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Questions & Answers

for

NTSE (Stage-I) 2019-20

INSTRUCTIONS TO CANDIDATES

Read the following instructions carefully before you open the question booklet.

1. Use blue/black ballpoint pen only. There is no negative marking.
2. Part I : MAT : 1 - 100 questions
Part II : SAT : 1 - 100 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 ballpoint pen.

Example:

Q. No.	Alternatives
Correct way : 1	① ② ● ④
Q. No.	Alternatives
Wrong way : 1	⊗ ⊕ ⊖ ⊙

Student must darkening the right oval only after ensuring correct answer on OMR Sheet.

5. 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.
6. Separate sheet has been provided for rough work in this test booklet.
7. Please handover the OMR Sheet to the invigilator before leaving the Examination Hall.
8. Darken completely the ovals of your answer on OMR Sheet in the time limit allotted for that particular paper.
9. Your OMR Sheet will be evaluated through electronic scanning process. Incomplete and incorrect entries may render your OMR Sheet invalid.
10. Use of electronic gadgets, calculator, mobile etc., is strictly prohibited.

PART-I : MENTAL ABILITY TEST (MAT)

1. Qutb Minar : Delhi :: Rock Garden : ?

- (1) Kolkata
- (2) Chennai
- (3) Chandigarh
- (4) Bengaluru

Answer (3)

2. If in a code CLOUD is written as DMPVE, then in the same code how SIGHT will be written?

- (1) SGHJV (2) UGHHT
- (3) UHJFW (4) TJHIU

Answer (4)

Direction (03 to 07) : Read the following information and answer the questions based on it :

- (i) A, B, C, D, E and F are six family members.
 - (ii) There is one Teacher, one Professor, one Engineer, two Students and one Housewife.
 - (iii) There are two married couples in the family.
 - (iv) A who is a Teacher is father of E.
 - (v) F is a Student and mother of D.
 - (vi) B is grandmother of D and is a Housewife.
 - (vii) C is father of A and is an Engineer.
 - (viii) D is brother of E.
3. Which of the following statements is definitely true?
- (1) C is father of the Student
 - (2) B is grandmother of the Professor
 - (3) F is the father of Professor
 - (4) D is the brother of the Professor

Answer (2)

4. Which of the following is one of the pairs of married couples?

- (1) FB (2) FA
- (3) CF (4) FD

Answer (2)

5. Who is the Professor?

- (1) D (2) E
- (3) Either D or E (4) A's son

Answer (3)

6. How many female members are there in the family?

- (1) Three only (2) Two only
- (3) Three or four (4) Two or three

Answer (1)

7. How is D related to B?

- (1) Granddaughter (2) Grandson
- (3) Son (4) None of these

Answer (1)

8. A man walks 2 km to the east, turns left, walks 2 km and turns left and walks 2 km. Which direction is he facing now?

- (1) East (2) West
- (3) North (4) South

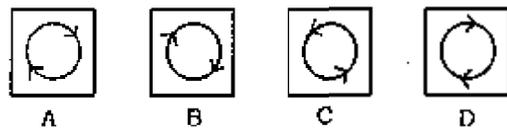
Answer (2)

9. If UNDERSTAND is written as 1234567823 in a code language then in that language START will be written as

- (1) 56781
- (2) 83243
- (3) 73652
- (4) 67857

Answer (4)

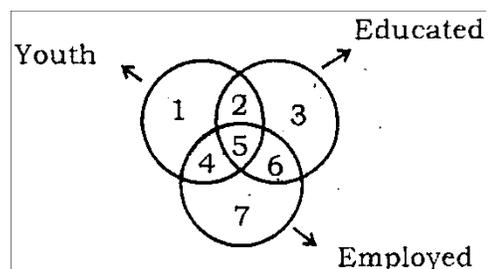
10. In this question, select the one figure which is different from the other three.



- (1) A (2) B
- (3) C (4) D

Answer (3)

Direction (11 to 13) : Study the following diagram :



11. Identify the region representing the youths who are employed, but not educated.

- (1) 4, 5, 6 (2) 4 only
(3) 1, 4, 7 (4) 4, 7

Answer (2)

12. Identify the region representing youths who are educated but not employed.

- (1) 2,5,4 (2) 2,5,6
(3) 4, 5, 6 (4) 2 only

Answer (4)

13. Identify the region representing youths who are educated and employed also

- (1) 6 only (2) 7 only
(3) 5 only (4) None of these

Answer (3)

14. If 'x' means 'sum', '-' means 'division', '÷' means 'subtract' and '+' means multiplication, then which of the following equations is true?

- (1) $16 + 5 - 10 \times 4 \div 3 = 9$
(2) $16 - 5 \times 10 \div 4 + 3 = 12$
(3) $16 + 5 \div 10 \times 4 - 3 = 9$
(4) $16 \times 5 \div 10 + 4 - 3 = 9$

Answer (1)

Direction (15 & 16) : Identify the missing number in the following sequence: [Hints : all are prime nos.]

15. 31, 37, ?, 43, 47, 53

- (1) 39 (2) 40
(3) 41 (4) 42

Answer (3)

16. 2,3,6,15,42,?

- (1) 84 (2) 123
(3) 94 (4) 60

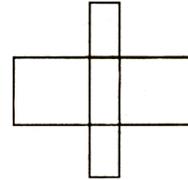
Answer (2)

17. If BAT is coded as 283, CAT is coded as 383 and ARE is coded as 801, the code for BETTER is

- (1) 123301
(2) 213310
(3) 213301
(4) 012334

Answer (2)

18. How many rectangles are there in the following diagram?



- (1) 5 (2) 15
(3) 11 (4) 12

Answer (3)

19. In any code language DEVIL is written as ABSFI, then how OTHER will be written in that language?

- (1) LRECO (2) LQEBO
(3) LWEB0 (4) RWKHV

Answer (2)

20. What will be in place of (?) ?

A,G,M,R,X,?

- (1) A (2) B
(3) C (4) D

Answer (4)

21. What will be in place of(?) ?

AT, CS, ER, GQ,?

- (1) JP (2) IQ
(3) IP (4) JO

Answer (3)

22. Crime : Punishment : : Good work : ?

- (1) Sin (2) Reward
(3) Good (4) Entertainment

Answer (2)

23. Import : Export : : Expenditure : ?

- (1) Revenue (2) Deficit
(3) Tax (4) Exchange

Answer (1)

24. If in English alphabets first and twenty-sixth letters are a pair, second and twenty-fifth are a pair and so on, then which of the following is a like pair?

- (1) IP (2) GR
(3) CW (4) EV

Answer (4)

25. Select the word which can be made by using the letters of the given word :
MULTIPLICATION

- (1) MUTUALY (2) LIMITATION
(3) APPLICABLE (4) NOTIFICATION

Answer (2)

26. How many meaningful English words can be made by using each letter of the group of letters ACER only once?

- (1) 1 (2) 2
(3) 3 (4) 4

Answer (4)

27. Select the word from the alternatives which cannot be made by using the letters of the given word.

SUPERIORITY

- (1) PURSE (2) PURSUIT
(3) PRIORITY (4) PURITY

Answer (2)

28. If in any code language CAME is written as JZBF then, what will be written for CAKE in that language?

- (1) JBVF (2) FJVB
(3) JVBF (4) FBVJ

Answer (1)

29. If any code language CARE is written as BZQD then how LEMON will be written in that language?

- (1) GDED0 (2) GDDMO
(3) OVNLM (4) KDLNM

Answer (4)

30. In certain code CLOUD is written as DMPVE then how SIGHT will be written in that code?

- (1) SGHJV (2) UGHHT
(3) UHJFW (4) TJHIU

Answer (4)

Direction (31 to 35) : Below are given some numbers with some letters. Study them and answer the questions:

5 2 6 3 0 1 8 7 4 9
P D N L G K H J B A

31. 384029

- (1) LHBGDA (2) ADGBLH
(3) PDNLHG (4) DCBANL

Answer (1)

32. 422605

- (1) CLNDOPB (2) BDDNGP
(3) PGNDBC (4) CBADLC

Answer (2)

33. 3265401

- (1) OPNDCBA (2) LCDBDNO
(3) LDNPBGK (4) KGBCDNC

Answer (3)

34. 1003241

- (1) KGGDLBDK (2) CNDLBOK
(3) BCDBAAC (4) KGGLDBK

Answer (4)

35. 321567

- (1) LDKPNJ (2) JNPKDL
(3) LKDNJP (4) PJKLDN

Answer (1)

36. The way in which 'Whale' is related to 'Mammal' in the same way to which the 'Crocodile' will be related?

- (1) Amphibian (2) Aquatic
(3) Mammal (4) Bird

Answer (1)

37. The relation that exists between China and Beijing, the same relation exists between Japan and which of the following?

- (1) Moscow (2) Rome
(3) Berlin (4) Tokyo

Answer (4)

38. The relation which exists between pasteurization and Louis Pasteur the same relation exists between Aeroplane and which of the following?

- (1) G. Marcony
(2) J. L. Baird
(3) Wright brothers
(4) Brecket

Answer (3)

39. The relation exists between DSO and GVR the same relation exists between NDV and which of the following?

- (1) YGQ (2) QYG
(3) YQG (4) QGY

Answer (4)

40. The relation that exists between 'Canada' and 'Maple leaves' the same relation exists between 'Sri Lanka' and which of the following?

- (1) Lion and Sword (2) Olive leaves
(3) Eagle (4) Rose flower

Answer (1)

Direction (41 to 43) : Answer the following questions on the basis of the information given:

- (A) The meaning of $P + Q$ is – P is the brother of Q
(B) The meaning of $P - Q$ is – P is the mother of Q
(C) The meaning of $P \times Q$ is – P is the sister of Q
41. Which of the following means that M is the maternal uncle of R?

- (1) $M + K - R$ (2) $M - R + K$
(3) $M + K \times Q$ (4) $M - K + R$

Answer (1)

42. What conclusion do you extract from $M + N - Q \times R$?

- (1) R is the sister of N
(2) M is the maternal uncle of Q
(3) R is the husband of N
(4) R is the brother of Q

Answer (2)

43. P is the brother of Q, R is the sister of Q and S is the sister of R, then how is Q related to R?

- (1) Sister (2) Brother or sister
(3) Brother (4) Father

Answer (2)

44. Indicating to a picture Aparna said 'He is the only son of the father of the brother of my sister'. How is Aparna related to that person?

- (1) Maternal uncle (2) Father
(3) Grandfather (4) Brother

Answer (4)

45. Chhaya is telling to, Anuradha "The father of your daughter is the son of my maternal grandfather". How is Chhaya related to the husband of Anuradha?

- (1) Sister (2) Mother
(3) Aunt (4) Niece

Answer (4)

46. A lady walked 15 km in the eastern direction, then walked 4 km towards north and again walked 12 km towards west. How far is he from her starting place?

- (1) 31km (2) 5 km
(3) 19 km (4) 27 km

Answer (2)

47. If a clock is kept in such a way that its figure of 12 comes towards east, then in which direction will be the figure of 9?

- (1) South (2) West
(3) North (4) East

Answer (3)

48. In the morning I went for a walk in the garden. I was standing in a place and wanted to see the sun. For this purpose I turned 90° anticlockwise. But I could not see the sun. So I turned 270° clockwise. This time I could see the sun. In which direction I was facing at the first?

- (1) North-west (2) North
(3) South-East (4) West

Answer (4)

49. In a morning just after the sunrise A and B was talking between each other face to face. If the shadow of B fell just on the left of A, then just opposite of which direction was the face of A?

- (1) North-east (2) North
(3) West (4) South

Answer (4)

50. In the evening just before sunset, Ram and Mohan were standing in a courtyard and talking between each other. If the shadow of Mohan falls is just on the left of Ram, then in which direction is the face of Ram?

- (1) East (2) West
(3) South (4) North

Answer (3)

51. Kiran, Suman, Vidya, Naina and Kamala are five friends. Naina is younger than Kamala, Suman is younger than Vidya and Vidya is younger than Kiran. If Suman is elder than Kamala then who will be in the middle in the order of their ages?

- (1) Kamala (2) Suman
(3) Vidya (4) Kiran

Answer (2)

52. Garima, Rupa, Anjali and Khushbu are made to stand in ascending order of their ages. If Rupa is elder than Khushbu, Garima is younger than Anjali and elder than Rupa, then who is the youngest?

- (1) Anjali (2) Khushbu
(3) Rupa (4) Garima

Answer (2)

53. In an examination Suman has got equal marks as Kavita. Meena got more marks than Geeta, but her marks was less than Suman. Who got the least marks?

- (1) Suman (2) Meena
(3) Geeta (4) Kavita

Answer (3)

54. Gopal is elder than Mohan but younger than Ram. Mohan is elder than Sohan but younger than Ram. Who is the eldest?

- (1) Mohan (2) Sohan
(3) Ram (4) Gopal

Answer (3)

55. Sourav is elder than Neeraj, but younger than Vinod. Manu is elder than Vinod, but younger than Shivam. Who is the eldest?

- (1) Sourav (2) Neeraj
(3) Shivam (4) Manu

Answer (3)

Direction (56 to 60) : Six persons A, B, C, D, E and F are sitting in a circle facing the centre. A is in the middle of B and C, but E and C are face to face to. F. D is second in the left of E.

56. Who is second person sitting in the right of A?

- (1) D (2) E
(3) B (4) F

Answer (3)

57. Who is sitting just on the left of D?

- (1) B (2) A
(3) C (4) F

Answer (1)

58. Who is sitting just in front of F?

- (1) C (2) B
(3) A (4) F

Answer (3)

59. Who is sitting just in front of E?

- (1) C (2) D
(3) B (4) A

Answer (3)

60. Who is sitting just in front of D?

- (1) C (2) A
(3) F (4) E

Answer (1)

Direction (61 to 64) : Six books are kept one above another. Biology book is just under the Physics book. Chemistry book is in between Hindi and Geography books.

Anthropology book is not on the top. Biology book is at the bottom and Hindi book is on the top.

61. Which book is in second place from the top?

- (1) Chemistry (2) Anthropology
(3) Geography (4) Biology

Answer (1)

62. Which book is fourth from the bottom?

- (1) Hindi (2) Geography
(3) Anthropology (4) Chemistry

Answer (2)

63. Which book is third from the top?

- (1) Geography (2) Anthropology
(3) Physics (4) Biology

Answer (1)

64. Which book is in between Chemistry and Anthropology?

- (1) Physics (2) Geography
(3) Biology (4) Hindi

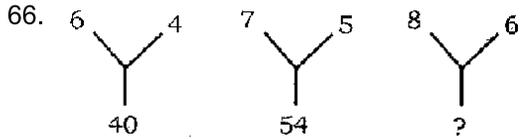
Answer (2)

65. Which of the following words will come third in the English dictionary?

- (1) Reconcile (2) Reconstruct
(3) Reconsider (4) Reconnoitre

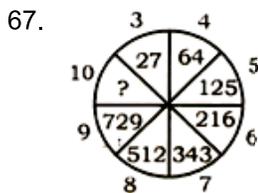
Answer (3)

Direction (66 to 70) : What will be in the place of (?)?



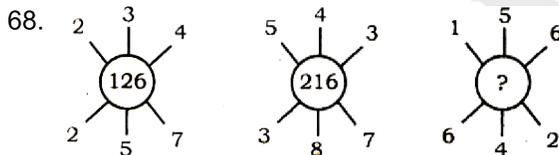
- (1) 70 (2) 75 (3) 80 (4) 85

Answer (1)



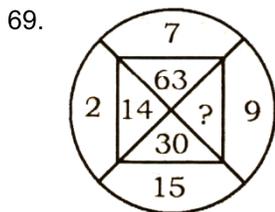
- (1) 1000 (2) 2000
(3) 3000 (4) 4000

Answer (1)



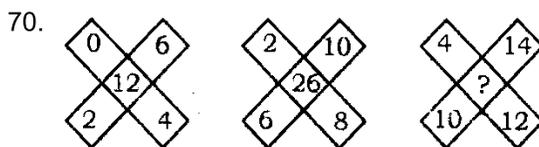
- (1) 142 (2) 242
(3) 144 (4) 216

Answer (1)



- (1) 33 (2) 145
(3) 135 (4) 18

Answer (3)



- (1) 36 (2) 38
(3) 40 (4) 48

Answer (3)

Direction (71 to 75) : In the following questions two statements and four conclusions I, II, III and IV have been given. According to the logic you have to decide on the basis of the given two statements that which conclusion is correct:

71. Statements:

- A. Some students are children.
B. All children are girls.

Conclusions :

- I. All students are girls.
II. Some girls are students.
III. Some girls are children.
IV. All children are students.

- (1) Only conclusion II is correct
(2) Conclusions I, II and III are correct
(3) All conclusions are correct
(4) Conclusions II and III are correct.

Answer (1)

72. Statements :

- A. All papers are pens.
B. All pens are wet.

Conclusions :

- I. Some pens are papers.
II. No pen is paper.
III. Some wet are pens.
IV. All wets are papers.
(1) Only conclusion I is correct.
(2) Conclusion I or II is correct.
(3) Conclusions I and III are correct.
(4) Conclusion III or IV is correct.

Answer (3)

73. Statements:

- A. Some windows are doors.
B. All doors are handles.

Conclusions:

- I. Some windows are handles.
II. All windows are handles.
III. Some cats are handles.
IV. All cats are handles.
(1) All conclusions are correct.
(2) Conclusions II and IV are correct.
(3) No conclusion is correct.
(4) Conclusions I and III are correct.

Answer (4)

74. Statements:

- A. Some black are yellow.
- B. No yellow is not white.

Conclusions:

- I. Some yellow are black.
 - II. Some white are black.
 - III. Some white are not black.
 - IV. Some white are not black.
- (1) Only conclusion I is correct
 - (2) Conclusions II and III are correct.
 - (3) Conclusions I & III are correct.
 - (4) Only conclusion III is correct.

Answer (1)

75. Statements:

- A. Some pens are pencils.
- B. Some pencils are papers.

Conclusions:

- I. All papers are pens.
 - II. Some papers are pens.
- (1) Only conclusion I is correct.
 - (2) Only conclusion II is correct.
 - (3) Both conclusions I & II are correct.
 - (4) Neither conclusion I nor conclusion II is correct.

Answer (1)

76. Which diagram represents the relation between Ruble, Dollar and Rupee?

- (1)
- (2)
- (3)
- (4)

Answer (3)

77. Which diagram represents angle, side and triangle?

- (1)
- (2)
- (3)
- (4)

Answer (4)

78. Which diagram represents TV, Freeze and Cooler?

- (1)
- (2)
- (3)
- (4)

Answer (1)

79. Which diagram represents Boy, Girl and Man?

- (1)
- (2)
- (3)
- (4)

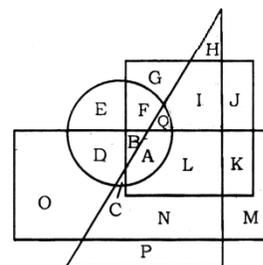
Answer (1)

80. Which diagram represents India, China and Russia?

- (1)
- (2)
- (3)
- (4)

Answer (2)

Direction (81 to 85) : Question Nos. 81 to 85 are based on the following diagram in which four figures (one circle, one square, one triangle and one rectangle) are overlapping each other. Different regions of the diagram are marked with letters A to Q. Read each question carefully and choose the correct alternatives.



81. In the given diagram which letter is inside the square and triangle, but outside the rectangle and circle?

- (1) G
- (2) I
- (3) L
- (4) F

Answer (3)

82. Which letter is outside the square and triangle, but inside the rectangle and circle?
- (1) D
 (2) B
 (3) C
 (4) A

Answer (1)

83. Which letter will come inside the square, circle and rectangle, but not inside the triangle?
- (1) E (2) D
 (3) C (4) B

Answer (4)

84. Which letter is inside of all the figures?
- (1) C (2) B
 (3) A (4) Q

Answer (3)

85. Which letter is inside the rectangle, square and triangle, but outside the circle?
- (1) B (2) C
 (3) A (4) L

Answer (4)

86. The director reached the conference hall for the meeting at 10 minutes earlier than 11:40 and found that his joint director who was 30 minutes late had reached 20 minutes earlier. What is the scheduled time of the meeting?
- (1) 11:40
 (2) 11:30
 (3) 11:20
 (4) 11:50

Answer (3)

87. A candidate joined an examination in which he answered 108 questions. In the examination every wrong answer will get negative $\frac{1}{3}$ rd mark and every correct answer will get 1 mark. If the candidate has got zero then how many wrong answers he has given?
- (1) 27 (2) 62
 (3) 54 (4) 81

Answer (4)

88. On my birthday my father distributed ₹280 in such a way that each girl gets ₹20 and each boy gets ₹10. If the number of girls is 2 more than the boys then how many boys were there?
- (1) 5 (2) 9
 (3) 10 (4) 8

Answer (4)

89. My mother's age is double of my sister. My father is 20 years elder than me. When my sister was born I was 5 years old. If my sister is at present 17 years old, then what is the difference of ages of my father and mother?
- (1) 5 years (2) 6 years
 (3) 7 years (4) 8 years

Answer (3)

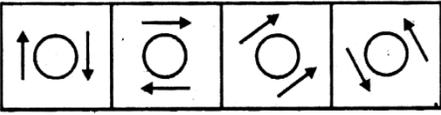
90. B's age is 4 years less than A. D's age is 4 years less than C, but $\frac{1}{4}$ th of A. If C's age is 8 years then B's age is how much time(s) of D?
- (1) 1 (2) 2
 (3) 3 (4) $\frac{1}{2}$

Answer (3)

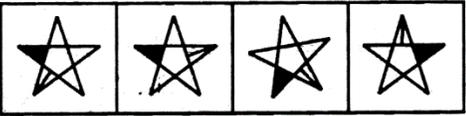
Direction (91 to 95) : In each question there are four figures 1, 2, 3 and 4. Among these four figures three are alike and one is different. Select the different figure.

91. 
- (1) (2) (3) (4)

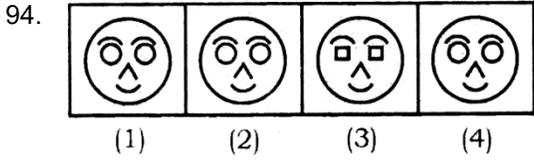
Answer (1)

92. 
- (1) (2) (3) (4)

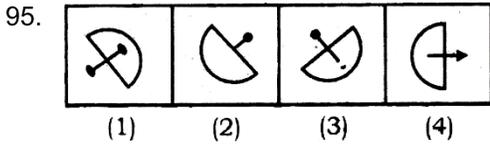
Answer (3)

93. 
- (1) (2) (3) (4)

Answer (2)



Answer (3)



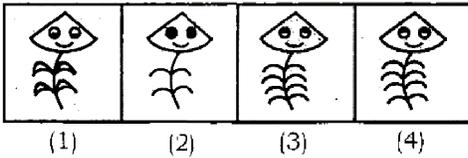
Answer (1)

Direction (96 to 100) : In the left of each question there is one question figure and to the right there are four answer figures 1, 2, 3 and 4. You have to select the similar figure to the question figure among the four answer figures.

96. Question figure

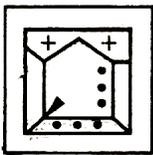


Answer figures

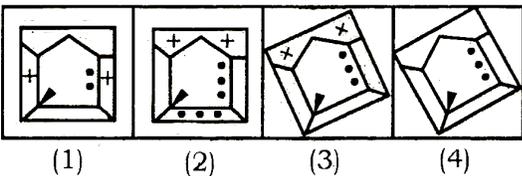


Answer (1)

97. Question figure

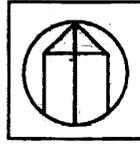


Answer figures

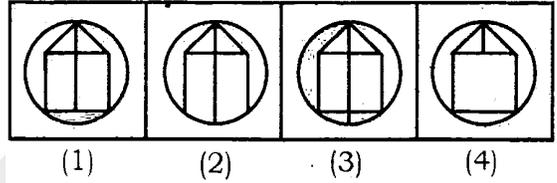


Answer (2)

98. Question figure

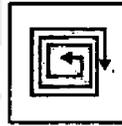


Answer figures

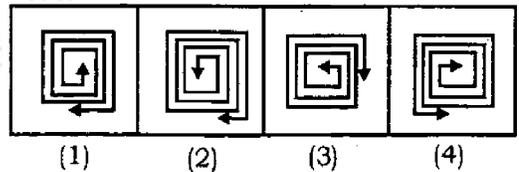


Answer (2)

99. Question figure

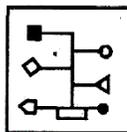


Answer figures

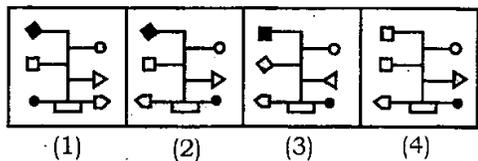


Answer (3)

100. Question figure



Answer figures



Answer (3)

PART-II : SCHOLASTIC APTITUDE TEST (SAT)

Physics

1. Which of the following terms does not represent electrical power in a circuit?

- (1) I^2R^2
 (2) IR^2
 (3) VI
 (4) V^2/R

Answer (2)

2. For a steady current I , the amount of heat H produced in time t is

- (1) IR^2t (2) IRt^2
 (3) I^2Rt (4) I^2R^2t

Answer (3)

3. What phenomenon of light causes the blue colour of the sky and the reddening of the sun at sunrise or sunset?

- (1) Reflection (2) Refraction
 (3) Scattering (4) Total internal reflection

Answer (3)

4. The power of a lens is -2.5 D. Its focal length is

- (1) -2.5 cm (2) $1 - 4$ D
 (3) -40 cm (4) -66.6 cm

Answer (3)

5. At focus F and between F and $2F$, a concave mirror always forms a

- (1) Real, inverted and magnified image
 (2) Virtual, erect and magnified image
 (3) Virtual, inverted and diminished image
 (4) Real, erect and diminished image

Answer (1)

6. What is the magnitude of force F on a charge q moving with a velocity v in a perpendicular magnetic field B ?

- (1) $\frac{qB}{v}$ (2) $\frac{vB}{q}$
 (3) qvB (4) $\frac{qv}{B}$

Answer (3)

7. Which of the following is most suitable for the core of electromagnets?

- (1) Air (2) Soft iron
 (3) Steel (4) Cu-Ni alloy

Answer (2)

8. Magnetic fields do not interact with

- (1) Electric charges at rest
 (2) Electric charges in motion
 (3) Permanent magnets at rest
 (4) Permanent magnets in motion

Answer (1)

9. Which of the following is correct?

- (1) joule = coulomb \times volt
 (2) joule = coulomb / volt
 (3) joule = volt / ampere
 (4) joule = ampere / volt

Answer (1)

10. A body can be negatively charged by

- (1) Giving some protons to it
 (2) Removing some neutrons from it
 (3) Giving electrons to it
 (4) Removing some electrons from it

Answer (3)

11. The resistances R_1 and are connected in parallel. The equivalent resistance of the combination is

- (1) $R_1 + R_2$ (2) $R_1 - R_2$
 (3) $\frac{R_1R_2}{R_1 + R_2}$ (4) $\frac{R_1 + R_2}{R_1R_2}$

Answer (3)

12. One ampere is synonymous with

- (1) Cs^{-1} (2) JC
 (3) JC^{-1} (4) NC^{-1}

Answer (1)

13. The ratio of the focal length of spherical mirror to its radius of curvature is

- (1) 0.5 (2) 1
 (3) 2 (4) 3

Answer (1)

Chemistry



The above reaction is an example of a

- (1) Combination reaction
- (2) Double displacement reaction
- (3) Decomposition reaction
- (4) Displacement reaction

Answer (4)

15. Select the mineral acid from the following

- (1) Acetic acid
- (2) Citric acid
- (3) Hydrochloric acid
- (4) Lactic acid

Answer (3)

16. Which of the following indicators is not an acid-base indicator?

- (1) Phenolphthalein
- (2) Vanila
- (3) Litmus
- (4) Methyl orange

Answer (2)

17. Which of the following methods is used to obtain chlorine and hydrogen from sodium chloride?

- (1) Electrolysis
- (2) Thermal heating
- (3) Evaporation
- (4) Electroplating

Answer (1)

18. Which of the following metals does not react with dilute hydrochloric acid to liberate hydrogen gas?

- (1) Calcium
- (2) Zinc
- (3) Iron
- (4) Silver

Answer (4)

19. Which of the following reactions is not a redox reaction?

- (1) $\text{Mg} + \text{Cl}_2 \rightarrow \text{MgCl}_2$
- (2) $\text{CuO} + \text{H}_2 \rightarrow \text{Cu} + \text{H}_2\text{O}$
- (3) $\text{AgNO}_3 + \text{NaCl} \rightarrow \text{AgCl} + \text{NaNO}_3$
- (4) $\text{MnO}_2 + 4\text{HCl} \rightarrow \text{MnCl}_2 + 2\text{H}_2\text{O} + 2\text{Cl}_2$

Answer (3)

20. In Aqua regia the ratio of concentrated HCl to concentrated HNO_3 is

- (1) 1 : 3
- (2) 3 : 1
- (3) 1 : 2
- (4) 2 : 1

Answer (2)

21. Ethane, with the molecular formula C_2H_6 has

- (1) 6 covalent bonds
- (2) 7 covalent bonds
- (3) 8 covalent bonds
- (4) 9 covalent bonds

Answer (2)

22. Glacial acetic acid is

- (1) An aqueous solution of alcohol
- (2) Vinegar
- (3) An aqueous solution of acetic acid
- (4) 100% pure ethanoic acid

Answer (3)

23. Which of the following is a non-metal and also a solid?

- (1) Iodine
- (2) Mercury
- (3) Boron
- (4) Hydrogen

Answer (1)

24. Propane has

- (1) 8 covalent bonds
- (2) 9 covalent bonds
- (3) 10 covalent bonds
- (4) 11 covalent bonds

Answer (3)

25. An element has electronic configuration 2, 8, 8, 1. Which statement is not correct about the element?

- (1) It is present in group 3
- (2) Its valency is one negative
- (3) It is present in group 1
- (4) It is present in 4th period

Answer (1, 2)

26. The property by which a large number of atoms of the same element get linked through covalent bonds forming long chains is called

- (1) Catenation
- (2) Polymerisation
- (3) Allotropy
- (4) Addition reaction

Answer (1)

Biology

27. Saliva contains an enzyme called

- (1) Amylase
- (2) Lypase
- (3) Pepsin
- (4) Tripsin

Answer (1)

28. Regulation of respiration is under the control of

- (1) Cerebrum
- (2) Cerebellum
- (3) Medula oblongata
- (4) Pons

Answer (3)

29. Embryo sac is found in

- (1) Endosperm (2) Embryo
(3) Ovule (4) Seed

Answer (3)

30. A pair of contrasting characters is called

- (1) Phenotype (2) Genotype
(3) Allele (4) Gene

Answer (3)

31. Which of the following is not used as biomass?

- (1) Plant waste (2) Wood
(3) Animal waste (4) Human excreta

Answer (4)

32. The green plants in a terrestrial ecosystem capture the energy of the sun about

- (1) 90% (2) 80%
(3) 70% (4) 10%

Answer (4)

33. The presence of which microorganism in Ganga water indicates contamination?

- (1) Lactobacillus bacteria
(2) Amoeba
(3) Coliform bacteria
(4) Mucor spores

Answer (3)

34. In which part of the alimentary canal digested food is absorbed?

- (1) Stomach (2) Appendix
(3) Large intestine (4) Small intestine

Answer (4)

35. Which of the following is a plant hormone?

- (1) Insulin (2) Thyroxine
(3) Oestrogen (4) Cytokinin

Answer (4)

36. Pollen grains are produced by

- (1) Ovary (2) Petal
(3) Seed (4) Anther

Answer (4)

37. Chromosomes are made up of

- (1) Proteins (2) DNA
(3) Both (1) and (2) (4) RNA

Answer (3)

38. The non-renewable source of energy amongst the following is

- (1) Coal energy (2) Nuclear energy
(3) Wood (4) Wind energy

Answer (1)

39. The structure formed by the union of male and female gametes is termed as

- (1) Embryo (2) Morula
(3) Zygote (4) Placenta

Answer (3)

40. The three R's to save the environment are

- (1) Reserve, Reduce, Recycle
(2) Reuse, Reserve, Reduce
(3) Reserve, Reuse, Reduce
(4) Reduce, Recycle, Reuse

Answer (4)

Mathematics

41. π is

- (1) An irrational number
(2) A rational number
(3) A prime number
(4) A composite number

Answer (2)

42. The value of $p(x) = x^2 - 3x - 4$ at $x = -1$ is

- (1) 1 (2) -4
(3) 0 (4) -3

Answer (3)

43. The solution of the equations $\frac{x}{a} + \frac{y}{b} = 2$ and $ax - by = a^2 - b^2$ is

- (1) $x = a, y = b$ (2) $x = -a, y = -b$
(3) $x = a, y = -b$ (4) $x = -a, y = b$

Answer (1)

44. The height of an equilateral triangle of side a is

- (1) $\frac{a}{2}$ (2) $a\sqrt{3}$
(3) $\frac{a\sqrt{3}}{2}$ (4) $\frac{a\sqrt{3}}{4}$

Answer (3)

58. The area swept out by a horse tied in a rectangular grass field with a rope 8 m long is

- (1) $16\pi \text{ m}^2$ (2) $64\pi \text{ m}^2$
(3) $48\pi \text{ m}^2$ (4) $32\pi \text{ m}^2$

Answer (2)

59. A tree breaks into two parts due to heavy wind such that the upper part makes an angle of 30° with the plane. The place where the upper part of the tree touches the ground is at a distance of 10 m from the base point of the tree. The height of the tree is

- (1) $10\sqrt{3} \text{ m}$ (2) $10\sqrt{2} \text{ m}$
(3) $\frac{10}{\sqrt{3}} \text{ m}$ (4) $5\sqrt{2} \text{ m}$

Answer (1)

60. If the perimeter and the area of a circle are equal numerically, then the diameter of the circle is

- (1) 2 units (2) π units
(3) 4 units (4) 7 units

Answer (3)

History

61. Who was responsible for the unification of Germany?

- (1) Bismarck (2) Garibaldi
(3) Cavour (4) Mazzini

Answer (1)

62. Printing press first came to India with

- (1) The English
(2) The French
(3) the Dutch
(4) Portuguese missionaries

Answer (4)

63. Champaran Satyagraha (1916) was launched by Gandhiji against

- (1) High revenue demands
(2) Indigo planters
(3) Mill owners
(4) Salt tax

Answer (2)

64. Which of the following emerged as the centre of world trade in the 18th century?

- (1) Europe (2) India
(3) China (4) America

Answer (1)

65. Which of the following ports lost its importance under colonial rule?

- (1) Calcutta (2) Bombay
(3) Surat (4) Madras

Answer (3)

66. The first Factories Act, to help keep children out of industrial work was passed in

- (1) 1870 (2) 1902
(3) 1906 (4) 1912

Answer (2)

67. For which of the following reasons was the Simon Commission boycotted?

- (1) It supported the Muslim League
(2) It did not recognise Congress as a party
(3) There was no Indian in the Commission
(4) There were differences among the members

Answer (3)

68. Munshi Premchand wrote on which of the following themes?

- (1) Religious and Mythological
(2) Oppression in society
(3) Historical
(4) Detective and mystery

Answer (2)

69. Akbar's court poet was

- (1) Tulsidas
(2) Abdur Rahim Khan Khana
(3) Amir Khusro
(4) Tukaram

Answer (2)

70. Which of the following was the reason for calling off the Non-Cooperation Movement by Gandhiji?

- (1) High pressure from the British government
(2) Round Table Conference
(3) Gandhiji's arrest
(4) The Chauri Chaura incident

Answer (4)

71. Which Sikh guru was executed by Aurangzeb?

- (1) Tegh Bahadur (2) Arjun Dev
(3) Hargobind (4) Govind Singh

Answer (1)

72. Where was the first Cotton Mill set up in India?

- (1) Ahmedabad (2) Kanpur
(3) Mumbai (4) Madras

Answer (3)

73. Which Mughal king died by a sudden fall from the staircase?

- (1) Babur (2) Akbar
(3) Jahangir (4) Humayun

Answer (4)

74. Which of the following newspapers was started by Bal Gangadhar Tilak?

- (1) Kesari (2) Jansatta
(3) The Statesman (4) Amrita Bazar Patrika

Answer (1)

75. Which king started the organization of Kumbh fair at Allahabad?

- (1) Harshavardhana (2) Dhruvasena II
(3) Narsimhavarnam (4) Akbar

Answer (1)

Geography

76. What per cent area of the whole country does mountain occupy?

- (1) 27% (2) 43%
(3) 30% (4) 50%

Answer (3)

77. Which wildlife is protected by the villagers of Bishnoi village in Rajasthan?

- (1) Chinkara (2) Elephant
(3) Tiger (4) Lion

Answer (1)

78. The system of agriculture when a single crop is grown on a large area is termed as

- (1) Shifting agriculture
(2) Horticulture
(3) Intensive agriculture
(4) Plantation agriculture

Answer (4)

79. Which is called the 'Queen of Arabian Sea'?

- (1) Venice (2) Kochin
(3) Surat (4) Lakshadwip

Answer (2)

80. Which one of the following agencies markets steel for the public sector plants?

- (1) HAIL (2) TATA steel
(3) SAIL (4) MNCC

Answer (2)

81. Which two of the following extreme locations are connected by the east-west corridor?

- (1) Mumbai and Kolkata
(2) Mumbai and Nagpur
(3) Nagpur and Siliguri
(4) Silchar and Porbandar

Answer (2)

82. Which is not the soil conservation method?

- (1) Contour planning
(2) Strip cropping
(3) Terracing of slopes
(4) Shelter belts

Answer (4)

83. Species found in isolated places only are called

- (1) Normal species
(2) Endemic species
(3) Vulnerable species
(4) Rare species

Answer (2)

84. Which of the following is not the purpose that modern dams serve?

- (1) Generation of hydroelectricity
(2) Industrial use
(3) Irrigation
(4) Inland navigation

Answer (4)

85. Rearing of silkworms for production of silk fibre is called

- (1) Interculture (2) Sericulture
(3) Horticulture (4) Pisciculture

Answer (2)

86. Which one of the following minerals is formed due to evaporation?

- (1) Chalk (2) Silica
(3) Petroleum (4) Gypsum

Answer (4)

87. Which one of the following minerals is not used in making cement?

- (1) Coal (2) Silica
(3) Aluminium (4) Copper

Answer (4)

88. Which one of the following countries imports iron ore from India?

- (1) USA (2) Japan
(3) Russia (4) China

Answer (4)

89. Which one of the following is a riverine port?

- (1) Kolkata (2) Mumbai
(3) Kandla (4) Vishakhapatnam

Answer (1)

90. The place of India in respect of rice cultivation is

- (1) First (2) Second
(3) Third (4) Fourth

Answer (1)

Civics

91. Which of the following are the two Ethnic groups in Sri Lanka?

- (1) Hindus and Muslims
(2) Sinhalese and Tamils
(3) Muslims and Christians
(4) Christians and Tamils

Answer (2)

92. The number of subjects given in Union List is

- (1) 47 (2) 66
(3) 85 (4) 97

Answer (4)

93. The policy of 'Apartheid' was adopted by the government of

- (1) U.S.A. (2) South Africa
(3) India (4) England

Answer (2)

94. Untouchability has been abolished in India by which of the following articles of the Constitution of India?

- (1) Article 14 (2) Article 15
(3) Article 16 (4) Article 17

Answer (4)

95. Democracy was re-established in Nepal in

- (1) 2005 (2) 2006
(3) 2007 (4) 2008

Answer (2)

96. Average income is

- (1) Total National Income / Population of the country
(2) Per Capita Income / Total National Income
(3) National Wealth / Per person of the country
(4) National Capital / National Budget

Answer (2)

97. Tertiary Sector has become an important part of Indian economy on account of

- (1) Development of agriculture and industry
(2) Rise in levels of income
(3) Both (1) and (2)
(4) None of these

Answer (3)

98. The main function of Reserve Bank of India is

- (1) Providing loans
(2) Credit control
(3) Dealing with World bank
(4) None of these

Answer (2)

99. MNC is a company

- (1) That owns or controls production in more than one nation
(2) That owns or controls production in one nation
(3) That owns or controls production outside the nation
(4) All of these

Answer (1)

100. Which of the following does not fall under consumer rights?

- (1) Right to be informed
(2) Right to choose
(3) Right to seek government help
(4) Right to represent in the consumer courts

Answer (4)

