2022
APTITUDE COMPETITION
CLASS-X
Time Allowed: 3(Three) hours

INSTRUCTIONS*:*

This booklet contains 60 questions. Each question comprises four possible answers. Select ONLY ONE answer which you consider the best and mark it on the answer sheet. All questions carry equal marks. No marks will be deducted for incorrect answers.

1. Choose the word which is most similar in meaning to the word REVEAL.

   (A) CONCEAL (B) UNFOLD

   (C) CONFINE (D) AFFIRM

2. Antonym for the word GENUINE is:

   (A) CREATIVE (B) CERTAIN

   (C) IMITATIVE (D) FACTUAL

3. Which among the following words means simple/innocent?

   (A) Childlike (B) Childish

   (C) Chide (D) Childhood

4. Change the following sentence into indirect speech:

   "Why did you travel by bus?" I asked him.

   (A) I asked him why did he travel by bus (B) I asked him why he had travelled by bus

   (C) I asked him that why he had travel by bus (D) I inquired him why had he travelled by bus

5. Change the voice of the sentence given below:

   It is time to take tea.

(A) It is time that tea was taken

(B) It is time that tea should be taken.

(C) It is time for tea to be taken

(D) It is time that tea had to be taken

6. Find out the correct sentence or sentences.

(A) I provided him money

(B) I provided him with money

(C) I provided money to him

(D) both (B) and (C)

7. Complete the sentence with a suitable option:

Miranda likes tea but I .....

(A) wasn't

(B) don't

(C) haven't

(D) amn't

8. Fill in the blank with the appropriate preposition:

He is born ..... an intelligent mother

(A) from

(B) with

(C) of

(D) by

9. Change the narration:

The teacher told the boy," Go out at once."

(A) The teacher ordered the boy to go out at once.

(B) The teacher order to the boy to get out

(C) The teacher had ordered that the boy to be get out at once

(D) The teacher ordered the boy to go out at once

10. Complete the sentence with the suitable option given under:

He didn't lend me the newspaper because he was going.....it.

(A) over

(B) through

(C) about

(D) on

(Read the following passage carefully and answer questions 11 to 15)

He travelled for several kilometres that day, but all he could find to eat or drink was some dry bread and water, which he got from farmers and cottagers. He dozed off beneath a haystack that was lying in a meadow as night fell. He initially felt scared since the wind blew terribly across the deserted pastures. In addition to being hungry and cold, he was also feeling more lonely than ever. However, he soon fell asleep because he was so exhausted after his long walk. The following morning, when he awoke, he was incredibly hungry, so with the little coins he had, he bought a loaf of bread and ate. He started to walk again aimlessly in the vast expanse of farmland. He felt a pang of remorse and cursed himself for the events. He saw a faint image of a little girl standing near a hut waving towards him. He felt a little dizzy and looked up. The scorching sun was above his head. He looked again towards the girl, she was no more there. He started to cry and collapsed to the ground.

11. When the darkness fell, he slept...

    (A) in the open fields
    (B) under a pile of dry grass
    (C) under a tree
    (D) in a farmer's cottage

12. He soon fell asleep because

    (A) He was all alone
    (B) He was very scared
    (C) he had not slept for days
    (D) He was exhausted

13. He felt scared because

    (A) he was lonely
    (B) it was dark
    (C) the wind was blowing swiftly over the empty fields
    (D) the area was under enemy territory

14. Which statement is correct about the passage

    (A) He was walking through the countryside
    (B) He was in the enemy territory
    (C) Neither (A) nor (B)
    (D) both (A) and (B)

15. What did the man see towards noon?

(A) He saw birds above his head (B) He saw a little girl

(C) He saw no one (D) He saw a mother and a child

16. If 8 is a factor of $m^2 - 1$, then m is

(A) any integer (B) an even integer

(C) an odd integer (D) a natural number

17. For some integer k, an odd integer can be represented in the form of

(A) $k + 1$ (B) $2k - 1$

(C) $k - 1$ (D) 2k

18. The zeroes of the polynomial $x^2 + 3x + 2$ are

(A) 1 & 2 (B) -1 & 2

(C) -1 & -2 (D) 1 & -2

19. The two zeroes of the polynomial $cx^2 + bx + a$, $a \neq 0$ are equal, then

(A) c and b are of the same sign. (B) a and b are of the opposite sign.

(C) a and c are of the same sign. (D) c and a are of the opposite sign

20. If $sin^6\alpha + cos^6\alpha + 3sin^2\alpha.cos^2\alpha - 1 = \lambda$, then the value of λ is

(A) 1 (B) 0

(C) – 1 (D) such value of λ does not exist.

21. When you came out of your home for school, the length of your shadow is $\sqrt{3}$ times of your height, then what is the altitude of the sun at that time?

(A) 45^0 (B) 60^0

(C) 30^0 (D) 90^0

22. $\frac{1-cos^2\alpha}{cos^2\alpha} \times (1 - cosec^2\alpha)$ is equal to

(A) 1 (B) $cot^2\alpha$

(C) $tan^2\alpha$ (D) -1

23. If $\tan(9\alpha) = \cot(\alpha), 9\alpha < 90^0$ then the value of $cosec(9\alpha)$ is

(A) $\sqrt{2}$ (B) $\frac{1}{\sqrt{2}}$

(C) 1 (D) $\frac{2}{\sqrt{3}}$.

24. The Pythagorean relation $sec^2\theta - tan^2\theta = 1$ is valid for all values of θ lying in

(A) $0^0 < \theta < 90^0$ (B) $0^0 \leq \theta < 90^0$

(C) $0^0 < \theta \leq 90^0$ (D) $0^0 \leq \theta \leq 90^0$

25. The value of $sin58^0.cos32^0 + sin32^0 cos58^0$ is

(A) $2tan58^0$ (B) $2sin58^0.cos32^0$

(C) 0 (D) 1

26. The angle of elevation of the top of a tower of height $100\sqrt{3}m$ from a point on the ground is 60^0. The distance of the point from the foot of the tower is

(A) $100m$ (B) $\frac{100}{\sqrt{3}}$

(C) $200\sqrt{3}$ (D) $50\sqrt{3}m$

27. The linear equation representing the line that intersects the line representing the equation $2x + y = 3$ is

(A) $2x + y - 6 = 0$ (B) $3x - 2y + 6 = 0$

(C) $4x + 2y = 3$ (D) $10x + 5y = 15$.

28. If α and β are the roots of the equation $px^2 - x + q = 0$, then $(\alpha + 1)(\beta + 1)$ is equal to

(A) $\frac{p+q-1}{p}$ (B) $\frac{1-p-q}{p}$

(C) $\frac{p+q+1}{p}$ (D) $\frac{1+p+q}{q}$.

29. For what value of k, the following pair of equations $x - y - 1 = 0$ and $-2x + ky + 3 = 0$ have no solutions?

(A) - 2 (B) 2

(C) 1 (D) - 1

30. The largest number which divides the product of three consecutive even numbers is

(A) 3 (B) 12

(C) 24 (D) 48

31. Which of the following statement is not true about real numbers?

(A) All real numbers have additive inverses. (B) All real numbers possess multiplicative inverses.

(C) Subtraction of real numbers is not associative. (D) Different real numbers may have the same absolute value.

32. When a polynomial is divided by the $x - 1$, the quotient and remainder are $x^2 - 2x + 3$ and 3 respectively. The polynomial is

(A) $x^3 - 3x^2 - 5x$ (B) $3x^3 + x^2 + 5x$

(C) $x^3 - 3x^2 + 5x$ (D) $x^3 + 3x^2 - 5x$

33. The canonical decomposition of 133848 is

(A) $2^3 \times 3^2 \times 11 \times 13^2$ (B) $2^3 \times 3^3 \times 11 \times 13^2$

(C) $2^2 \times 3^2 \times 11 \times 13^2$ (D) $2^3 \times 3^2 \times 11 \times 13$

34. By what largest prime number may 519 be divided so that the remainder is 7?

(A) 2 (B) 3

(C) 7 (D) 5

35. If the quadratic equation $kx^2 + 6x + 3k = 0$ has equal roots, then the value of k is

(A) ± 1 (B) $\pm 2\sqrt{3}$

(C) $\pm 3\sqrt{2}$ (D) $\mp\sqrt{3}$

36. If the sum of the first n terms of an A.P. is $S_n = \frac{n}{2}(5n + 7)$, then the common difference between the A.P. is

(A) -5 (B) -7

(C) 5 (D) 7

37. For the quadratic equation $ax^2 + bx + c = 0$, if $b^2 - 4ac$ is negative, then the roots of the equation are

(A) rational (B) real and unequal

(C) integers (D) not real numbers

38. If $a^3 + b^3 + c^3 - 3abc = 0$ and $a + b + c \neq 0$, then

(A) $a = b = c$ (B) $a = b = c = 0$

(C) $a = b = c = 1$ (D) $a \neq b \neq c$

39. If $x + y = 1, y + z = 2, z + x = -3$, then the value of $yz(y + z) + zx(z + x) + xy(x + y) + 2xyz$ is

(A) 6 (B) -12

(C) -6 (D) 0

40. The sum of the first 25 terms of an A.P. whose 3rd and 7th terms are respectively 3 and 5 is

(A) 100 (B) 150

(C) 300 (D) 200

41. When did the Dandi March occur?

(A) March-April, 1943 (B) March-April, 1930

(C) March-April, 1931 (D) March-April, 1923

42. What is the meaning of Purna Swaraj?

(A) Complete Independence
(B) Boycott of foreign goods
(C) Complete revolution
(D) Free from prison

43. Name the war that completed the process of the unification of both Germany and Italy.

(A) Franco-Prussian War
(B) Civil War
(C) Franco-Austrian War
(D) Austrian Nationalist War

44. Who founded Young Italy?

(A) Otto von Bismarck
(B) Count Cavour
(C) Garibaldi
(D) G. Mazzini

45. Barter economy refers to-

(A) Money as a medium of exchange
(B) Goods are exchanged for goods
(C) Sharing of thoughts
(D) Money is exchanged for goods

46. The duration of the First World War (WW I) was

(A) 1914-1919
(B) 1939-1945
(C) 1924-1936
(D) 1944-1946

47. Which of the following is a metallic mineral?

(A) Mica
(B) Manganese
(C) Graphite
(D) Sulphur

48. When was Project Tiger launched?

(A) 1992
(B) 1973
(C) 1956
(D) 1988

49. Which of the following is a renewable resource?

(A) Coal
(B) Forest

(C) Petroleum (D) Natural Gas

50. Which soil is best for cultivation?

(A) Red Soil (B) Laterite Soil

(C) Black Soil (D) Alluvial Soil

51. The vein which brings clean blood from the lungs into the heart is known as

(A) Pulmonary vein (B) Superior vena cava

(C) Pulmonary artery (D) Hepatic vein

52. Proteins after digestion are converted into

(A) Carbohydrates (B) Small globules

(C) Amino acids (D) Starch

53. 1 *nano ampere* is equal to

(A) 10^{9} A (B) 10^{6} A

(C) 10^{-6} A (D) 10^{-9} A

54. Photosynthesis is a

(A) Catabolic process (B) Amphibolic process

(C) Anabolic process (D) Parabolic process

55. In which part of the alimentary canal food is finally digested?

(A) Stomach (B) Mouth cavity

(C) Large intestine (D) Small intestine

56. A milkman added a small amount of Baking Soda to fresh milk which had a pH value close to 6. As a result, the pH value of the medium...

(A) became close to 2 (B) became close to 4

(C) did not undergo any change (D) became close to 8

57. In NH_4^+ all four bonds are

(A) not identical
(B) co-ordinate
(C) co-valent
(D) identical

58. Two elements X and Y belong to groups 1 and 2 respectively in the same period. The formulae of these oxides are

(A) XO, YO
(B) X_2O, YO
(C) X_2O, Y_2O
(D) XO, YO_2

59. An electric iron of resistance 20Ω takes a current 5A. Calculate the heat developed in 30s.

(A) 150 W
(B) 1.5 kW
(C) 15 kW
(D) 150 kW

60. A wire is stretched to double its original length. The new resistivity of the wire will

(A) be doubled
(B) remain constant
(C) be four times
(D) reduce to half