NTSE STAGE 1 SAT 2019-20

INSTRUCTIONS TO CANDIDATES

Read the following instructions carefully before you answer the questions on Answer Sheet :-
1.   Write Roll No. as given in admission card on this Question Paper as well as on the Answer sheet.
2.   Write all the Nos. in English numbers only. Write only one digit in one block.
3.   This question paper contains 100 questions.   All   the   questions   are compulsory. Each Question carries one mark.
4.   Every correct answer will be awarded one mark.
5.   The last page of this question booklet is meant for Rough work.
6.   Method of marking Answer - To answer a question, please darken one bubble out of the given four, in the OMR Answer Sheet against that question.
7.   Use only Black/Blue Ball-point Pen to mark the answer.
8.   Use of any calculator, Log tables or any other electronic Gadgets, Mobile phones is prohibited.
9.   Valuation procedure - There are four alternative answers to a question, only one of them is correct answer. If more than one bubble are darkened for a question, it will be presumed that the candidate does not know the correct answer, hence, no mark shall be awarded.
10.   Handing over the Answer Sheet to Invigilator - Please ensure that all entries in the answer sheet are filled up properly i.e. Name, Roll No., Signature, Question Booklet No., etc.
11.   Care in Handling the answer sheet - While using answer sheet adequate care should be taken not to tear or spoil due to folds or wrinkles.
12.   Please return Answer-Sheet to the invigilator after the test.
13.   English version of the question paper will be considered as final in case of any dispute arising out of variation on translated version.
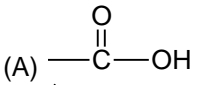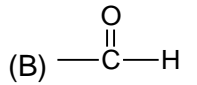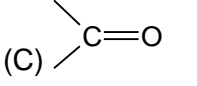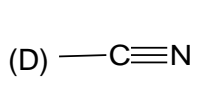
PHYSICS

1)   The value of acceleration due to gravity is:
(A) least on equator   (B) least on poles
(C) same on equator & poles   (D) increases from pole to equator

2)   The numerical ratio of displacement to distance covered by a moving object is :
(A) always < 1   (B) always = 1
(C) always > 1   (D) = or < 1 .

3)   According to third law of motion, action and reaction:
(A) always act on the same body
(B) always act on different bodies in opposite direction
(C) have same magnitude and direction
(D) act on any one of the body at normal to each other

4)   The S.I. unit of retardation is :
(A) ms^{-1} (B) ms^{-2}
(C) ms^2 (D) m

5)   _____ is located behind a convex mirror :
(A)   the focal point   (B) a-ray
(C)   a real image   (D) the object

6)   When white light passes through the prism, colour which deviates the least is :
(A) red   (B) blue
(C) voilet   (D) green

7)   Two charged bodies having equal potential are connected through a conducting wife. In this case
(A) current will flow   (B) not flow
(C) can't say   (D) current will flow if a resistance is connected

8)   Two parallel wires carrying current in opposite directions :
(a) attract each other   (B) repel each other
(C) do not affect each other   (D) get moved to perpendicular to each other

9)   The magnetic field inside a solenoid is :
(A) non uniform   (B) variable
(C) same at all points except at its ends   (D) zero

10)   Inside a magnet lines of force move from :
(A)north to south pole   (B) away from north pole
(C) south to north pole   (D) away from south pole

11)   The resistance of a conductor is directly proportional to:
(A) its area of cross section   (B) density
(C) melting point   (D) length

12)   Light travels fastest in which of the following materials:
(A) diamond   (B) water
(C) glass   (D) air

13)   Acceleration always acts in the direction:
(A) of displacement   (B) of the initial velocity
(C) of net force   (D) of final velocity

CHEMISTRY

14)   Which statements are correct regarding the following reaction?
$2PbO(s) + C(s) \rightarrow 2Pb(s) + CO_2(g)$
 (i) Lead is reduced   (ii) Carbon dioxide is oxidised
(iii) Carbon is oxidized   (iv) Lead oxide is reduced
(A) (i) and (ii)   (B) (iii) and (iv)
(C) (i),(ii) and (iii)   (D) All

15)   What will happen on putting dilute HCl on iron powder?
(A) Hydrogen gas and $FeCl_2$ will form
(B) Chlorine gas and FeCl2 will form
(C) $FeCl_2$ and H_2O will form
(D) Will be no reaction.

16)   The number of covalent bonds in ethane are:
(A) 6   (B) 7
(C) 8   (D) 9

17)   If electronic configuration of an atom is 2,8,7, then atomic number of the atom will be:
(A) 15   (B) 16
(C) 17   (D) 18

18) Which functional group is present in Butanone

(A) $-\overset{\overset{\displaystyle O}{||}}{C}-OH$

(B) $-\overset{\overset{\displaystyle O}{||}}{C}-H$

(C) $\overset{\diagup}{\underset{}{}}C=O$

(D) $-C\equiv N$

19) Which will have electronic configuration 2,8,2?
(A) Na
(B) Mg
(C) Al
(D) Si

20) Which element have two shells and both these shells are fulfilled with electrons
(A) S
(B) Ne
(C) N
(D) He

21) $CH_4 + Cl_2 \xrightarrow{\text{sun ligh}} CH_3Cl + HCl$ This reaction is
(A) Substitution
(B) Oxidation
(C) Combination
(D) Reduction

22)
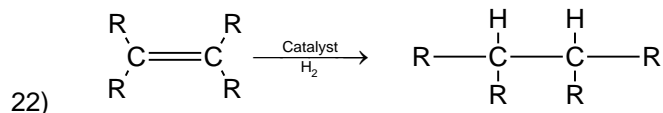
The given reaction is
(A) Oxidation
(B) Reduction
(C) Substitution
(D) Decomposition

23) The structural formula of cyclopentane is:

(A) △

(B) □

(C) ⬠

(D) ⬡

24) The name of $H-\overset{\overset{\displaystyle O}{||}}{C}-H$ is:
(A) Acetone
(B) Acetic Acid
(C) Ethanol
(D) Formaldehyde

25) Which among the following is/are saturated compound?
(A) CH_4
(B) C_3H_8
(C) C_5H_{12}
(D) All the above

26) XCl_2 is a solid and high melting point compound. X will be
(A) Na
(B) Mg
(D) Al
(D) Si

BOTONY

27) Which of the following is not a divisional stage-
(A) Telophase
(B) Prophase
(C) Metaphase
(D) Interphase

28) Cell Organelles are embeded in -

(A) Cytoplasmic membrane   (B) Mucein
(C) Protoplasm   (D) Cytoplasm

29) Growth rings are formed by the activity of -
(A) Xylem   (B) Phloem
(C) Both Xylem and Phloem   (D) Cambium

30) Reserve Food Product of most of the algae is -
(A) Glycogen   (B) Fat
(C) Cellulose   (D) Starch

31) Largest Ecosystem of the world are -
(A) Forest   (B) Grassland
(C) Great lakes   (D) Oceans

32) The Xylem in plants are responsible for -
(A) Transport of water   (B) Transport of oxygen
(C) Transport of food   (D) Transport of Amino acid

33) Budding type of Reproduction is found in-
(A) Peepal   (B) Bryophyllum
(C) Rose   (D) Sugar Cane

34) Which of the following acid is also a vitamin -
(A) Ascorbic acid   (B) Formic acid
(C) Malic acid   (D) Palmatic acid

35) Which of the following plant tip has Queiescent centre -
(A) Stem   (B) Root
(C) Leaf   (D) Sepal

36) Which of the following is a plant Hormone
(A) Insulin   (B) Thyroxin
(C) Cytokinin   (D) Oestrogen

37) Ribosomes are granules formed of-
(A) Only m-RNA   (B) Only Proteins
(C) r RNA + Proteins   (D) Only DNA

38) The Anther contains -
(A) Sepals   (B) Ovules
(C) Pistil   (D) Pollen-grains

39) Cell Organelles essential for photorespiration is-
(A) Ribosome   (B) Dictyosome
(C) Peroxi somes   (D) Glyoxisome

40) Pollination in Maize held by -
(A) Insect   (B) Water
(C) Air   (D) Animal

HISTORY

41) Which of the following cities is not related to the Indus civilization?
(A) Mohanjodaro   (B) Kalibangan
(C) Lothal   (D) Patliputra

42) Who was the Governor General during the 1857 the first war of independence?
(A) Lord Dalhousie   (B) Lord Ripon
(C) Lord Curzon   (D) Lord Canning

43) Who was the founder of Satya Shodhak Samaj?
(A) Ram Mohan Roy   (B) Dayanand Saraswati
(C) Jyotiba Phule   (D) Swami Vivekanand

44) Which of the following foreign travellers came to Indiaduring Chandra Gupta Maurya's Period?
(A) Fa-Xian   (B) Arean
(C) Xuan Zang/Hiuen Tsang   (D) Megasthenes

45) Who among the following is called the "BhojaofAndhra"?
(A) Krishnadeva Rai   (B) VeerNarsimha
(C) Immadi Narsimha   (D) Rajendra Chola

46) Kandariya Mahadev Temple is located at -
(A) Khajuraho   (B) Badami
(C) Ajania   (D) Ellora

47) Where is the ancient coastal settlement Arikamedu located?
(A) Vishakhapattnam   (B) Chennai
(C) Puducherry   (D) Port Blair

48) Who wrote "Humayun nama"?
(A) GulbadanBegani   (B) Abul Fazl
(C) Badayuni   (D) Barni

49) Who wrote "Kiratarjuniya"?
(A) Shudraka   (B) Bharvi
(C) Kalhan   (D) Bilhan

50) Whe founded Forward Bloc?
(A) Subhash Chandra Bose   (B) Jawahar Lai Nehru
(C) Gandhiji   (D) Mohammad Ali Jinnah

51) Lothal the port city of Indus Valley civilization is located -
(A) Gujarat   (B) Rajasthan
(C) Punjab   (D) Haryana

52) Rani Durgawati was the queen of
(A) Garha   (B) Riwa
(C) Jaipur   (D) Jhansi

53) Who established "Khalsa" in 1699 A.D.?
(A) Guru Gobind Singh   (B) Guru Angad
(C) Guru Arjundev   (D) Guru Tej Bahadur

54) Who was the"author of Prayag Prashasti?
(A) Kalidas   (B) Harishena
(C) Varahmihir   (D) Shudrak

55) Ashvaghosha writer of Buddhacharita belonged to th*e court of which Ruler
(A) Kanishka (B) Ashoka
(C) Chandragupta Maurya (D) Birabisara

56) The largest area under mangroves is in which of the following state/union territory?
(A) Andaman and Nicobar (B) Andhra Pradesh
(C) West Bengal (D) Gujarat

57) River in its last stage forms -
(A) Water Fall (B) Flood Plains
(C) Delta or Estuary (D) OX-Bow lake

58) Sundari trees are found in
(A) Tropical forest (B) Himalayan forest
(C) Mangrove forest (D) Tropical deciduous forest

59) Which scale is a Representative Fraction (R.F.)?
(A) One inch is equal to ten miles (B) 1 cm = 1 km
(C) One cm for ten km (D) 1 : 1,00,000

60) Jim Corbett National Park is located in -
(A) Himachal Pradesh (B) Uttarakhand
(C) Jammu & Kashmir (D) Assam

61) Yellow Revolution is related to -
(A) Fruit Production (B) Sheep rearing
(C) Fish Production (D) Edible Oil & Oil Seeds

62) Which of the following Indian States is also known as a 'Land of Red river and Blue Hills'?
(A) Urtarakhand (B) Assam
(C) Meghalaya (D) Arunachal Pradesh

63) Which of the following is not a Metallic Mineral.
(A) Iron (B) Manganese
(C) Gold (D) Coal

64) The Clouded leopard National Park is situated in which of the following states?
(A) Tripura (B) Uttar Pradesh
(C) Assam (D) Mizoram

65) Silent Valley is located in -
(A) Tamil Nadu (B) Kerala
(C) Karnataka (D) Himachal Pradesh

66) River Brahmaputra in Tibet (China) is called
(A) Meghana (B) Tsangpo
(C) Padma (D) Debanga

67) The largest Iron and Steel in Plants in India is-
(A) Tata Iron and Steel Company (B) Indian Iron and Steel Company
(C) Hindustan Steel Ltd. (D) Vishveswariah Iron and Steel Company

68) Which of the following Separates India and Sri Lanka.
(A) The Gulf of Cambay   (B) The Rann of Kutch
(C)The Bay of Bengal   (D)   The Gulf of Mannar

69) The best Quality of coal.
(A) Bituminous   (B) Anthracite
(C) Lignite   (D) Peat

70) Where is Kalpakkam
(A) Uttar Pradesh   (B) Maharashtra
(C) Gujarat   (D) Tamil Nadu

71) The word 'Democracy' is focused by 'Demos and 'Kratia' which are (both) words
(A)   Greek   (B) latin
(C)   Spanish   (D) English

72) Which Article of the constitution states about the working of an election in India?
(A) Article -19   (B) Article - 300
(C) Article-324   (D)   Article-368

73) Fundamental Rights can be suspended.
(A) By Judiciary   (B) By Parliament
(C) In emergency period   (D) None of the above

74) Who is responsible for the registration of the voter.
(A) Governor   (B) Voters
(C) Political parties   (D) Election commission

75) Indian constitution is
(A) Rigid   (B) Flexible
(C) Rigid and Flexible   (D) None of the above

76) What is marginal productivity of labour in disguised employment
(A)   Zero   (B) Minimum
(C)   One   (D) Maximum

77) What the industrial unit is called, which is run with the help of family members?
(A) Village industry   (B) Agricultural industry
(C) Cottage industry   (D) Small industry

78) Where the first mobile bank was established?
(A) in Ahmadnagar district of Maharashtra
(B) in Khargone district of Madhya Pradesh
(C) in Kota district of Rajasthan
(D) in Mysore district of Karnataka

79) When Prime Minister Rozgar Yojana started?
(A) 15th August 1947   (B) 26th January 1950
(C) 2nd October 1993   (D)   15th August 2015

80) Which of the following sector contributes maximum in gross domestic product of India?
(A) Primary sector   (B) Secondary sector
(C) Tertiary sector   (D) Foreign sector

MATHEMATICS

81) If the sum of 14 terms of an A.P. is 1050 and its first term is 10, the 20th term will be
   (A)   140   (B)   160
   (C)   180   (D)   200

82) The roots of quadratic equation $ax^2 + bx + c = 0$ are real and distinct if
   (A) $b^2 = 4ac$ (B) $b^2 - 4ac > 0$
   (C) $b^2 - 4ac < 0$ (D) None of these

83) If in a triangle, square of longest side is equal to the sum of the squares of the other two sides, then the angle opposite the longest side is
   (A) Acute angle   (B) Right angle
   (C) Obtuse angle   (D) None of these

84) $\dfrac{\tan 65°}{\cot 25°} = ?$
   (A) 1   (B) 0
   (C) ½   (D) None

85) Which of the following can not be the probability of an event:
   (A) 0.78   (B) 2/5
   (C) 73%   (D) -0.78   .

86) Cube root of 328509 is
   (A) 65   (B) 66
   (C) 68   (D) 69

87) The ratio of angles in a triangle is 1 :2 : 3, then the largest angle is
   (A) 60°   (B) 90°
   (C) 120°   (D) None of these

88) The point of intersection of lines $7x - 15y - 2 = 0$ and $6x + 12y - 18 = 0$ is
   (A) $\left(\dfrac{-49}{29}, \dfrac{19}{29}\right)$ (B) $\left(\dfrac{49}{29}, \dfrac{19}{29}\right)$
   (C) $\left(\dfrac{49}{29}, \dfrac{-19}{29}\right)$ (D) None of these

89) Pair of equations $5x - 8y + 1 = 0$ and $3x - \dfrac{24}{5}y + \dfrac{3}{5} = 0$ have
   (A) No solution   (B)   Unique solution
   (C) Infinite solutions   (D)   None of these

90) The area of the triangle with vertices (1,-1),(-4,6) and (-3-5) is
   (A) 20 square unit   (B)   22 square unit
   (C) 24 square unit   (D)   28 square unit

91) Tenth term of A.P. 2,7,12, is :
   (A) 42   (B) 47
   (C) 37   (D) 52

92) With usual meanings of notations, formula for assumed mean method for A.M. is

(A) $\bar{x} = A + \dfrac{\sum\limits_{i=1}^{N} f_i d_i}{\sum\limits_{i=1}^{N} f_i}$ where $d_i = x_i - A$

(B) $\bar{x} = \dfrac{x_1 + x_2 + ... + x_n}{N}$

(C) $\bar{x} = \dfrac{\sum\limits_{i=1}^{N} f_i x_i}{\sum\limits_{i=1}^{N} f_i}$

(D) None of these

93) The value of $\dfrac{\cos 30° \times \sin 60°}{\cos 60°}$ is

(A) 0   (B)   0.5
(C) 1   (D)   1.5

94) For individual series 108, 64, 57, 54, 52 Median is:
(A) 52   (B) 53
(C) 54   (D) 55

95) If $\tan\theta = \dfrac{3}{4}$ then $\sin\theta \times \cos\theta = ?$

(A) 10/25   (B)   11/25
(C) 12/25   (D)   13/25

96) Total two digit numbers completely divisible by 3 are :
(A)   29   (B)   30
(C)   31   (D)   32

97) sin30° × tan 30° x cot 30° × cosec 60° -
(A) tan 30°   (B) cot 60°
(C) sin 30° × cosec 60°   (D) All of the above

98) (3x+6) (x + 1) + 2x = (x+5) (x+4) has
(A) No roots   (B) Imaginary roots
(C) Real Roots   (D) None of these

99) When 2 x 2 + 3x + 1 is divided by x + 2 then quotient and remainder are :
(A) Q = 2x - 1, R = 3   (B) Q = x +1, R = 3
(C) Q = 2x + 1, R = 3   (D) None of these

100) The zeros of quadratic polynomial $x^2 + 7x + 10$ will be :
(A)   2 and -5   (B)   -2 and 5
(C) -2 and -5   (D)   None of these