TEST PAPER

for

NTSE

NATIONAL TALENT SEARCH EXAMINATION(FIRST LEVEL) 2016-17

(For Students of Class X)

Time Allowed: 4 Hr. | **Maximum Marks:** 200

INSTRUCTIONS FOR MARKING ON ANSWER SHEET

1. Use blue/black ball point pen only. There is no negative marking.
2. Part I :- **MAT : 1 – 100** questions
   Part II :- **SAT : 101 – 200** questions
3. This test booklet contains 200 questions of one mark each. All the questions are compulsory.
4. Answer each question by darkening the one correct alternative among the four choices on the OMR SHEET with blue/black ball point pen.

   Example :

Q.No.	Alternatives			
Correct way : 1	①	②	●	④

Q.No.	Alternatives			
Wrong way : 1	⊗	~~②~~	③✓	④

   Student must darkening the right oval only after ensuring correct answer on OMR sheet.
5. Disparity in mentioning (OBC, SC, ST & PH) in application form and OMR sheet can make your candidature invalid.
6. Students are not allowed to scratch/alter/change out an answer once marked on OMR sheet, by using white fluid/eraser/blade/tearing/wearing or in any other form.
7. Separate sheet has been provided for rough work in this test booklet.
8. *Please handover the OMR sheet to the invigilator before leaving the Examination Hall.
   *Take all your question booklets with you.
9. Darken completely the ovals of your answer on OMR sheet in the time limit allotted for that particular paper.
10. Your OMR sheet will be evaluated through electronic scanning process. incomplete and incorrect entries may render your OMR sheet invalid.
11. Use of electronic gadgets, calculator, mobile etc. is strictly prohibited.
12. Total 1 hour extra time will be allotted to visually challenged candidate only.

MENTAL ABILITY TEST (MAT)

**Choose the correct (✓) answer:**

1. If x + y + z = 0, then value of $\dfrac{(x+y)(y+z)(z+x)}{xyz} + 11$ is

   (1) x + 11   (2) y + 11

   (3) z + 11   (4) 10

2. If sin A + cos A = $\sqrt{2}$ sin (90° − A) then value of $\left(\sqrt{2}+1\right)$ tan A will be

   (1) 1   (2) 0

   (3) $\sqrt{2}$ (4) 2

3. If the point (K, 2) is equidistant from the point (5, –2) and (1, –2) then value of $K^2 + 7$ will be

   (1) 10   (2) 9

   (3) 12   (4) 16

4. if each side of a cube is increased by 40%, then how much percent its total surface area will be increased.

   (1) 76   (2) 80

   (3) 96   (4) 85

5. If sum of squares of zeros of a quadratic polynomial $g(y) = y^2 - 6y + p$ is 10. What will be the value of p.

   (1) 13   (2) 12

   (3) 11   (4) 10

6. A train cross a pole in 12 seconds. If the speed of the train is 54 km/hr then length of train will be

   (1) 648 meter   (2) 150 meter

   (3) 180 meter   (4) 100 meter

7. If the sum of the digits of a two digit number is 9 and the difference between the number and that formed by reversing the digits is 45 then number is

   (1) 81   (2) 72

   (3) 45   (4) 54

8. How many numbers between 10 and 90 are divisible by 8 completely

   (1) 12   (2) 10

   (3) 11   (4) 8

9. Is $3 = x + \dfrac{1}{1+\dfrac{1}{5+\dfrac{1}{3}}}$ value of x will be

   (1) 14/19   (2) 17/19

   (3) 15/19   (4) 41/19

10. Simplify $\dfrac{x+1}{x-1} + \dfrac{x-1}{x+1} - \dfrac{(2x^2-2)}{x^2+1}$

    (1) $\dfrac{4x^2}{x^4+1}$ (2) $\dfrac{8x^2}{x^4-1}$

    (3) 1   (4) $\dfrac{4x^2+2}{x^4-1}$

11. Vinod has some cows and some hens in his shed. The total number of legs is 92 and total number of heads is 29. Then the number of hens in his shed is

    (1) 14   (2) 12

    (3) 17   (4) 21

12. Parth can row 16km downstream and 8km upstream in 6 hours. He can row 6km upstream and 24 km downstream in 6 hours. Find the speed of Parth in still water

    (1) 5km/hr   (2) 3km/hr

    (3) 6km/hr   (4) 8km/hr

13. Value of $\left(\log\dfrac{75}{16} - 2\log\dfrac{5}{9} + \log\dfrac{32}{243}\right)$ is

    (1) log 3   (2) 2 log 2

    (3) log 5   (4) log 2

14. Find the angle between the two hands of a clock at 15 minutes past 4 O' clock (Minute hand and hour hand)

    (1) 35.5°   (2) 30°

    (3) 37.5°   (4) 32.5°⁺

15. If $3\sqrt{5} + \sqrt{125} = 17.88$ then what will be the value of $\sqrt{80} + 6\sqrt{5}$

(1) 22.35   (2) 21.66

(3) 20.12   (4) 20.46

16. The traffic signals at four road crossing change every 30 second, 1 minute, 45 seconds and 75 seconds respectively. If they change simultaneously at 9 AM, at what time will they change simultaneously again.

(1) 9:12 AM   (2) 9.15 AM

(3) 9.20 AM   (4) 9.30 AM

17. If A:B = 2:3, B:C = 2:4, and C:D = 2:5 then A:D is equal to

(1) 2:15   (2) 2:5

(3) 1:5   (4) 3:5

18. In the adjoining figure, ABCD is a square of 7cm side length. $\overline{BD}$ is an arc of a circle of radius AB, what is the area of the shaded region?
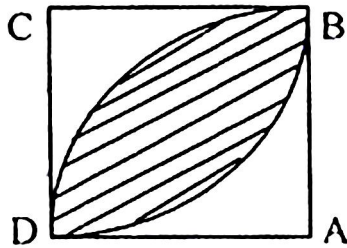
(1) 28cm^2 (2) 35cm^2

(3) 21cm^2 (4) 14cm^2

19. Width of a room is half of its height and height of room is 3/2 times of its length. If cost of flooring carpet on floor at the rate of Rs 4/m^2 is Rs 432, then what will be height of room?

(1) 18 m   (2) 20 m

(3) 12 m   (4) 15 m

20. Which number in the following will completely divide $3^{15} + 3^{16} + 3^{17}$

(1) 11   (2) 14

(3) 13   (4) 17

21. What will be the difference between simple interest and compound interest on sum of Rs 6000 in 2 years at the rate of interest of 5% p.a.

(1) Rs 15   (2) Rs 20

(3) Rs 30   (4) Rs 10

22. Value of $(3.5)^3 - (2.5)^3$ is

(1) 25.27   (2) 29.25

(3) 27.25   (4) 25.29

23. If $\sqrt{13 - x\sqrt{10}} = \sqrt{8} + \sqrt{5}$, then what is the value of x?

(1) –2   (2) –5

(3) –6   (4) –4

24. In the adjoining figure, ΔABC, is circumscribing a circle. Then the length of BC is
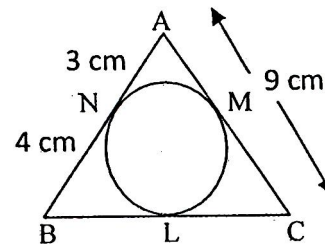
(1) 10 cm   (2) 7 cm

(3) 9 cm   (4) 8 cm

25. The selling price of 5 articles is the same as the cost price of 3 article. The gain or loss percent is

(1) 25% gain   (2) 25% gain

(3) 40% loss   (4) 33.33% loss

26. If the first half of the English alphabet is reversed and so is the 2nd half, then which letter is 7th to the right of the 12th letter from the left side?

(1) S   (2) U

(3) R   (4) T

27. If in a certain code language 'THREAT' is written as 'RHTTAE' then how will 'PEARLY' be written in that code?

(1) YLRAEP   (2) YLRPAE

(3) AEPYLR   (4) AEPRYL

28. What comes in place of question mark '?'

4, 6, 16, 62, 308, ?

(1) 990   (2) 1721

(3) 698   (4) 1846

29. In a group of five persons Kamal is the tallest while Leela is the shortest. Rashi is shorter than Kamal but taller than Vinita and Priti. Priti is second shortest person in the group. Who is the third tallest?

(1) Vinita   (2) Rashi

(3) Priti   (4) Leela

30. Which is the following diagram best depicts the relationship between Males, Husbands and Doctors?

Instructions: (for Questions 31 – 33)

In the venn diagram given below, the square represents women, the triangle represents persons who are in Govt Service, the circle represents educated persons and the rectangle represents persons working in private sector. Each section of the diagram is numbered. Study the diagram and answer the following questions.
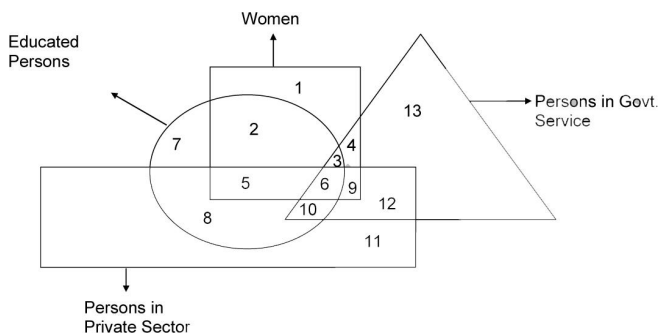
31. Which number represents educated women, who are in Govt. job?

(1) 2   (2) 3

(3) 4   (4) 6

32. Which number represents the uneducated women, who have Govt. Jobs as well as jobs in private sector?

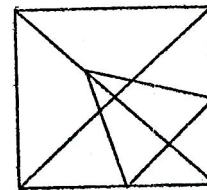(1) 6   (2) 4

(3) 12   (4) 9

33. Which number represent educated men having private jobs as well as govt. jobs?

(1) 7   (2) 8

(3) 6   (4) 10

34. Which is the smallest number?

(1) $-7 \div 7 \times 7 + 7$ (2) $(7 + 7 \times 7) \div 7 - 7$

(3) $7 - 7 \times 7 \div 7 + 7$ (4) $7 - (7 \div 7 \times 7 + 7)$

35. In the given figure, how many triangles are there?

(1) 26   (2) 16

(3) 18   (4) 19

36. Choose the correct mirror image of the given figure form the alternatives.
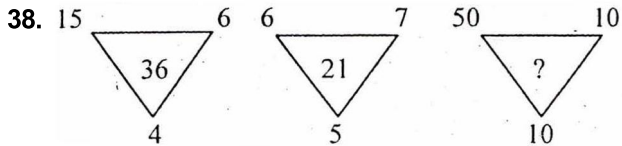

(1)

(2)

(3)

(4)

37. $\dfrac{T}{J} : 2 :: \dfrac{X}{H} : ?$

(1) 3/7   (2) 2

(3) 3   (4) 4

38.

(1) 140   (2) 220

(3) 500   (4) 320

Instructions (Questions 39 – 41)

Read the following information carefully and answer the questions given below:

M, P, J, B, R, T and F are sitting around a circle facing the centre. B is the third to the left of J who is second to the left of M. P is third to the left of B and second to the right of R. T is not an immediate neighbour of M.

39. Who is fourth to the right of M?

(1) B   (2) T

(3) J   (4) M

40. Who is second to the left of T?

(1) F   (2) M

(3) P   (4) J

41. What is F's position with respect to R?

(A) Third to the left

(B) Fourth to the right

(C) Third to the right

(1) Only A   (2) Only B

(3) Only C   (4) Both A and B

42. A man is facing north west. If he turns 90º in the clockwise direction and then 135º in the anticlockwise direction. Which direction is he facing now?

(1) East   (2) West

(3) North   (4) South

43. If in a certain language 'how can you go' is written as 'je de ke pe', 'you come here' is written as 'ne ke se' and 'come and go' as 're pe se', then how will 'here' be written in the langauge?

(1) je   (2) pe

(3) me   (4) ke

44.

4	5	6
2	3	7
1	8	3
21	98	?

(1) 85   (2) 94

(3) 49   (4) 104

45. A's mother is sister of 'B' and daughter of 'C'. 'D' is the daughter of B and sister of E. How is 'C' related to E?

(1) Sister

(2) Mother

(3) Father

(4) Grand mother or Grand father

46. In a certain code

P stands for +

Q stands for –

R stands for x

S stands for ÷

Then number corresponding to 6R8S1R3Q5P7Q4P2 is

(1) 144   (2) 148

(3) 146   (4) 116

47. If the first and third digits of each number are inter changed and one is added to the second digit of each number, then which of the following pairs of numbers, will have highest total of their numerical value?

(1) 946 and 728   (2) 728 and 574

(3) 669 and 946   (4) 669 and 629

48. Looking into a mirror, the clock shows 9:30 as the time. The actual time is

(1) 2:30   (2) 3:30

(3) 4:30   (4) 6:30

Space For Rough Work

49. The sheet of paper shown in the figure is folded to form a box. Choose the correct alternative, which will truly represent the position of alphabets A to F shown in the following figure?
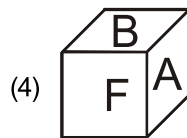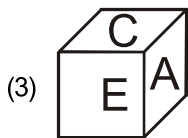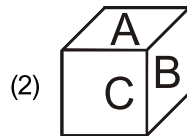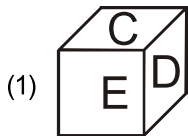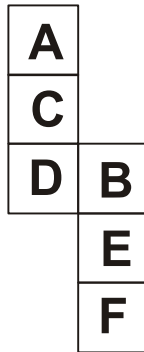
50. Select the figure from amongst the four alternatives which when placed in the blank space, would complete the pattern?
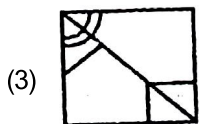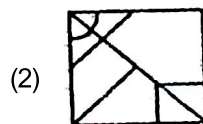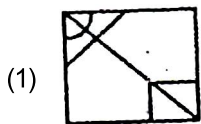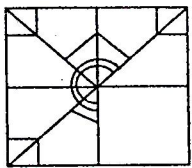
Direction: Choose the word that is opposite in meaning to the given words in question Nos. 51 – 56
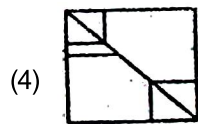
51. Collision
   (1) Compassion   (2) Agreement
   (3) Perfection   (4) Conflict

52. Grudge
   (1) hatred   (2) modest
   (3) eternal   (4) affection

53. Insolvent
   (1) irrational   (2) alluring
   (3) affluent   (4) defaulter

54. Scanty
   (1) Lavish   (2) skillful
   (3) dirty   (4) Insufficient

55. Destitute
   (1) Impoverished   (2) Lacking
   (3) rich   (4) needy

56. Vanity
   (1) pride   (2) modesty
   (3) arrogance   (4) variety

Direction: in question Nos. 57 – 62, out of four alternatives, choose the one which best expresses the meaning of the given word.

57. Emphatic
   (1) hesitant   (2) extinct
   (3) gigantic   (4) definite

58. Compatible
   (1) liable   (2) viable
   (3) eligible   (4) consistent

59. Pandemonium
   (1) a kind of harmonium   (2) repercussion
   (3) chaos   (4) symposium

60. Judicious
   (1) prudent   (2) ardent
   (3) furious   (4) curious

61. Inquisitive
   (1) beautiful   (2) curious
   (3) impulsive   (4) modest

62. Spurious

   (1) serious   (2) original

   (3) anxious   (4) fake

Direction: in question Nos. 63 – 68, Choose the alternative which expresses the meaning of the given idioms/phrases.

63. Once in a blue moon

   (1) every month   (2) always

   (3) rarely   (4) after mid night

64. Keep body and soul together

   (1) to be free from disease

   (2) to maintain life

   (3) to have fun in life

   (4) to live in a joint family

65. Sweat of the brow

   (1) sweating from heat to foot

   (2) sweat runs down the brow

   (3) hard labour

   (4) sweat on the forehead

66. A snake in the grass

   (1) green coloured snake

   (2) snake hiding in grass

   (3) snake lying eggs in grass

   (4) a secret foe

67. Come under the hammer

   (1) to be sold by an auctioneer

   (2) to join

   (3) to beat with hammer

   (4) to break

68. Slip of the tongue

   (1) to talk nonsense

   (2) to stammer

   (3) an error of speech

   (4) to abuse

Direction: in question Nos. 69 – 74, sentences are given with blank to be filled with appropriate word out of four alternatives given:

69. I am sorry I cannot comply _____ your wishes

   (1) with   (2) by

   (3) at   (4) for

70. I am vexed _____ his silence

   (1) about   (2) for

   (3) by   (4) at

71. He fell a victim _____ his own avarice.

   (1) by   (2) to

   (3) of   (4) with

72. We should abide_____ the laws of our country.

   (1) with   (2) in

   (3) by   (4) to

73. You will have to answer_____ your misdeed.

   (1) for   (2) with

   (3) of   (4) to

74. Parents should not be blind_____ the fault of their children.

   (1) for   (2) in

   (3) to   (4) with

Direction: Choose the correct alternatives of the verbs given in brackets from question nos. 75 – 80.

75. The baby _____(cry) since morning.

   (1) has crying   (2) is crying

   (3) cried   (4) has been crying

76. When I reached home, my sister_____(cook) the food.

   (1) has been cooking   (2) was cooking

   (3) is cooking   (4) had cooked

77. The farmers_____(plough) their fields before the rainy season sets in

   (1) have ploughed   (2) had ploughed

   (3) will have ploughed   (4) ploughed

78. I _____(not refuse) him anything till yesterday.

   (1) had not refused   (2) did not refuse

   (3) have not refused   (4) not refused

79. They_____(wait) for the train for two hours when I reached the station.

   (1) were waiting   (2) had been waiting

   (3) have been waiting   (4) are waiting

80. She_____(not write) to me since she went abroad.

   (1) did not write   (2) had not written

   (3) will not have written (4) has not written

Direction: in question Nos. 81 – 85, read the passage and choose the correct answer from the given options

Sariska National Park is a wildlife sanctuary, located at a distance of 107 km from Jaipur. The park possesses historical monuments and temples, which defect the legacy of the maharajas of Alwar. The park is bigger than Ranthambore but has a similar topography. Though this sanctuary does not have many tigers yet many wild animals dwell on the grounds of this park. Apart from other carnivores and herbivores, you can also trace Rhesus monkeys, which can usually be seen playing tricks upon one another around the Tad Vriksh(palm tree). The park also shelters many different species of birds including Bush Quails, Sand Grouses, Tree Pies, Golden Backed Woodpeckers etc. Animal lovers would definitely love this place as it will offer them some of the best scenes to remember. The best place to spot wildlife is at the waterholes where animals come to satisfy their thirst. You can trace hundreds of birds at the Kalighati waterhole and Nilgai can be spotted at Salupka waterhole.

81. In the Sariska National Park, there are _____
    (1) only herbivores
    (2) only carnivores
    (3) both carnivores and herbivores
    (4) no carnivores or herbivores

82. The Sariska National Park is not far from
    (1) Jodhpur   (2) Raipur
    (3) Mewar   (4) Jaipur

83. The park possesses
    (1) ramparts and monuments
    (2) monuments and temples
    (3) temples and ramparts
    (4) monuments and forts

84. Animals come to satisfy their thirst at a
    (1) borehole   (2) deepwell
    (3) waterhole   (4) borewell

85. The Sand Grouse is a species of
    (1) birds   (2) plants
    (3) animals   (4) trees

86. One who looks at the dark side of life?
    (1) optimist   (2) pacifist
    (3) pessimist   (4) sadist

87. One who has a long experience of any occupation?
    (1) Stoic   (2) Novice
    (3) Veteran   (4) Mesologist

88. To become strong again after illness
    (1) recuperate   (2) toxify
    (3) recrimination (4) exhaust

89. Official in-charge of a museum/art gallery
    (1) artist   (2) excavator
    (3) caretaker   (4) curator

90. Rise in prices
    (1) inflammation (2) inflation
    (3) infiltration (4) inflection

Direction: in question Nos. 91 – 95, choose the alternative with correct spellings.

91.
    (1) Catastrophe   (2) Catastrophi
    (3) Catastrofy   (4) Catestrophy

92.
    (1) Redical   (2) Radical
    (3) Radicle   (4) Redicle

93.
    (1) Gyneacology   (2) Gyniecology
    (3) Gynaecology   (4) Ginicology

94.
    (1) Spontaneous   (2) Spantaneous
    (3) Spuntaneous   (4) Sponteneous

95.
    (1) Benevolence   (2) Benivolence
    (3) Benevolance   (4) Benevolence

Direction: in question Nos. 96 – 100, find the correct passive construction.

96. The enemy has captured the city.
    (1) The enemy has captured the city
    (2) The city has been captured by the enemy
    (3) The city captured by the enemy
    (4) The city was been captured by the enemy

97. I kept him waiting

    (1)   He kept me waiting

    (2)   I was kept waiting by him

    (3)   He was kept waiting by me

    (4)   He has been kept waiting by me

98. Who composed this piece of composition

    (1)   By whom was this piece of composition composed?

    (2)   Who is being composed this piece of composition?

    (3)   By whom has this piece of composition been composed ?

    (4)   By whom this piece of composition was written?

99. Bring me a pen

    (1)   Please bring me a pen

    (2)   Let a pen brought to me

    (3)   Let a pen be brought to me

    (4)   Let a pen to bring to me

100. Have you repaired the road?

    (1)   Have the road repaired by you?

    (2)   Has the road been repaired by you?

    (3)   Has the road repaired by you?

    (4)   Was the road repaired by you?

SCHOLASTIC APTITUDE TEST (SAT)

101. The distance travelled by a body falling freely from rest in 2nd, 3rd and 5th second of its motion are in the ratio
- (1) 7 : 5 : 3
- (2) 3 : 5 : 7
- (3) 5 : 3 : 7
- (4) 5 : 7 : 3

102. Two extremes ends of a moving train (engine and guard coach) pass a pole with speeds U and V respectively with a constant acceleration. The speed with which the middle point of the train will pass the same pole is

- (1) $\dfrac{U+V}{2}$
- (2) $\dfrac{V^2+U^2}{2}$
- (3) $\dfrac{UV}{2}$
- (4) $\sqrt{\dfrac{U^2+V^2}{2}}$

103. An athlete completes one round of circular track of radius r in 30s with uniform speed. The ratio of distance to the displacement traveled by the athlete at the end of 45s is

- (1) 2r
- (2) $\dfrac{2}{3}r$
- (3) $\dfrac{3}{2}\pi$
- (4) 2π

104. Five resistances of same value 'x' are joined in an electric circuit as shown in figure. The equivalent resistance between ends P and Q is 3Ω. The value of x
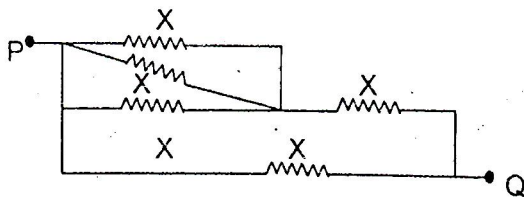
- (1) $\dfrac{1}{5}\Omega$
- (2) $\dfrac{5}{4}\Omega$
- (3) $\dfrac{21}{4}\Omega$
- (4) $\dfrac{7}{4}\Omega$

105. A bomb of mass 9 kg initially at rest explodes into two pieces of masses 3 kg and 6 kg. If the kinetic energy of 3 kg mass is 216J, then the velocity of 6kg mass will be
- (1) 4 m/s
- (2) 3 m/s
- (3) 2 m/s
- (4) 6 m/s

106. A glass rod is rubbed with silk, is found positively charged. This is because
- (1) Electrons are transferred from glass rod to silk.
- (2) Electrons are transferred from silk to glass rod.
- (3) Protons are transferred from glass rod to silk
- (4) Protons are transferred from silk to glass rod

107. A ship rises up as it enters the sea from a river because
- (1) Sea water is harder than river water
- (2) Density of sea water is lesser than river water
- (3) Large quantity of sea water pushes ship up
- (4) Density of sea water is greater than river water

108. Which are of the following represents the correct graph between L and T^2 in simple pendulum
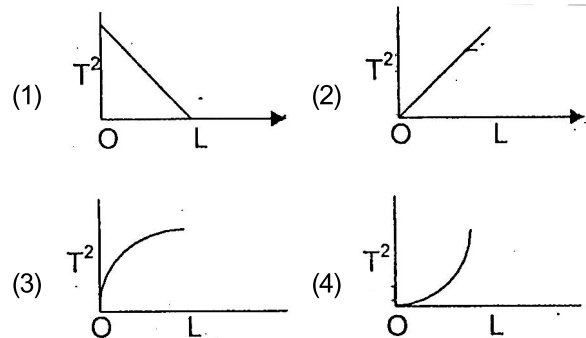
109. Which are of the following correctly depicts reflection. When two mirrors are inclined at an angle of 50°
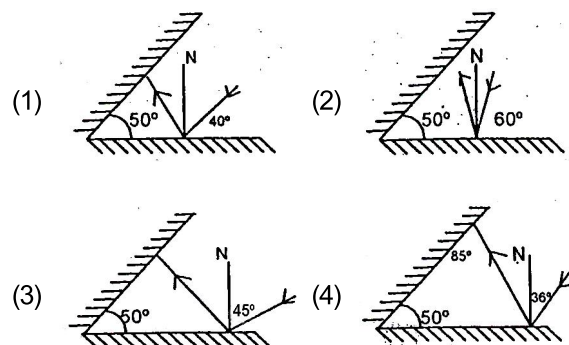
110. Acceleration time graph of a body is shown below:
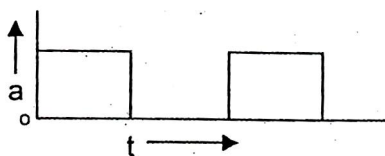
Which of the following velocity time graph of the same body
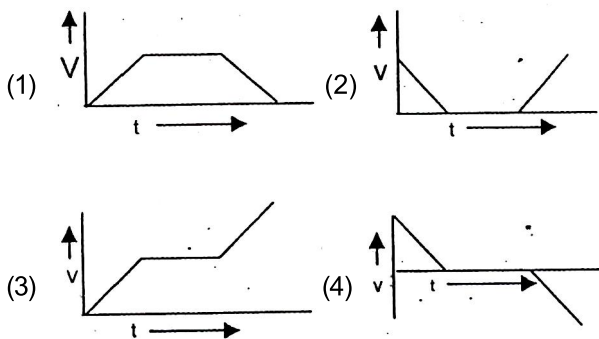
111. A man of 80 kg mass stands on a weighting machine in a lift which is moving upwards with a uniform speed of 5m/s. The reading of the weighing machine will be. (Take g = 10 m/s^2)

(1) zero   (2) 400N

(3) 800N   (4) 1200N

112. An electric bulb marked 40W – 220V is connected with an electric supply of 110v. Its electric power is

(1) 100W   (2) 40W

(3) 20W   (4) 10W

113. An overhead power transmission line carries a current from east to east directs as then magnetic field at a point 1. 5 cm north of the line is in

(1) North direction   (2) South direction

(3) Vertically upward   (4) Vertically downward

114. Total internal reflection is not possible when ray of light travels from

(1) glass to water   (2) glass to air

(3) water to air   (4) water to glass

115. How many grams of oxygen gas is essentially required for complete combustion of 3 moles of butane gas?

(1) 624 g   (2) 312 g

(3) 128 g   (4) 64 g

116. IUPAC name of $\underset{\substack{\|\\O}}{H - C} - \underset{\substack{\|\\O}}{C - H}$

(1) Oxoethanal   (2) Glyoxal

(3) Ethanedial   (4) Ethanedione

117. What is the mass of pure ethanoic acid required to neutralize 280 mL of 0.5 molar pure lime water completely?

(1) 60.4 g   (2) 30.2 g

(3) 16.8 g   (4) 8.4 g

118. A metal sulphate has the formula MSO_4. The phosphate of the same metal will have the formula

(1) $M_3(PO_4)_3$ (2) M_2PO_4

(3) $M(PO_4)_2$ (4) $M_3(PO_4)_2$

119. The mass of sodium chloride formed when 5.3 g of sodium carbonate is dissolve in 250ml of $\frac{1}{2}$ molar HCl solution will be

(1) 5.85 g   (2) 7.32 g

(3) 11.7 g   (4) 58.5 g

120. A gas mixture contains 50% helium and 50% methane by volume at S.T.P. What is the percentage by mass of the methane in the mixture?

(1) 20%   (2) 40%

(3) 60%   (4) 80%

121. The German silver, an alloy, has the composition

(1) Cu + Sn + Zn   (2) Cu + Zn + Ni

(3) Cu + Ag + Zn   (4) Ag + Hg + Sn

122. Out of the following, which is the incorrect statement?

(1) Adsorption is always an exothermic process

(2) The soap solution is not a colloidal solution below its CMC.

(3) 'Argyrol" used in eye – lotion is a colloidal solution

(4) Gold number is the number of moles of gold formed in anode mud during copper refining.

123. A mixture of non – reacting gasses contains hydrogen and oxygen gases in the mass ratio of 1 : 4 respectively. What will be the molar ratio of the above two gases in the mixture?

(1) 16 : 1
(2) 1 : 4
(3) 4 : 1
(4) 1 : 6

124. An element 'X' has the same number of electrons in the first and the fourth shell as well as in the second and the third shell. What is the formula and nature of its oxide?

(1) XO, Neutral
(2) XO_2, Acidic
(3) XO_2, Amphoteric
(4) XO, Basic

125. Which of the following is not used as a food preservative?

(1) Alitame
(2) BHA
(3) BHT
(4) Na_2SO_3

126. Match the column – I with column – II

Column-I	Column-II
(a) 0.5 mole SO_2 gas	(P) 10 moles of proton
(b) 1 mole H_2O	(Q) 11.2 L at S.T.P
(c) 96 g of O_2 gas	(R) 2 moles
(d) 88g of CO_2 gas	(S) 6 moles of atoms

(1) (a) – (R), (b) – (P), (c) – (Q), (d) – (S)
(2) (d) – (P), (c) – (Q), (b) – (R), (a) – (S)
(3) (a) – (P), (b) – (Q), (c) – (S), (d) – (R)
(4) (a) – (Q), (b) – (P), (c) – (S), (d) – (R)

127. Choose the incorrect statement:

(1) Iodine – value is a parameter to denote the degree of unsaturation of fatty acids.
(2) Cholesterol is not present in plant fats
(3) Rancidity is a reduction process of oily food materials.
(4) Tocopherol is an antioxidant.

128. Iodine present in iodised salt in our diet is essential for

(1) Synthesis of insulin
(2) Synthesis of thyroxine
(3) Synthesis of adrenalin
(4) Synthesis of growth hormone

129. Which of the following is not controlled by medulla in hind brain?

(1) Blood pressure
(2) Salivation
(3) Body Posture
(4) Vomitting

130. The breakdown of glucose to pyruvate takes place in

(1) Mitochondria
(2) Nucleus
(3) Lungs
(4) cytoplasm

131. The oxygen rich blood from lungs comes to the heart in

(1) Left atrium
(2) Right atrium
(3) Right ventricle
(4) Left ventricle

132. Growth of pollen tube in the style towards the ovule in plants is an example of

(1) Geotropism
(2) Hydrotropism
(3) Phototropism
(4) Chemotropism

133. The common passage of urine and sperm in human male is

(1) Seminal vesicle
(2) Ureter
(3) Vas deferens
(4) Urethra

134. Out of the following, which enzyme is active in acidic medium

(1) Pepsin
(2) Trypsin
(3) Lipase
(4) Amylase

135. Bowman capsule is found in

(1) Small intestine
(2) Kidneys
(3) Heart
(4) Brain

136. "Khadins" are used in Rajasthan to

(1) Check soil erosion
(2) Recharge ground water
(3) Promote soil erosion
(4) Trap wild animals

137. Which of these is 'not' a reflex action?

(1) Salivation on smell of food
(2) Secretion of sweat
(3) Blinking of eye in strong light
(4) Withdrawal of hand on touching hot object.

138. A food chain comprising of a snake, grass, frog and insect, the secondary consumer is

(1) Insect
(2) Snake
(3) Frog
(4) Grass

139. Identify the inherited trait from the following:
   (1) Colour of seed of garden pea
   (2) Developed musculature of a wrestler
   (3) Singing ability of a person.
   (4) Darkening of skin due to exposure to sunlight

140. Which of the following disease cannot be sexually transmitted.
   (1) Cholera   (2) HIV / AIDS
   (3) Syphilis   (4) Gonorrhoea

141. The simplified form of the expression given below is

$$\frac{\dfrac{y^4 - x^4}{x(x+y)} - \dfrac{y^3}{x}}{y^2 - xy + x^2}$$

   (1) 1   (2) 0
   (3) –1   (4) 2

142. If $a = \dfrac{4xy}{x+y}$ the value of $\dfrac{a+2x}{a-2x} + \dfrac{a+2y}{a-2y}$ in most simplified form is
   (1) 0   (2) 1
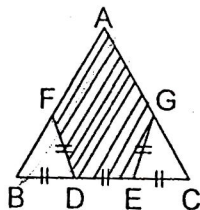   (3) –1   (4) 2

143. If $\dfrac{x^2 - bx}{ax - c} = \dfrac{m-1}{m+1}$ has roots which are numerically equal but of opposite signs, the value of m must be
   (1) $(a - b) / (a + b)$ (2) $(a + b) / (a - b)$
   (3) c   (4) $\dfrac{1}{c}$

144. In the set of equations $z^x = y^{2x}$, $2^z = 2.4^x$; $x + y + z = 16$, the integral roots in the order x, y, z = 16,
   (1) 3, 4, 9   (2) 9, –5, 12
   (3) 12, –5, 9   (4) 4, 3, 9

145. ΔABC is an quilateral triangle, we have BD = EG = DF = DE = EC, then the ratio of the area of the shaded portion to area of ΔABC is

146. If A + B = 90° then $\dfrac{\tan A \tan B + \tan A \cot B}{\sin A \sec B} - \dfrac{\sin^2 B}{\cos^2 A}$ is equal to
   (1) $\text{Cot}^2 A$ (2) $\text{Cot}_2 B$
   (3) $-\tan^2 A$ (4) $-\text{Cot}^2 A$

147. The value of the following expression is

$$\left[\frac{1}{(2^2 - 1)}\right] + \left[\frac{1}{(4^2 - 1)}\right] + \left[\frac{1}{(6^2 - 1)}\right] + \ldots + \left[\frac{1}{(20^2 - 1)}\right]$$
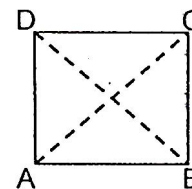
is
   (1) $\dfrac{10}{21}$ (2) $\dfrac{13}{27}$
   (3) $\dfrac{15}{22}$ (4) $\dfrac{8}{33}$

148. If $2^{\sin x + \cos y} = 1$, $16^{\sin^2 x + \cos^2 y} = 4$, then values of sin x and cos y respectively are
   (1) $-\dfrac{1}{2}, \dfrac{1}{2}$ (2) $\dfrac{1}{2}, -\dfrac{1}{3}$
   (3) $1, -1$ (4) $\dfrac{1}{\sqrt{2}}, \dfrac{-1}{\sqrt{2}}$

149. ABCD is a square of area of 4 square units which is divided into 4 non overlapping triangles as shown in figure, then sum of perimeters of the triangles so formed is

   (1) $8(2+\sqrt{2})$ (2) $8(1+\sqrt{2})$
   (3) $4(1+\sqrt{2})$ (4) $4(2+\sqrt{2})$


   (1) $\dfrac{4}{11}$ (2) $\dfrac{7}{9}$
   (3) $\dfrac{5}{12}$ (4) $\dfrac{6}{7}$

150. In the diagram ABCD is a rectangle with AE = EF = FB, the ratio of the areas of triangle CEF and that of rectangle ABCD is
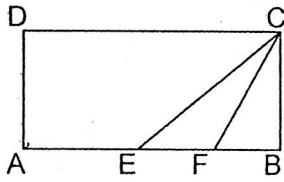

(1) 1 : 6   (2) 1 : 8

(3) 1 : 9   (4) 1 : 10

151. If we divide a two digit number by the sum of its digits we get 4 as quotient and 3 as remainder. Now if we divide that two digit number by the product of its digits, we get 3 as quotient and 5 as remainder the two digit number is

(1) Even   (2) Odd prime

(3) Odd composite   (4) Odd

152. The average weight (in kg) of all the students in a class equals the number of students in the class. The increase in the average weight when a teacher to 21 kg is included equals the decrease in average weight when a student of 19 kg is included. The strength of the class is

(1) 15   (2) 10

(3) 20   (4) 17

153. Four positive integers sum to 125. If the first of these numbers is increased by 4, the second is decreased by 4. the third is multiplied by 4 and the fourth is divided by 4 we find four equal numbers then four original integers are

(1) 16, 24, 5, 80   (2) 8, 22, 38, 57

(3) 7, 19, 46, 53   (4) 12, 28, 40, 45

154. The total number of squares on a chessboard is

(1) 206   (2) 205

(3) 204   (4) 202

155. In the figure, the area of square ABCD is 4 cm^2 and E is mid point of AB; F, G, H and K are the mid points of DE, CF, DG and CH respectively. The area of $\triangle$KDC is:
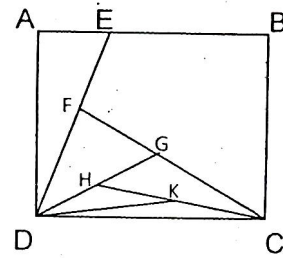
(1) $\dfrac{1}{4}$ cm^2 (2) $\dfrac{1}{8}$ cm^2

(3) $\dfrac{1}{16}$ cm^2 (4) $\dfrac{1}{32}$ cm^2

156. If x% of y is equal to 1% of z, y% of z is equal to 1% of x and z% of x is equal to 1% of y, then the value of xy + yz + zx is

(1) 1   (2) 2

(3) 3   (4) 4

157. The volume and whole surface area of a cylindrical solid of radius 'r' units are v and s respectively. If the height of cylinder is 1 unit then $\dfrac{v}{s}$ is equal to

(1) $\dfrac{1}{2}\left(1-\dfrac{1}{r+1}\right)$ (2) $\dfrac{1}{2}\left(1+\dfrac{1}{r+1}\right)$

(3) $\dfrac{1}{2}\left(1-\dfrac{1}{r}\right)$ (4) $\dfrac{1}{2}\left(1+\dfrac{1}{r}\right)$

158. If the height of right circular cylinder is increased by 10% while the radius of base is decreased by 10% then curved surface area of cylinder

(1) Remains same

(2) Decreases by 1%

(3) Increases by 1%

(4) Increases by 0.1%

Space For Rough Work

159. In the figure ∠D = 90° AB = 16 cm, BC = 12 cm and CA = 6 cm, then CD is:
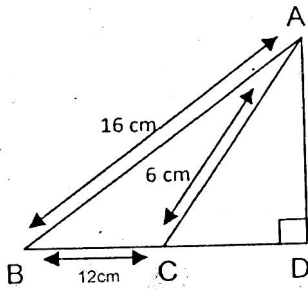
(1) $\dfrac{13}{6}$ cm   (2) $\dfrac{17}{6}$ cm

(3) $\dfrac{19}{6}$ cm   (4) $\dfrac{18}{5}$ cm

160. If x, y, z are real numbers such that $\sqrt{x-1}+\sqrt{y-2}+\sqrt{z-3}$ = 0 then the values of x, y, z are respectively

(1) 1, 2, 3   (2) 0, 0, 0
(3) 2, 3, 1   (4) 2, 4, 1

161. Napoleonic code is known as

(1) Civil code of 1802   (2) Civil code of 1803
(3) Civil code of 1804   (4) Civil code of 1805

162. When was Victor Emmanuel II proclaimed king of united Italy?

(1) 1860   (2) 1861
(3) 1863   (4) 1871

163. Satyagrah of Gandhiji against oppressive planation system was started from which place?

(1) Dandi   (2) Surat
(3) Ahmedabad   (4) Champaran

164. Who set up the first Indian Jute mill in Calcutta in 1917?

(1) Seth Hukum Chand   (2) G.D. Birla
(3) Dwaraka Nath Tagore   (4) J.N. Tata

165. Where was khilafat committee formed in March 1919?

(1) Lucknow   (2) Bombay
(3) Lahore   (4) Ajmer

166. Who wrote about the injustice of the caste system in his book 'Gulamgiri"?

(1) B.R. Ambedkar   (2) Periyar
(3) Amrit Lal Thakkar   (4) Jyotiba Phule

167. The Act was made by Britishers to censor the India press was

(1) Rowlatt Act   (2) Regulating Act
(3) Vernacular Act   (4) Pitt Act

168. Who was the king of France during French Revolution?

(1) Louis XIV   (2) Louis XV
(3) Louis XVI   (4) Louis XVII

169. Which of the following book is not written by Premchand?

(1) Rangbhoomi   (2) Indulekha
(3) Sevasadan   (4) Godan

170. Who was propaganda minister of Hitler?

(1) Goebbels   (2) Raasputin
(3) Stalin   (4) Helmuth

171. Which of the following country is not included in Indo-China?

(1) Laos   (2) Vietnam
(3) Cambodia   (4) Japan

172. How much percent of iron ore is found in magnetite?

(1) 70%   (2) 65%
(3) 60%   (4) 75%

173. Which coal has highest quantity?

(1) Peat   (2) Lignite
(3) Bituminous   (4) Anthracite

174. During which period was the greatest damage inflicted upon Indian forest?

(1) Colonial period   (2) Mughal period
(3) Maratha period   (4) Gupt period

175. A chemical compound called 'texol' extracted from the Himalyan yew is used to cure which disease?

(1) Tuberculosis   (2) Cancer
(3) Asthma   (4) Fever

176. In which year was the 'Project Tiger' launched?

(1) 1974   (2) 1970
(3) 1972   (4) 1973

177. Which crop is kharif crop in North and Rabi in south India?

(1) Rice   (2) Sugar cane
(3) Sesame   (4) Cotton

178. In which industry limestone is used as a raw material?

(1) Cotton textiles   (2) Iron and steel

(3) Cement industry   (4) Jute industry

179. Which one of the following is the type of plate boundary of the Indian plate along the Himalayan Mountain?

(1) Ocean-continent convergence

(2) Divergent-boundary

(3) Transform boundary

(4) Continent-continent boundary

180. Which of the following island groups lies to South East India?

(1) Andaman and Nicobar Islands

(2) Lakshadweep

(3) Maldives

(4) Sri Lanka

181. Which of the following is the main form of degradation in the irrigated areas?

(1) Gully erosion   (2) Wind erosion

(3) Siltation of land   (4) Salinisation of soils

182. River Narmada originates from which of the following hills

(1) Amarkantak   (2) Satpura

(3) Vindyachal   (4) Mahabaleshwar

183. Which one of the following is not a good argument in favour of democracy?

(1) People feel free and equal in democracy

(2) Democracy resolves conflict in a better way than other

(3) Democratic government is more accountable to the people

(4) Democratic counties are more prosperous than others

184. Who prepared the constitution of India in 1928?

(1) B.R. Ambedkar   (2) Rajendra Prasad

(3) Jawahar Lal Nehru   (4) Moti Lal Nehru

185. Who appoints the chief election commissioner of India?

(1) The Prime Minister   (2) People of India

(3) President of India   (4) Chief justice of India

186. Main recommendations of Mandal commission was

(1) reservation of Schedule caste

(2) reservation of schedule tribe

(3) reservation for socially and educationally backward

(4) reservation for minorities

187. In America Legislature is called

(1) Upper house   (2) Congress

(3) Lower house   (4) Cabinet

188. Which one of the following state was born out of cultural, ethnicity and geography?

(1) Kerala   (2) Nagaland

(3) Mizoram   (4) Assam

189. In modern democracy power sharing arrangements can take in following way

(1) Among different organs of government

(2) Among government at different level

(3) Among different social groups

(4) All of them

190. Which one of the following subject is of union list?

(1) Police   (2) Trade

(3) Foreign Affairs   (4) Commerce

191. "Religion can never be separated from politics" said by

(1) Sardar Patel   (2) Jawahar Lal Nehru

(3) Mahatma Gandhi   (4) Indira Gandhi

192. Who interprets the constitution of India?

(1) Lok Sabha

(2) Rajya Sabha

(3) Both (Lok Sabha & Rajya Sabha)

(4) The Supreme Court of India

193. Which one of the following is not a function of political party?

(1) To fill the political offices

(2) Contest the election

(3) To pass the Budget

(4) Do not shape the Public Opinion

194. What is the time period of government budge in India?

(1) From 1st January to 31st December

(2) From 1st March to 30th April

(3) From 1st April to 31st March

(4) From 1st April to 31 December

195. After which five year plant there were three annual plans.

    (1) First five year plan

    (2) Third five year plan

    (3) Fourth five year plan

    (4) Fifth five year plan

196. How many days of guaranteed work is provided by National Rural Employment Guarantee Act.

    (1) 200 days   (2) 100 days

    (3) 300 days   (4) 500 days

197. Which one of the following agency issues one rupee currency note in India?

    (1) Reserve Bank of India

    (2) Ministry of Finance

    (3) Commerce Ministry

    (4) Commercial Banks

198. Selling of part of public sector enterprises is called

    (1) Globalization

    (2) Privatization

    (3) Disinvestment

    (4) Liberalization

199. Blue revolution is associated with which activity

    (1) Indigo cultivation

    (2) Fisheries

    (3) Poultry farming

    (4) Availability of drinking water

200. Which one of these is not a feature of money?

    (1) Medium of exchange   (2) Source of Income

    (3) Store of value   (4) Unit of account

ANSWERS
NTSE STAGE-I-2016

1. (4)	26. (2)	51. (2)	76. (4)	101. (*)	126. (4)	151. (2)	176. (4)
2. (1)	27. (3)	52. (4)	77. (3)	102. (4)	127. (3)	152. (3)	177. (3)
3. (4)	28. (4)	53. (3)	78. (1)	103. (3)	128. (2)	153. (1)	178. (3)
4. (3)	29. (1)	54. (1)	79. (2)	104. (3)	129. (3)	154. (3)	179. (4)
5. (1)	30. (1)	55. (3)	80. (4)	105. (4)	130. (4)	155. (2)	180. (1)
6. (3)	31. (2)	56. (2)	81. (3)	106. (1)	131. (1)	156. (3)	181. (4)
7. (2)	32. (4)	57. (1)	82. (4)	107. (4)	132. (4)	157. (1)	182. (1)
8. (2)	33. (4)	58. (4)	83. (2)	108. (2)	133. (4)	158. (2)	183. (4)
9. (4)	34. (4)	59. (3)	84. (3)	109. (1)	134. (1)	159. (3)	184. (4)
10. (2)	35. (*)	60. (1)	85. (1)	110. (3)	135. (2)	160. (1)	185. (3)
11. (2)	36. (3)	61. (2)	86. (3)	111. (3)	136. (2)	161. (3)	186. (3)
12. (1)	37. (3)	62. (4)	87. (3)	112. (4)	137. (2)	162. (2)	187. (2)
13. (4)	38. (3)	63. (3)	88. (1)	113. (4)	138. (3)	163. (4)	188. (2)
14. (3)	39. (*)	64. (2)	89. (4)	114. (4)	139. (1)	164. (1)	189. (4)
15. (1)	40. (1)	65. (3)	90. (2)	115. (1)	140. (1)	165. (2)	190. (3)
16. (2)	41. (4)	66. (4)	91. (1)	116. (3)	141. (3)	166. (4)	191. (3)
17. (1)	42. (2)	67. (1)	92. (2)	117. (3)	142. (4)	167. (3)	192. (4)
18. (1)	43. (*)	68. (3)	93. (3)	118. (4)	143. (1)	168. (3)	193. (4)
19. (1)	44. (2)	69. (1)	94. (1)	119. (1)	144. (4)	169. (2)	194. (3)
20. (3)	45. (4)	70. (4)	95. (4)	120. (4)	145. (2)	170. (1)	195. (2)
21. (1)	46. (1)	71. (2)	96. (2)	121. (2)	146. (2)	171. (4)	196. (2)
22. (3)	47. (4)	72. (3)	97. (3)	122. (4)	147. (1)	172. (1)	197. (2)
23. (4)	48. (1)	73. (1)	98. (1)	123. (3)	148. (1)	173. (4)	198. (3)
24. (1)	49. (2)	74. (3)	99. (3)	124. (4)	149. (2)	174. (1)	199. (2)
25. (3)	50. (3)	75. (4)	100. (2)	125. (1)	150. (1)	175. (2)	200. (2)

Q.35 : *Correct Answer is 21, Q.39 *Correct Answer is R, Q.43 *Correct Answer is 'ne'

* NA :- No Option is Correct.