspur (D) Gwalior
53. Who gave the title of Mahatma to Gandhiji
(A) Romain Rolland (B) Louis Fisher
(C) Ravindranath Tagore (D) Subhash Chandra Bose
54. The credit of merger of states in India goes to?
(A) Jawahar Lal Nehru (B) Sardar Patel
(C) Fazal Ali (D) Mahatma Gandhi
55. When was the constitution of India adopted
(A) 9 December 1946 (B) 16 August 1947
(C) 26 November 1949 (D) 26 January 1950
56. The resources are those things which
(A) Satisfy human needs (B) Full fill some specific objective
(C) Are needed for the human welfare (D) All the above
57. Meaning of Resource conservation is:
(A) No use of resources (B) To keep resources reserved
(C) Prevent misuse of resources (D) Balanced use of resources
58. The major natural hazard of India is
(A) Drought (B) Flood
(C) Earthquake (D) Volcano

59. Kagiranga National Park is located in-
(A) Uttar Pradesh (B) Assam
(C) Rajasthan (D) Orissa
60. Suitable soil for cotton production is
(A) Alluvial soil (B) Black soil
(C) Red soil (D) Laterite soil
61. Father of Green revolution is
(A) Dr. Bennett (B) Billcox
(C) Norman Borlaug (D) Nixon
62. Yellow revolution is related to
(A) Oilseeds production (B) Fruits production
(C) Sheep production (D) Fish production
63. Kharif crops are
(A) Rice, Millet, Maize (B) Wheat, Gram, Jow
(C) Jute, Tea, Coffee (D) Tobacco, Rubber, Linseed
64. Metallic Mineral is-
(A) Iron (B) Diamond
(C) Mica (D) Coal
65. Which type is not included in iron-ore
(A) Hematite (B) Magnetite
(C) Limonite (D) Lignite
66. Which is not a part of Public Distribution System.
(A) Proper value shop (B) Co-operative customer storage
(C) Super market (D) Buffer stock
67. First rank of Diamond Production in India.
(A) Madhya Pradesh (B) Bihar
(C) Uttar Pradesh (D) Orissa
68. Tarapur is famous for
(A) Nuclear electricity (B) Solar energy
(C) Hydro electricity (D) Wind energy
69. The manchester of cotton textile in South India is called-
(A) Secunderabad (B) Coimbatore
(C) Thiruvananthapuram (D) Guntur
70. Which is the cheapest means of transport-
(A) Air transport (B) Water transport
(C) Rail transport (D) Road transport
71. Which country's parliament is treated as the mother of world parliament.
(A) America (B) Britain
(C) India (D) Switzerland
72. Who protects the constitution-
(A) Judiciary (B) Legislature
(C) Executive (D) Finance Commission
73. From which country did we adopt fundamental rights?
(A) England (B) China
(C) U.S.A. (D) Ireland

74. How long can an ordinance remain in force?
 (A) Three months (B) Four months
 (C) Five months (D) Six months
75. The quorum requirement to the Rajya Sabha-
 (A) 25 (B) 50
 (C) 75 (D) 100
76. The main function of the Foreign Exchange bank is:
 (A) Receiving the deposits (B) Advancing loans
 (C) Exchange of money (D) All above
77. Agmark security icon is:
 (A) for Jewellery (B) for agricultural products
 (C) for woolen clothes (D) for electrical appliances
78. Employment is provided in the National Rural Employment Guarantee Scheme for-
 (A) 150 days (B) 100 days
 (C) 200 days (D) One year
79. Expansion of the market is sported by-
 (A) Means of Transport (B) Means of Communication
 (C) Bank and Financial Institution (D) All of the above
80. World Trade Organization has been established:
 (A) 1985 year (B) 1995 year
 (C) 2001 year (D) 2005 year
81. Number r is termed as Rational number if it can be expressed as $\frac{p}{q}$, where p and q are integers and,
 (A) $p = 0$ (B) $p \neq 0$
 (C) $q = 0$ (D) $q \neq 0$
82. Zero of the polynomial $p(x) = 2x + 1$ is:
 (A) $-\frac{1}{2}$ (B) $\frac{1}{2}$
 (C) 0 (D) ∞
83. Number of straight lines passing through the point (1,2) is:
 (A) 1 (B) 2
 (C) 3 (D) ∞
84. Shape made by the bisectors for angles of a parallelogram is.
 (A) Rectangle (B) Square
 (C) Circle (D) Straight line
85. If side of each cube is 3 cm. then Volume of given figure is.



- (A) 3 cm^3 (B) 27 cm^3
 (C) 15 cm^3 (D) 405 cm^3
86. Hero's formula for the Area of triangle is:
 (A) $\frac{1}{2}(\text{Base} \times \text{Height})$ (B) $\sqrt{s(s-a)(s-b)(s-c)}$
 (C) $\frac{a+b+c}{2}$ (D) $\sqrt{s \cdot a \cdot b \cdot c}$
87. If the number of observations n is even, then median is.
 (A) $\left(\frac{n+1}{2}\right)^{\text{th}}$ term (B) $\left(\frac{n}{2}\right)^{\text{th}}$ term
 (C) Mean of $\left(\frac{n}{2}\right)^{\text{th}}$ and $\left(\frac{n}{2}+1\right)^{\text{th}}$ term (D) None of these
88. Product of any three consecutive even numbers is divisible by
 (A) 2 (B) 4
 (C) 16 (D) 12
89. Indian Mathematician Varahmihir wrote the
 (A) Arya Bhattiyam (B) Panch Siddhantika
 (C) Ganitsaar Sangrah (D) Leelawati
90. Remainder on dividing polynomial $3x^2 - x^3 - 3x + 5$ by $x - 1 - x^2$ is
 (A) 7 (B) 3
 (C) 0 (D) $2x + 5$
91. A rational number becomes $\frac{1}{3}$ on subtracting 1 from its numerator and it becomes $\frac{1}{4}$ when 8 is added to its denominator, the rational number is
 (A) $\frac{5}{12}$ (B) $\frac{1}{12}$
 (C) $\frac{7}{12}$ (D) $\frac{3}{17}$
92. How many numbers of two digits are divisible by 3
 (A) 30 (B) 32
 (C) 40 (D) 35
93. Co-ordinates of a point on y-axis which is equidistant from the points (6,5) and (-4,3) are
 (A) (9,0) (B) (0,9)
 (C) (3,2) (D) (0,0)
94. Value of $\sec A (1 - \sin A)(\sec A + \tan A)$ is
 (A) 0 (B) 2
 (C) 1 (D) ∞
95. Length of Minute hand of a clock is 14cm. Area formed by this hand in 5 minutes is:
 (A) $\frac{154}{3}$ (B) 154
 (C) $\frac{215}{3}$ (D) $\frac{205}{3}$
96. Mean of first n natural numbers is:
 (A) $\frac{n(n+1)}{2}$ (B) $\frac{n+1}{2}$
 (C) $\frac{n}{2}$ (D) $\frac{n(n-1)}{2}$

97. A box contain 3 blue, 2 white and 4 red marbles. A marble is drawn randomly. Probability of getting white marble is.
(A) $\frac{3}{5}$ (B) $\frac{2}{6}$
(C) $\frac{2}{9}$ (D) $\frac{2}{5}$
98. Choose false statement from following:
(A) All equilateral triangles are isosceles triangle (B) Some rational numbers are integers
(C) All integers are not rational number (D) Some Isosceles triangles are equilateral triangles
99. Angle of elevation of a tower from a point at a distance of 15 meter from foot of the tower is 60° . Height of tower is
(a) 15 meter (b) $\sqrt{3}$ meter
(c) $15\sqrt{3}$ meter (d) $\frac{15}{\sqrt{3}}$ meter
100. n^{th} term of a list of numbers is given by $a_n = (3 + 2n)$. Sum of first 24 terms will be
(A) 672 (B) 670
(C) 570 (D) 572