SAT

MATHEMATICS

1. If A={1,2,3,4}, B = {2,4,5,6} , U={1,2,3,4,5,6,7} then A'∩B' =_____

    (A) ∅   (B) {1,2,3,4,5,6}   (C) {7}   (D) {3,4,5,6}

2. An equivalent expression of $\dfrac{5}{7+4\sqrt{5}}$ after rationalizing the denominator is__

    (A) $\dfrac{20\sqrt{5}-35}{31}$ (B) $\dfrac{20\sqrt{5}-35}{129}$ (C) $\dfrac{35-20\sqrt{5}}{31}$ (D) $\dfrac{35-20\sqrt{5}}{121}$

3. If x-2 is factor of $3x^4 -2x^3 + 7x^2 – 21x +k$ then the value of K is

    (A) 2   (B) 9   (C) 18   (D) -18

4. Line x + y = 2 passes through the _____quadrants.

    (A) 1st and 3rd both   (B) 2nd and 3rd both

    (C) 3rd and 4th both   (D) 1st, 2nd and 4th all

5. If the measure of the angle of ΔABC are in proportion 1 : 2: 3, then the measures of the smallest angle is

    (A) 30^0 (B) 60^0 (C) 90^0 (D) 120^0

6. ΔABC is an equilateral triangle, Ab=6, The points P,Q and R are midpoints of $\overline{AB}$, $\overline{BC}$ and $\overline{CA}$ respectively. The perimeter of ▱ PBCR is _____

    (A) 18   (B) 15   (C) 9   (D) 12

7. In ^{m} ABCD, let $\overline{AM}$ be the altitude corresponding to the base $\overline{BC}$ and $\overline{CN}$ the altitude corresponding to the base $\overline{AB}$, If AB = 10cm, AM=6cm and CN=12cm then BC = _____cm.

    (A) 20   (B) 10   (C) 12   (D) 5

8. A circle passes through the vertices of an equilateral ΔABC. The measure of an angle subtended by the side $\overline{AB}$ at the centre of the circle has measure _____

    (A) 30   (B) 60   (C) 90   (D) 120

9. If the lengths of the sides of a triangle are in propotion 3:4:5 then the area of triangle is _____sq. units, where perimeter of the triangle is 144

    (A) 64   (B) 364   (C) 564   (D) 864

10. The ratio of radii of two cones is 2:3 and the ratio of their slant heights is 9:4. Then the ratio of their curved surface area is

    (A) 3 :2   (B) 1:2   (C) 1:3   (D) 2:3

11. The probability of getting both heads, when two balanced coins are tossed once is

    (A) $\dfrac{1}{2}$ (B) $\dfrac{1}{3}$ (C) $\dfrac{1}{4}$ (D) $\dfrac{1}{5}$

12. The characteristic of the number log 0 003942 = _____

    (A) 3   (B) 2   (C) -3   (D) -2

13. A number having digit 2 at unit place then its cube has digit _____ at its units place.

    (A) 1   (B) 2   (C) 8   (D) 4

14. 3-years ago, the sum of ages of a father and his son was 40 years. After 2-year, the sum of ages of the father and his son will be_____

    (A)40   (B) 46   (C) 50   (D) 60

15. Correspondence ABC ⟷DEF of ΔABC and ΔDEF is similarity. If AB + BC + 10 and DE + EF + 12 and AC = 6 then DF = _____

    (A) 6   (B) 5   (C) 7.2   (D) 16

16. In ΔABC, if $\dfrac{AB}{1} = \dfrac{AC}{2} = \dfrac{BC}{\sqrt{3}}$, then m ∠ C = _____

    (A) 90   (B) 30   (C) 60   (D) 45

17. If 7θ and 2θ are measures of acute angles such than sin 7θ = cos2θ, then sin 3θ - $\sqrt{3}$ tanθ = _____

    (A) 1   (B) 0   (C) -1   (D) 1-$\sqrt{3}$

18. If the angles of elevation of tower from two points a and b (a>b) meters from its foot and the same side of the tower, have measure 30 and 60, then the height of the tower is _____

    (A) $\sqrt{a+b}$ (B) $\sqrt{ab}$ (C) $\sqrt{a-b}$ (D) $\sqrt{\dfrac{a}{b}}$

19. A chord of ⊙(0,5) touches ⊙(0,3). Therefore the length of the chord = ____

    (A) 8   (B) 10   (C) 7   (D) 6

20. The median class o the frequency distribution given below is_____

Class	0-10	10-20	20-30	30-40	40-50
Frequency	7	15	13	17	10

(A) 40-50   (B) 30-40   (C) 20-30   (D) 10-20

Physics

21. Thermal conductivity of standard SWNT along its length is _____ $\dfrac{watt}{m.k}$.

    (A) 3500   (B) 385   (C) 35000   (D) 35

22. The compound microscope consists of two convex lenses of 5cm and 20cm focal length, then which of them will be object lens and eye piece?

    (A) Object lens with 20cm focal length and eye piece with 5cm focal length

    (B) Object lens with 5cm focal length and eye piece with 20cm focal length.

    (C) Both should have 20cm focal length.

    (D) Both should have 5cm focal length

23. The focal length of an eye lens is changed due to the action of_____

    (A) Pupil   (B) Retina   (C) Ciliary muscles   (D) Cornea

24. If the five equal pieces of resistance wire having 5Ω resistance each is connected in parallel, then their equivalent resistance will be_____

    (A) $\dfrac{1}{5}$ Ω   (B)1Ω   (C)5Ω   (D) 25 Ω

25. The amount of 2A electric current is passed from 1 minute through one conducting wire. How much total electric charge will pass through this wire?

    (A) 2c   (B) 30c   (C) 60c   (D) 120C

26. At what distance should an object be placed to obtain its real, inverted and of some height as the object by a convex lens?

    (A) At focus   (B) Between focus and centre of curvature

    (C) At centre of curvature   (D) Between optical centre and focus

27. Velocity of vehicle increases from $5\ \frac{m}{s}$ to $15\ \frac{m}{s}$ in 5 second. What is the magnitude of acceleration?

    (A) $4\ \frac{m}{S^2}$ (B) $4\ \frac{m}{s}$ (C) $2\ \frac{m}{s}$ (D) $2\ \frac{m}{S^2}$

28. What is the focal length of a convex lens having power + 5.0 D?

    (A) -10 cm   (B) -20cm   (C) +10cm   (D) +20cm

29. 1 Newton = _____dyne

    (A) 10^3 (B) 10^4 (C) 10^5 (D) 10^6

30. The increase in velocity of a freely falling body is one second is_____

    (A) 9.8 m/s^2 (B) 9.8 m/s   (C) -9.8 m/s^2 (D) -9.8 m/s

31. An object is thrown vertically upwards with velocity of 20 m/s. At what height will its kinetic energy and potential energy be equal? (g = 10m/s^2)

    (A) 10 m   (B) 20m   (C) 15m   (D) 5m

32. Sound corresponding to which frequency is ultrasonic sound?

    (A) 30 Hz   (B) 300 Hz   (C) 3000 Hz   (D) 30,000 Hz

33. A cyclist travels 5km in the east direction. Then he travels 12km in the south direction. What is the magnitude of displacement of the cycle?

    (A) 17km   (B) 13km   (C) 7km   (D) zero

Chemistry

34 Howmany Elelctrons are there in chloride ion?

    (A) 17   (B) 18   (C) 16   (D) 8

35. Which scientist gave the rule of octet?

    (A) Lewis   (B) Rayleigh and Ramsey (C) Dalton   (D) Dobereiner

36. What is the chemical name of quick lime?

    (A) Calcium Oxide (B) Calcium Carbonate   (C) Calcium hydroxide   (D) Carbon dioxide

37. Which rays are used to diagnose cancer of esophagus?

    (A) Laser   (B) Cathod   (C) X-Ray   (D) r-Ray

38.   250 C = _____K

   (A) 273   (B) 248   (C) 298   (D) -298

39.   Which of the following shows the Tyndall effect?

   (A) Solution of common salt   (B) Milk

    (C) Lemon Juice   (D) Solution of copper sulphate

40.   The PH-value of bite of honey-bee is

   (A)7   (B) More than 7   (C) Less than 7   (D) of any value

41.   To prepare 100 ml, 2M, NaOH solution, _____gram of NaOH will be required?

   (A) 40gm   (B) 8gm   (C) 16gm   (D) 24gm

42.   What is the ratio of iron, chromium and nickel in stainless steel?

   (A) 7:2:1   (B) 7:1:2   (C) 7:3:1   (D) 1:2:7

43.   Which metal is mixed with gold to prepare its ornaments?

   (A) Platinum   (B) Nickel   (C) Copper or Sliver   (D) Zinc

44.   The full form of PABA is_____

   (A) Para Amino Boric Acid   (B) Pttasium Amino Basic Acid

   (C) Para Amino Benzoic Acid   (D) Para Amino Benzoic Acetate

45.   Where ammonia is not used?

   (A) Nylon fibers   (B) Fertilizers   (C) Explosives   (D) Welding

46.   What is the chemical formula of oleum?

   (A) H_2SO_4 (B) H_2SO_3 (C) $H_2S_2O_7$ (D) $H_2S_2O_3$

Biology

47.   Give the name of scientist DNA molecules.

   (A) Robert Brwon   (B) Rober Hook   (C) Leuvan Hook   (D) Watson and crick

48.   Which of the Plant tissue shows the pectin deposition on cell wall?

   (A) Collenchyma   (B) Parenchyma   (C) Sclerenchyma   (D) Chloren chyma

49.   Which disease is spread through influenza virus H_1N_1?

(A) Dengue   (B) Chickengunya   (C) AIDS   (D) Swineflue

50.   Binomial nomenclature was given by the scientist_____

(A) Robert Whittaker (B) Carolus Linnaeus   (C) Carl Woese   (D) Ernst Haeckal

51.   Which special structures are connected with wall of the lungs in class Aves?

(A) Air Sac   (B) Diaphragm   (C) Spongy Bones   (D) Booklungs

52.   Identify the protochordata Animals

(A) Shark   (B) Frog   (C) Balanoglossus   (D) Rohu

53.   Which is the improved hybrid variety of Wheat?

(A) Sona   (B) Sonalika   (C) PS-16   (D) Paras

54.   Which of the following is not consumer?

(A) Carnivores   (B) Herbivores   (C) Autotrophs   (D) Omnivores

55.   What is the range of wavelength of U.V. rays?

(A) 132 to 200 nm   (B) 310 to 400nm   (C) 310 to 200 nm   (D) 300 to 200 nm

56.   Which of the following gland acts as an endocrine gland as well as exocrine gland?

(A) Salivary gland (B) Pancreas gland   (C) Pituituary gland   (D) Parathyroid gland

57.   By which cell the process of opening and closing of stomata is controlled?

(A) Epidermal Cell (B) Guard Cell   (C) Accessory Cell   (D) Leaf Cell

58.   What is the weight of the brain of an adult human?

(A) 1350gm   (B) 1.350gm   (C) 1530gm   (D) 3150gm

59.   How many upper chambers are present in human heart?

(A) Four   (B) Three   (C) Two   (D) One

60.   In which book endangered plant species names are published?

(A) Endangered species book   (B) Green data book

(C) Red data book   (D) Yellow data book

Social Science

61. "Kanchenjungha" Peak is situated in _____state in India

   (A) Arunachal Pradesh   (B) Asam (C) Sikkim   (D) Uttranchal

62. By which name the combined flow of river the Ganga and the Brahmputra is known?

   (A) Doab   (B) Bangar   (C) Meghna   (D) Tarai

63. Which area is Jammu and Kashmir is an area of scanty rainfall?

   (A) Leh   (B) Ladakh   (C) Jammu   (D) Kashmir

64. Distance between India and Europe was reduced due to _____canal.

   (A) Suez   (B) Panama   (C) Agra   (D) Grand

65.   Which revier does not meet to Bay of Bengal?

   (A) Krishna   (B) Kaveri   (C) Maha   (D) Narmada

66. What is prepared out of the liquid of Chid?

   (A) Catechu   (B) Turpentine   (C) Lac   (D) Gam

67. Which soil contains more combination of iron and Aluminum?

   (A) Red   (B) Laterite   (C) Desert   (D) Alluvial

68. Where are the flying squirrels seen?

   (A) Greater Rann of Kutchch (B) At higher altitude in Himalaya (C)Marshy

   land (D) In Western Ghats Forests

69. Which class of Animals are desert cat Ghudkhar and bear in Gujarat?

   (A) Extinct   (B) Endangered

   (C) on the verge of extinction   (D) Adversely (Vulnerable) affected

70. On which river lies the Nagarjunasagar project?

   (A) Godavari   (B) Krishna   (C) Tungbhadra   (D) Kaveri

71. For which crop, is kanam region of Bharuch famous?

   (A) Tabacco   (B) Wheat   (C) Paddy   (D) Cotton

72. Which institution of following does not purchase farm products from farmers as a sustainable prize?

    (A) GROFED   (B) GUJCOMASOL   (C) NDDB   (D) DARE

73. Which soil have been derived from the Deccan Trap?

    (A) Black soil   (B) Red soil   (C) Alluvial soil   (D) Laterite Soil

74. In which state was ' Chipko Movement' occurred?

    (A) Bihar   (B) Gujarat   (C) Punjab   (D) Uttranchal

75. Which day is celebrated as "World Biodiversity Day"?

    (A) 21 -March   (B) 5-June   (C) 29-December   (D) 4-October

76. How many countries had plunged into the first world war?

    (A) 23   (B) 32   (C) 20   (D) 19

77. When was Jallianwala Bagh Massacre happended?

    (A) 1919   (B) 1819   (C) 1920   (D) 1820

78. When did Dandi March start?

    (A) 12th April, 1930   (B) 12th March, 1931

    (C) 12th March 1930   (D) 12th April, 1931

79. England and America established military organization is known as_____

    (A) NATO   (B) SEATO   (C) CENTO   (D) SWATO

80. In 1971 with which country India made traty?

    (A) China   (B) Pakistan   (C) Russia   (D) America

81. Who was the promoter of non-aligned movement of India?

    (A) Lalbahadur Shashtri   (B) Dr. Radhakarishnan

    (C) Pandit Jawaharlal Nehru   (D) Shrimati Indira Gandhi

82. Which state is related to Kathak Dance?

    (A) Asam   (B) Kerala   (C) Uttar Pradesh   (D) Orissa

83.   The work by Amir Khusro is_____

(A) Padmawat   (B) Ashikan

(C) Raghuvamsha   (D) Swapnavasanhattam

84.   Who Founded the city of Fatehpur sikri?

(A) Baber   (B) Akbar   (C) Shahjahan   (D) Humayu

85.   Which Mughal emperor's period is known as golden period of Indian architecture?

(A) Shah Jahan   (B) Baber   (C) Akbar   (D) Humayu

86.   Which is the world's largest Epic?

(A) Ramayana   (B) Ettutokai   (B) Patthuppattu   (D) Mahabharat

87.   In Which literature a collection of dialogues between Buddha and his disciples is given?

(A) Sukta Pitaka   (B) Vinay Pitika   (C) Abhidhamma Pitika   (D) Milind Pahano

88.   Give the name of race known as creator of Mohen-jo-Daro Culture

(A) Australoid (Nlshad People)   (B) Dravidian

(C) Aryans   (D) Negroid (Habsi People)

89.   Black complexion, broad hand, flat nose, short height ect. were the physical features of the tribe called……..

(A) The Dravidians   (B) The Armenoids

(C) The Mongoloids   (D) The Autroloids

90.   German poet Goethe was so much impressed by reading which drama that the put it on his head and danced with joy?

(A) Malvikagnimitram   (B) Vikramovarshiyam

(C) Abhignam Shankuntalam   (D) Mahavir Charitam

91.   Who can give the casting vote in case of a tie for any bill?

(A) Vice Chairman (B) Vice President   (C) Chairman (Speaker)   (D) President

92.   Which one right is not included in fundamental rights in our constitution?

(A) Right of Equality   (B) Insulting of women by men

(C) Right to freedom   (D) Right against exploitation

93. How many parentage have been provided reservation for women entire nation including Gujarat in local self-government organization.

    (A) 43%   (B) 23%   (C) 53%   (D) 33%

94. Gujarat has implemented scheme such as_____Bond to promote women education.

    (A) Mahila   (B) Saraswati   (C) Vidyalaxmi   (D) Narmada

95. According to 2001 census, there were_____women per thousand men in India

    (A) 933   (B) 927   (C) 930   (D) 941

96. India _____ Country.

    (A) Backward   (B) Developed   (C) Developing   (D) Very poor

97. Which country is not developed from following?

    (A) U.S.A   (b) Japan   (C) Nepal   (D) France

98. Which activity cannot be classified under service sector?

    (A) Business   (B) Education and Health (C) Gas and Electricity   (D) Cattle rearing

99. The policy of globalization is associated with_____

    (A) Local trade   (B) Foreign trade   (C) Regional trade   (D) All of these

100. In which year, Government of India passed air pollution control act in India?

    (A) 1999   (B) 1981   (C) 1995   (D) 2002

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NTSE STAGE 1, 2016 – 17
ANSWER KEY
SCHOLASTIC APTITUDE TEST

Mathematics

1. C	2. A	3. D	4. D	5. A	6. B	7. A	8. D	9. D	10. A
11. C	12. C	13. C	14. C	15. C	16. B	17. *	18. B	19. A	20. C

Physics

21. A	22. B	23. C	24. B	25. D	26. C	27. D	28. D	29. C	30. B
31. A	32. D	33. B							

Chemistry

34. B	35. A	36. A	37. C	38. C	39. B	40. C	41. B	42. A	43. C
44. C	45. D	46. C							

Biology

47. D	48. A	49. D	50. B	51. A	52. C	53. B	54. C	55. *	56. B
57. B	58. A	59. C	60. C						

Social Science

61. C	62. C	63. A	64. A	65. D	66. D	67. B	68. A	69. B	70. B
71. D	72. D	73. A	74. D	75. C	76. A	77. A	78.C	79. A	80. C
81. C	82. C	83. B	84. B	85. A	86. D	87. A	88. B	89. D	90. C
91. C	92. B	93. D	94. C	95. A	96. C	97. C	98. D	99. B	100. B

*means question is not correct / bonus.