

Lab Asstt.

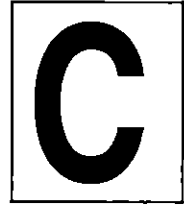
LAN/22

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE ASKED TO DO SO.

PRELIMINARY SCREENING

TEST BOOKLET

TEST BOOKLET SERIES



Time allowed : $1\frac{1}{2}$ hours

Full marks : 100

Answer *all* the questions.

Questions are of equal value.

Serial No. **3847**

Roll No.:

Signature of the Candidate:

INSTRUCTIONS

Candidates should read the following instructions carefully before answering the questions:

1. This booklet consists of 12 pages including this front page, containing 100 questions. **Verify the Page Nos. and Test Booklet series on each page and bring at once to the Invigilator's notice any discrepancy.**
2. Answers will have to be given in the OMR Sheet supplied for the purpose.
3. Before you proceed to mark in the OMR Sheet in response to various items in the Test Booklet, you have to fill in some particulars in the OMR Sheet. **Do not fold the OMR Sheet as this will result in error in your marks.**
4. All questions are of multiple-choice answer-type. You will find *four* probable answers (A), (B), (C) and (D) against each question. Find out which of the four answers appears to you to be correct or the best. Now darken the circle corresponding to the letter of the selected answer in the OMR Sheet with **Black Ball Point Pen**.
5. One and only one circle is to be fully blackened for answer. Any spot in any other circle (multiple circle) or in wrong circle will be considered as wrong answer. If more than one circle is encoded for a particular answer, it will be treated as a wrong answer. Use of whitener is strictly prohibited.
6. **There will be negative marking of $\frac{1}{3}$ mark for each wrong answer.**
7. **There is a blank page at the end of this Booklet for Rough Work.**
8. **The OMR Sheet should be handed over to the Invigilator before leaving the Examination Hall. You are permitted to take away the used Test Booklet after completion of the examination.**

1. Who was the second Foreign Minister of India?

- (A) Lal Bahadur Shastri
- (B) Jawahar Lal Nehru
- (C) Gulzarilal Nanda
- (D) Salman Khurshid

2. Identify the isoelectronic pair —

- (A) Cl^- , K^+
- (B) Na^+ , O^-
- (C) Mg^{2+} , Ne
- (D) He^+ , I^-

3. In ammonia, valency of nitrogen is

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

4. Identify the amphoteric oxide —

- (A) CaO
- (B) ZnO
- (C) CO_2
- (D) SO_2

5. In the following question, arrange the given words as per order in the dictionary:

- (a) Consume
 - (b) Consciousness
 - (c) Conscience
 - (d) Consequence
- (A) (c), (b), (a), (d)
 - (B) (c), (a), (b), (d)
 - (C) (c), (d), (b), (a)
 - (D) (c), (b), (d), (a)

6. Maximum number of molecule present in —

- (A) 1g CO_2
- (B) 1g N_2
- (C) 1g H_2
- (D) 1g CH_4

7. A tank is filled in 5 hrs by three pipes A, B and C. The pipe C is twice as fast as B and B is twice as fast as A. How much time will pipe A alone take to fill the tank?

- (A) 20 hrs
- (B) 25 hrs
- (C) 35 hrs
- (D) 40 hrs

8. Identify the pair of isotone —

- (A) ${}_1\text{H}^3$, ${}_2\text{He}^4$
- (B) ${}_8\text{O}^{16}$, ${}_8\text{O}^{17}$
- (C) ${}_6\text{C}^{12}$, ${}_6\text{C}^{14}$
- (D) None of the above

9. Fill in the blanks with appropriate articles:

_____ more you read, _____ more you learn.

- (A) A, a
- (B) The, a
- (C) The, the
- (D) A, the

10. A large magnet is broken into two pieces so that their lengths are in the ratio 2 : 1. The pole strength of the pieces will be

- (A) in the ratio 2 : 1.
- (B) in the ratio 1 : 2.
- (C) in the ratio 4 : 1.
- (D) equal.

11. Which organic substance can be dissolved in water?

- (A) Urea
- (B) Benzene
- (C) Carbon tetrachloride
- (D) None of the above

12. The compound interest on Rs. 30,000 at 7% per annum is Rs. 4,347. The period (in years) is

- (A) 2
- (B) $2\frac{1}{2}$
- (C) 3
- (D) 4

13. Lake Tanganyika is the world's longest freshwater lake located in

- (A) Asia
- (B) North America
- (C) Africa
- (D) Australia

14. Rust can be dissolved in

- (A) hydrochloric acid
- (B) oxalic acid
- (C) acetic acid
- (D) sulphuric acid

15. Number of electron present in 'L' orbital of ${}_8\text{X}^{16}$

- (A) 2
- (B) 6
- (C) 8
- (D) 10

16. Number of molecule in 88g CO_2 —

- (A) 6.023×10^{23}
- (B) 3.023×10^{23}
- (C) 12.046×10^{23}
- (D) 12.046×10^{22}

17. To measure the current in an electrical device

- (A) put an ammeter in parallel with it.
- (B) put a voltmeter in parallel with it.
- (C) put an ammeter in series with it.
- (D) put a voltmeter in series with it.

18. Zinc and copper are melted together in the ratio 9:11. What is the weight of melted mixture, if 28.8 kg of zinc has been consumed in it?

- (A) 58 kg
- (B) 60 kg
- (C) 64 kg
- (D) 70 kg

19. A person jumps from a moving bus, then person falls in

- (A) forward direction
- (B) backward direction
- (C) straight direction
- (D) None of the above

20. If a commission of 10% is given on the written price of an article, the gain is 20%. If the commission is increased to 20%, the gain is

- (A) $6\frac{2}{3}\%$
- (B) $7\frac{1}{4}\%$
- (C) $12\frac{1}{2}\%$
- (D) $13\frac{1}{3}\%$

21. Which was the only Session of Congress presided by M.K. Gandhi?

- (A) Lahore Session
- (B) Belgaum Session
- (C) Lucknow Session
- (D) Calcutta Session

Please Turn Over

22. What is the full form of UPI?
(A) United Paying Interface
(B) Unlimited Payment Interface
(C) Unified Payment Interface
(D) Unified Paying Interface
23. Two trains are running at 40 km/hr and 20 km/hr respectively in the same direction. Fast train completely passes a man sitting in the slower train in 5 seconds. What is the length of the fast train?
(A) 23 m
(B) $23\frac{2}{9}$ m
(C) 27 m
(D) $27\frac{7}{9}$ m
24. In which year India hosted the World Forestry Congress (WFC)?
(A) 1952
(B) 1954
(C) 1957
(D) 1959
25. In the given number series, choose the correct alternative that will continue the same pattern and replace the question mark '?' in the given series.
5, 3, 4, 7.5, ?, 45, 138
(A) 17.25
(B) 17
(C) 16.93
(D) 15
26. A two digit number is such that the product of the digits is 8. When 18 is added to the number, then the digits are reversed. The number is
(A) 18
(B) 24
(C) 42
(D) 81
27. Which of the following Indian has not been awarded by Pulitzer Prize?
(A) Adnan Abidi
(B) Sanna Irshad Matoo
(C) Amit Dave
(D) Vikram Seth
28. What is the currency of Spain?
(A) US Dollar
(B) Euro
(C) Spanish Dollar
(D) Rupees
29. Six bells commence tolling together and toll at intervals of 2, 4, 6, 8, 10 and 12 seconds respectively. In 30 minutes, how many times do they toll together?
(A) 4
(B) 10
(C) 15
(D) 16
30. The minimum distance between the source of sound and a reflector, so that an echo is heard, is approximately equal to
(A) 50 m
(B) 10 m
(C) 34 m
(D) 17 m
31. The change of state from solid to vapour directly is called
(A) vaporisation
(B) sublimation
(C) regelation
(D) condensation
32. A yellow flower if look through a red glass will appear as
(A) red
(B) yellow
(C) black
(D) blue

33. Green vitriol is
(A) $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$
(B) $\text{ZnSO}_4 \cdot 7\text{H}_2\text{O}$
(C) $\text{Na}_2\text{CO}_3 \cdot 10\text{H}_2\text{O}$
(D) $\text{FeSO}_4 \cdot 7\text{H}_2\text{O}$
34. The electro-motive force developed in a circuit opposes the cause to which it is due. — This is
(A) Lambert's law
(B) Lenz's law
(C) Faraday's law
(D) Newmann's law
35. Which of the following is most harmful for the human being?
(A) Beta particles
(B) Ultraviolet radiations
(C) X-rays
(D) Gamma radiation
36. Identify the ionic compound —
(A) NH_3
(B) Al_2O_3
(C) CH_4
(D) $\text{C}_6\text{H}_{12}\text{O}_6$
37. The sum of three numbers is 136. If the ratio between first and second be 2:3 and that between second and third is 5:3, then the second number is
(A) 40
(B) 48
(C) 60
(D) 72
38. Out of the following which is not a part of "Utkarsh Drive"?
(A) Ganga Swaroopa Aarthik Sahay Yojana
(B) Indira Gandhi Vrudh Sahay Yojana
(C) Varistha Pension Bima Yojana
(D) Rashtriya Kutumb Sahay Yojana
39. The physical quantity which is equal to the change in momentum of a body is known as
(A) Force
(B) Newton
(C) Impulse
(D) Reaction
40. Where did the 2nd India-Nordic summit, 2022 take place?
(A) Copenhagen, Denmark
(B) Helsinki, Finland
(C) Oslo, Norway -
(D) Stockholm, Sweden
41. Formula of Oleum —
(A) H_2SO_4
(B) $\text{H}_2\text{S}_2\text{O}_7$
(C) HS_2O_7
(D) H_2SO_7
42. The mirror used as a rear view mirror in cars is
(A) convex
(B) plane
(C) concave
(D) parabolic
43. A rolling stone gathers no moss: This is a _____.
(A) compound sentence
(B) complex sentence
(C) complex-compound sentence
(D) simple sentence

44. Number of covalent bond present in C_4H_{10} —

- (A) 8
- (B) 9
- (C) 12
- (D) 13

45. X can do a piece of work in 40 days. He works at it for 8 days and Y finished the remaining in 16 days. How long will they together take to complete the work?

- (A) $13\frac{1}{3}$ days
- (B) $15\frac{1}{2}$ days
- (C) 54 days
- (D) 17 days

46. 1 amu = _____ g.

- (A) 1.6603×10^{-24}
- (B) 6.023×10^{23}
- (C) 3.0115×10^{23}
- (D) 5.02×10^{-20}

47. Which strait lies between the Andaman Sea and the South China Sea?

- (A) Palk strait
- (B) Malacca strait
- (C) Sunda strait
- (D) Bering strait

48. Which of the following is the source of *e.m.f*?

- (A) Lead accumulator
- (B) Voltmeter
- (C) Ammeter
- (D) Galvanometer

49. The ratio of the first and second class train fares between two stations is 3 : 1 and that of the passengers travelling between the two stations by first and second class is 1 : 50. If a particular day, Rs. 1,325 are collected from passengers travelling between the two stations, then the amount collected from the second class passengers is

- (A) Rs. 1,250
- (B) Rs. 1,000
- (C) Rs. 850
- (D) Rs. 750

50. Find the odd one —

- (A) Niter
- (B) Glauber salt
- (C) Green vitriol
- (D) Epsom salt

51. Where are Bandhavgarh and Panna National Park located?

- (A) Orissa
- (B) Uttar Pradesh
- (C) Madhya Pradesh
- (D) Kerala

52. Join the following sentences into a single sentence:

You saw the man last night. He is a physician.

- (A) You saw the man last night who is a physician.
- (B) The man whom you saw last night is a physician.
- (C) He is a physician whom you saw last night.
- (D) He is a physician who saw you last night.

53. Valency of anion in aluminium nitride —

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

54. Identify the hygroscopic substance —

- (A) CaO
- (B) Conc. H_2SO_4
- (C) SiO_2
- (D) All of the above

55. In STP, 56g of a gas occupies 44.8L. The formula of the gas —

- (A) N_2
- (B) CO_2
- (C) O_2
- (D) NH_4

56. With reference to the 'Lavender festival of India', which of the following statements are correct?

- (a) In 2022 such festival taken place in India for the first time.
- (b) It is an initiative of Union Ministry of Science and Technology.
- (c) It aims to promote the cultivation of aromatic crops for essential oil.

Select the correct answer using the code given below:

- (A) (a) and (b)
- (B) (c) only
- (C) (a) and (c)
- (D) All of the above

57. Change into indirect speech:

Mohit said, "I have decided to rent the shop."

- (A) Mohit said that he has decided to rent the shop.
- (B) Mohit said that he had decided to rent the shop.
- (C) Mohit told that he decided to rent the shop.
- (D) Mohit told that he was decided to rent the shop.

58. A cricket team won 3 matches more than they lost. If a win gives them 2 points and loss (-1) point, how many matches, in all, have they played if their score is 23?

- (A) 17
- (B) 20
- (C) 37
- (D) 40

59. To a sugar solution of 3 litres containing 40% sugar, one litre of water is added. The percentage of sugar in the new solution is

- (A) $13\frac{1}{3}\%$
- (B) 15%
- (C) 30%
- (D) 33%

60. When was the first meeting of the constituent assembly of India held?

- (A) December 9, 1946
- (B) December 6, 1946
- (C) December 14, 1945
- (D) December 18, 1945

61. A transformer is used to change

- (A) mechanical energy into electrical energy.
- (B) electrical energy into mechanical energy.
- (C) high voltage D.C. into low voltage D.C.
- (D) high voltage A.C. into low voltage A.C.

62. When a pendulum is taken from earth to moon surface, its time period will

- (A) remain same
- (B) become infinite
- (C) increase
- (D) decrease

Please Turn Over

63. Change into negative:

As soon as the rain set in, we returned home.

- (A) No sooner had the rain set in than we returned home.
- (B) No sooner does the rain set in than we returned home.
- (C) Hardly the rain set in than we returned home.
- (D) The rain set in and we returned home.

64. Convert into active voice:

A very remarkable discovery was made by Prof. S N Bose.

- (A) Prof. S N Bose made a discovery very remarkable.
- (B) Prof. S N Bose made a very remarkable discovery.
- (C) Prof. S N Bose had made a very remarkable discovery.
- (D) Prof. S N Bose has made a very remarkable discovery.

65. Out of the following which country tops the World Press Freedom Index, 2022?

- (A) Sweden
- (B) Denmark
- (C) Norway
- (D) Poland

66. If a meaningful word can be formed by rearranging the letters 'USCALA', the first letter of the word so formed is the answer. If no such word can be formed the answer is

- (A) C
- (B) S
- (C) A
- (D) N

67. Fill in the blank with the correct alternative:

Neither praise nor blame _____ to affect him.

- (A) seems
- (B) seem
- (C) does not seem
- (D) do not seem

68. When ice melts the volume of water produced from melting ice

- (A) increases
- (B) decreases
- (C) remains same
- (D) first increases then decreases

69. Which of the following is correct for the order of colours present in white light?

- (A) VIBGYOR
- (B) VIYGOBR
- (C) VBIYORG
- (D) VIGBOYR

70. The radius of curvature of a plane surface is

- (A) infinity
- (B) zero
- (C) 2π
- (D) Anything

71. The speed of light in air is

- (A) $3 \times 10^{10} \text{ ms}^{-1}$
- (B) $3 \times 10^8 \text{ ms}^{-1}$
- (C) $5 \times 10^9 \text{ ms}^{-1}$
- (D) 330 ms^{-1}

72. Valency of the element having atomic no. 9 —

- (A) 1
- (B) 2
- (C) 3
- (D) 0

73. When did the Portuguese leave India?

- (A) 1955
- (B) 1789
- (C) 1777
- (D) 1961

74. Which element has highest reducing power?
 (A) Na
 (B) Li
 (C) Rb
 (D) Cs
75. A boat covers 24km upstream and 36 km downstream in 6 hours while it covers 36 km upstream and 24km downstream in $6\frac{1}{2}$ hours. The velocity of current is
 (A) 1 km/hr
 (B) 1.5 km/hr
 (C) 2 km/hr
 (D) 2.5 km/hr
76. What should be the least number of years in which the simple interest on Rs. 2,600 at $6\frac{2}{3}\%$ will be an exact number of rupees?
 (A) 2
 (B) 3
 (C) 4
 (D) 6
77. Value of pH lower in —
 (A) sodium bicarbonate
 (B) sodium hydroxide
 (C) hydrochloric acid
 (D) potassium hydroxide
78. Don't we bleed when we are pricked?
 The noun form of the underlined word is
 (A) Brave
 (B) Blood
 (C) Wit
 (D) Clever
79. Fill in the blank with the correct preposition given below:
 The freedom fighter died _____ the country.
 (A) of
 (B) on
 (C) to
 (D) for
80. Number of electron present in 1.6g methane —
 (A) 6.023×10^{22}
 (B) 6.023×10^{23}
 (C) 6.023×10^{24}
 (D) 6.023×10^{25}
81. Change into passive voice:
 The cakes eat crisp.
 (A) Crisp are the cakes when you eat.
 (B) Crisp are the cakes when you eat them.
 (C) When you eat the cakes, they are crisp.
 (D) The cakes are crisp when they are eaten.
82. A is twice as fast as B and B is thrice as fast as C. The journey covered by C in 54 minutes will be covered by B in
 (A) 18 minutes
 (B) 27 minutes
 (C) 38 minutes
 (D) 9 minutes
83. Find the odd one —
 (A) 22g CO₂
 (B) 16g O₂
 (C) 28g N₂
 (D) 1g H₂

84. Bohr's theory is applicable for
(A) He⁺
(B) Li⁺
(C) Be
(D) Ca
85. Valency of anion in calcium phosphate is
(A) 1
(B) 2
(C) 3
(D) 4
86. The least perfect square number divisible by 3, 4, 5, 6 and 8 is
(A) 900
(B) 1200
(C) 2500
(D) 3600
87. Atom 'X' has three orbitals, the last orbital contains 2 electrons. Atomic number of X is
(A) 2
(B) 6
(C) 8
(D) 12
88. What is the type of lever where the effort is placed somewhere between the fulcrum and the load?
(A) Class I
(B) Class II
(C) Class III
(D) May be any type
89. The working of rocket is based on the principle of
(A) Newton's 3rd law.
(B) Kepler's law.
(C) law of conservation of linear momentum.
(D) law of conservation of angular momentum.
90. What is the total number of members in BIMSTEC?
(A) Seven
(B) Five
(C) Twelve
(D) Fourteen
91. In a certain code 'GONE' is written as 5%2# and 'MEDAL' is written as 4#3\$@, then how will 'GOLD' be written in that code?
(A) 5@%3
(B) 5#@3
(C) 5%#3
(D) 5%@3
92. 2 men and 3 boys can do a piece of work in 10 days while 3 men and 2 boys can do the same work in 8 days. In how many days can 2 men and 1 boy do the work?
(A) 12 days
(B) $12\frac{1}{2}$ days
(C) 15 days
(D) $15\frac{1}{2}$ days

93. 3.0115×10^{23} electrons = _____ mole of electron.

- (A) 0.5
- (B) 2
- (C) 4
- (D) 0.05

94. Number of crystalline water present in glauber salt —

- (A) 10
- (B) 12
- (C) 5
- (D) 7

95. Which one is more stable?

- (A) O
- (B) O^-
- (C) $O^=$
- (D) All of the above

96. The least number, which when divided by 48, 60, 72, 108 and 140 leaves 38, 50, 62, 98 and 130 as remainders respectively, is

- (A) 11115
- (B) 15110
- (C) 15120
- (D) 15210

97. Number of crystalline water present in sodium chloride salt —

- (A) 3
- (B) 2
- (C) 1
- (D) 0

98. When you go from equator to poles of earth the value of acceleration due to gravity

- (A) increases
- (B) decreases
- (C) remains same
- (D) becomes zero

99. A started a business with Rs. 21,000 and is joined afterwards by B with Rs. 36,000. After how many months did B join if the profits at the end of the year are divided equally?

- (A) 3
- (B) 4
- (C) 5
- (D) 6

100. A dishonest dealer professes to sell his goods at cost price. But he uses a false weight and thus gain $6\frac{18}{47}\%$. For a kg, he uses a weight of

- (A) 940 gms
- (B) 947 gms
- (C) 953 gms
- (D) 960 gms