

**Important Instructions :**

1. The test is of **1 hour 40 minutes** duration and the Test Booklet contains **100** multiple-choice questions ( four options with a single correct answer ) from **Mathematics, Science and General Knowledge**.
2. Each Question carries **4** marks. For each correct response, the candidate will get **4** marks. For each incorrect response, **one** mark will be deducted from the total scores. **The maximum marks are 400**.
3. Use **Blue/Black Ball Point Pen only** for marking responses on Answer Sheet.
4. Rough work is to be done in the space provided for this purpose in the Test Booklet only.
5. On completion of the test, the candidate **must hand over the Answer Sheet to the Invigilator** before leaving the Room/Hall. The candidates are allowed to take away this Test Booklet with them.
6. The candidates should ensure that the Answer Sheet is not folded. Do not make any stray marks on the Answer Sheet. Do not write your Roll No. anywhere else except in the specified space in the Answer Sheet.
7. Use of white fluid for correction is **NOT** permissible on the Answer Sheet.
8. The candidates should not leave the Examination Hall without handing over their Answer Sheet to the Invigilator on duty.
9. Use of Electronic/Manual calculator is prohibited.
10. Use of any unfair means shall amount to disqualification.

**Note:-**

For Official Answer Keys & Result , do visit our website : [wearehere.org.in](http://wearehere.org.in)

Name of the Candidate : \_\_\_\_\_

Roll Number : \_\_\_\_\_ Candidate's Signature : \_\_\_\_\_

**SECTION A ( MATHEMATICS )**

**1. The largest number that divides 70 and 125 which leaves the remainder 5 & 8 is**

- a) 65      b) 13      c) 15      d) 25

**2. Using Euclid's Division Algorithm, the HCF of 231 & 396 is**

- a) 32      b) 21      c) 13      d) 33

**3. The prime factorization of 96 is**

- a)  $2^5 \times 3$       b)  $2^6 \times 3$       c)  $2^4 \times 3$       d)  $2^4 \times 5$

**4. The decimal Expansion of  $22/7$  is**

- a) terminating  
 b) non-terminating and repeating  
 c) non-terminating and non-repeating  
 d) none of the above

**5. The degree of the polynomial,  $(x^2 + 2x)(x - 3)$  is**

- a) 2      b) 3      c) 4      d) NOT

**6. Which of the following is a Quadratic Polynomial**

- a)  $(2x^2 + x)(x + 1)$       b)  $(x + 1)(x - 1)$   
 c)  $(x^2 + 1)(x^2 - 1)$       d) NOT

**7. If  $x^3 + 1$  is divided by  $x^2 + 5x^0$ , then the possible degree of Quotient is**

- a) 1      b) 0      c) 2      d) 3

**8. What are the solutions of the equations,  $x - y = 2$  and  $x + y = 4$  ?**

- a) 1 and 4      b) 2 and 3  
 c) 3 and 1      d) 3 and 4

9. If a pair of linear equations is consistent, then the lines are

- a) parallel
- b) always coincident
- c) always intersecting
- d) intersecting or coincident

10. If the lines given by  $2x + ky = 1$  and  $3x - 5y = 7$  are parallel lines, then what is the value of k ?

- a) -10/3
- b) 10/3
- c) -13/7
- d) 13/7

11. Two equations in two variables taken together are called

- a) Linear Equations
- b) Simultaneous Equations
- c) Quadratic Equations
- d) NOT

12.  $\frac{1 - \cos A}{\sin A}$  is equal to

- a)  $\frac{\sin A}{1 - \cos A}$
- b)  $\frac{\cos A}{1 - \sin A}$
- c)  $\frac{\sin A}{1 + \cos A}$
- d)  $\frac{\cos A}{1 + \sin A}$

13. If in  $\triangle ABC$ ,  $\angle C = 90^\circ$ , then what is the value of  $\sin(A + B)$  ?

- a) 0
- b) infinity
- c) 1
- d) NOT

14. What is the general form of Quadratic Equation?

- a)  $ax^3 - bx + c = 0$
- b)  $ax + bx - c = 0$
- c)  $ax + b = 0$
- d)  $ax^2 + bx + c = 0$

15. Find the sum of 12 terms of A.P whose  $n^{\text{th}}$  term is given by,  $a_n = 3n + 4$

- a) 282
- b) 272
- c) 262
- d) 252

16. What is the 21<sup>st</sup> term of A.P whose first two terms are -3 and 4 ?

- a) 143
- b) 137
- c) 17
- d) -143

17. Who is the famous mathematician associated with finding the sum of first 100 natural numbers?

- a) Gauss
- b) Pythagoras
- c) Galileo
- d) euclid

18. If the first term of an A.P is 4,  $n^{\text{th}}$  term is 28 and sum of n terms is 128, find the number of terms ?

- a) 4
- b) 6
- c) 7
- d) 8

19. If  $\sin A - \cos A = 0$ , then the value of  $\sin^4 A + \cos^4 A$  is

- a) 2
- b) 1/2
- c) 3/4
- d) 1

20. The value of  $(\sin 45^\circ + \cos 45^\circ)$  is

- a)  $1/\sqrt{2}$
- b)  $(2)^{1/2}$
- c)  $\sqrt{3}/2$
- d) 1

21. Euclid's Division Lemma states that for two positive integers a & b, there exist unique integers q & r such that  $a = bq + r$  where r must satisfy

- a)  $1 < r < b$
- b)  $0 < r \leq b$
- c)  $0 \leq r < b$
- d)  $0 < r < b$

22. The pair of equations  $9x - 5y - 7 = 0$  and  $3x - 10y - 9 = 0$  have

- a) a unique solution
- b) no solution
- c) two solutions
- d) infinitely many solutions

23. The roots of  $100x^2 - 20x + 1 = 0$  are

- a) 1/20 & 1/10
- b) 1/20 & 1/20
- c) 1/10 & 1/10
- d) NOT

24. If  $\triangle ABC$  is right angled at C, then the value of  $\cos(A + B)$  is

- a) 0
- b) 1
- c) 1/2
- d)  $\sqrt{3}/2$



41. The blue green color of solution during the reaction between copper oxide and HCl is due to

- a) Copper<sub>(I)</sub>oxide                      b) Ferric oxide  
c) Copper<sub>(II)</sub> chloride                d) Copper chloride

42. In terms of acidic strength, which one of the following is in the *Correct* increasing order

- a) Water < Acetic acid < Hydrochloric acid  
b) Water < Hydrochloric acid < Acetic acid  
c) Acetic acid < Water < Hydrochloric acid  
d) Hydrochloric acid < Water < Acetic acid

43. Which one of the following salts doesn't contain water of crystallization

- a) Blue vitriol                      b) Backing soda  
c) Washing soda                  d) Gypsum

44. When hydrogen chloride gas is prepared on a humid day, the gas is usually passed through a guard tube containing calcium chloride. The role of calcium taken in the guard tube is to

- a) Absorb the evolved gas  
b) Moisten the gas  
c) Absorb moisture from gas  
d) Absorb Cl<sup>-</sup> ions from the evolved gas

45. Which of the following statements are *TRUE* about the laws of reflection

- i) The angle of incidence is equal to the angle of reflection  
ii) the angle between incident ray and reflected ray lie at 60°  
iii) The incident ray, the normal ray to the mirror at the point of reflection & reflected ray lie in opposite planes  
iv) The incident ray, the normal ray to the mirror at the point of incidence & the reflected ray, all lie in the same plane

- a) (i) & (ii)                              b) Only (i)  
c) (i) & (iv)                             d) Only (ii)

46. Identify the *Incorrect* statement

- a) The point on the centre of the reflecting surface of the spherical mirror is called Pole  
b) The reflecting surface of the spherical mirror forms a part of sphere  
c) Centre of curvature is a part of mirror  
d) Principle axis passes through the pole & centre of curvature

47. For spherical mirrors of small apertures, radius of curvature is equal to

- a) Focal length                      b) Between F and C  
c) Infinity                              d) Behind the mirror

48. If the position of the image formed by a convex mirror is at the focus (behind the mirror) then where is the object placed at

- a) At pole                              b) Between infinity & P  
c) Between F & infinity            d) At infinity

49. A convex mirror used for rear-view on an automobile has a radius of curvature of 3.00 m. If a bus is located at 5.00 m from the mirror, what will be the size of image

- a) -0.23                      b) +0.2                      c) +0.23                      d) +23.0

50. The refractive index of benzene is

- a) 1.52                      b) 1.31                      c) 1.50                      d) 1.47

51. For a convex lens, if the position of object is between the F<sub>1</sub> and optical centre the position of image is

- a) Beyond 2F<sub>2</sub>                      b) Between F<sub>2</sub> & 2F<sub>2</sub>  
c) At focus F<sub>2</sub>  
d) On the same side of lens as the object

52. Magnifying power of a concave lens is

- a) Always > 1                      b) Always < 1  
c) Always = 1                      d) Can have any value

53. The refraction of light rays entering the eye occurs at

- a) Inner surface of the cornea  
b) Outer surface of cornea  
c) Crystalline lens  
d) Retina

54. Identify the *Incorrect* statement

- a) the pupil regulates the amount of light entering the eye  
b) Focal length required to focus objects at different distances is adjusted by crystalline lens  
c) Light enters the eye through a thin membrane called sclera  
d) Light- sensitive cells are present in retina

55. One eye of a human being has a horizontal field view of about

- a) 180°                      b) 150°                      c) 60°                      d) 120°

56. The figure given below represents a



- a) Normal eye                      b) Hypermetropic eye  
c) Presbyopic eye                d) Myopic eye

57. The focal length of eye lens has become too long and the eyeball has become too small also, the closely object is focused at a point behind the retina. These are the features of

- a) Myopia                              b) Amblyopia  
c) Hypermetropia                  d) Presbyopia

58. Rods are responsible for

- a) Night vision or low light vision  
b) Higher light vision  
c) Color vision  
d) scotopic vision

59. Which of the following Statement/s are Correct

- i) Carbon and energy requirement of the autotrophic organisms are fulfilled by nitrogen-fixation  
ii) Oxygen is utilized to provide energy to plant  
iii) Starch serves as internal energy reserved when not utilized, stores as a stored form of carbohydrate  
iv) Energy derived from food that we eat is stored in our body in the form of cellulose

- a) (i) & (ii)                              b) only (i)  
c) (ii) & (iii)                          d) only (iii)

60. Match column I with column II & select the correct match

Column I	Column II
(i) Autotrophic nutrition	(i) Pore closes
(ii) Shrinking guard cell	(ii) Cuscuta
(iii) Parasitic nutrition	(iii) Photosynthesis
(iv) Food vacuole	(iv) Amoeba
a) i-ii, ii-iv, iii-i, iv-iii	b) i-iii, ii-i, iii-ii, iv-iv
c) i-iv, ii-i, iii-iii, iv-ii	d) i-i, ii-iii, iii-ii, iv-iv

61. Which of the following organisms breakdown the food materials outside the body and then absorbs it

- a) Yeast, Amoeba, Cuscuta  
b) Bread mould, Amoeba, Cuscuta  
c) Paramecium, Amoeba, Yeast  
d) Yeast, Bread mould, Mushroom

62. Identify the Incorrect statement

- a) Starch is broken down by salivary amylase and the product is sugar  
b) Peristaltic movement occur in oesophagus  
c) Parietal cells release HCl in the stomach  
d) Mucus protects the inner lining of stomach from action of acids

63. The total number of alveoli present in the human lung is estimated to be around

- a) 1 billion                              b) 800 million  
c) 500 million                          d) 1500 million

64. \_\_\_\_\_ are the cells present in the bowman's capsule that wrap around the capillaries of the glomerulus

- a) Zymogenic cells  
b) enterochromaffin-like cells  
c) parietal cells  
d) podocytes

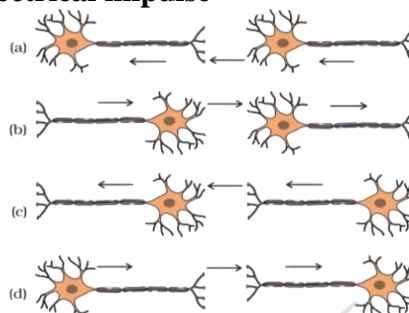
65. breathing is controlled by which part of the brain

- a) Cerebrum                              b) Cerebellum  
c) Hypothalamus                        d) Medulla oblongata

66. Reflex arc is formed by

- a) muscle → brain → receptor  
b) muscle → spinal cord → receptor  
c) receptor → brain → muscles  
d) receptor → spinal cord → muscles

67. What is the correct direction of flow of electrical impulse



68. All of the following statements are **TRUE** except

- a) Absciscic acid induce wilting of leaves
- b) Insulin is a hormone which controls blood sugar level
- c) Thyroxin hormone stimulate the metabolism of carbohydrate, protein and fats
- d) Adrenalin is secreted into glands only

69. Which of the following acts as both endocrine and exocrine glands

- a) adrenal
- b) pituitary
- c) thyroid
- d) pancreas

70. In the following question, The Assertion and Reason have been put forward. Read both the statements carefully and choose the correct alternative from the following

**Assertion:** Reflex arc works faster than thinking process of brain

**Reason:** Reflex arc works in case of those animals who don't have thinking process

- a) Both the Assertion and Reason are correct and the Reason is the correct explanation of the Assertion
- b) The Assertion and the Reason are correct but the Reason is not the correct explanation of the Assertion
- c) Assertion is true but the Reason is false
- d) The statement of the Assertion is false but the reason is true

### **SECTION C ( G.K )**

71. The tropic of cancer does not pass through

- a) Madhya Pradesh
- b) Mizoram
- c) Bihar
- d) Gujrat

72. Who is the 14<sup>th</sup> Prime Minister of India?

- a) Dr. Manmohan Singh
- b) Atal Bihari Vajpayee
- c) Narendra Modi
- d) Jawahar Lal Nehru

73. Which of the following is the "State Butterfly" of Jammu & Kashmir?

- a) Monarch Butterfly
- b) Blue pansy
- c) Green hair streak
- d) Julia Butterfly

74. Which of the following is largest tributary of River Indus?

- a) Chenab
- b) Sutlej
- c) Jhelum
- d) Ravi

75. Which of the following Batsman has completed 100 centuries across all formats in the history of cricket ?

- a) Viv Richards
- b) Brian Lara
- c) Sachin Tendulkar
- d) Ricky Ponting

76. WHO stands for

- a) World Hierarchy Organization
- b) World Health Organization
- c) World Heritage Organization
- d) NOT

77. How many Megabytes(MB) are there in 1 Gigabyte(GB)?

- a) 1000
- b) 1200
- c) 1050
- d) 1024

78. Who was the last Governor of state J&K ?

- a) Manoj Sinha
- b) Satyapal Malik
- c) G.C Murmu
- d) N.N Vohra

79. Tropic of Cancer is the imaginary line at

- a) 23.5 °N
- b) 23.5 °S
- c) 23.5 °E
- d) 23.5°W

80. Which of the following countries, India shares its longest land border with

- a) Pakistan
- b) China
- c) Nepal
- d) Bangladesh

81. The eastern most longitude of India is

- a) 68.7°E
- b) 82.32 °E
- c) 97.25 °E
- d) 77.6 °E

82. "World Day against Child Labour" is celebrated on

- a) 05 July
- b) 10 May
- c) 12 September
- d) 12 June

83. Who is the current president of India?

- a) Droupadi Murmu
- b) Pranam Mukherjee
- c) Ram Nath Kovind
- d) Pratibha Devisingh Patil

84. 1 U.S Dollar is equal to \_\_\_\_\_ Rupees.

- a) 80
- b) 85
- c) 83
- d) 90

**85. Full Form of WWW is**

- a) World Weird Web      b) World Wide Web  
c) Working Word Web      d) NOT

**86. Who was the last “Sadhri Riyasat” & first Governor of J&K ?**

- a) Sheikh Mohammad Abdullah  
b) Mehr Chand Mahajan  
c) Dr. Karan Singh  
d) Bakshi Ghulam Mohammad

**87. How many districts are there in UT of J&K?**

- a) 22      b) 24      c) 21      d) 20

**88. What is the full form of LED ?**

- a) Light Emitting Diode  
b) Light Emitting Device  
c) Light Emerging Diode  
d) Light Emerging Device

**89. Which of the following is not among the Folk Dances of jammu & Kashmir ?**

- a) Rouf Dance      b) Dumhal Dance  
c) Kud Dance      d) Kuchipadi Dance

**90. Which Lens is used in Torch ?**

- a) Convex      b) Concave  
c) Both a & b      d) NOT

**91. Gulmarg is also known as**

- a) Meadow of Flowers      b) Meadow of mountains  
c) meadow of Snow      d) Death Meadow

**92. “Betaab valley” is situated in which district?**

- a) Srinagar      b) Kulgam  
c) Shopian      d) Anantnag

**93. Hari Parbat is also known as**

- a) Kooh-e-Maran      b) Siraj bagh  
c) Shankaracharya Hills      d) NOT

**94. Who is the father of Medicine ?**

- a) Aristotle      b) Hippocrates  
c) Charles Darwin      d) Einstein

**95. Earth is present in which of the following Galaxy?**

- a) Milky Way Galaxy      b) Andromeda Galaxy  
c) Sombrero Galaxy      d) Tadpole Galaxy

**96. Which of the following Scientist was also the president of India ?**

- a) Srinivasa Ramanujan      b) Aryabhata  
c) APJ Abdul Kalam      d) C.V Raman

**97. Who is the father of Indian constitution?**

- a) Dr. Rajendra Prasad      b) Jawahar Lal Nehru  
c) Lal bahadur Shastri      d) Dr. B.R Ambedkar

**98. Who is the writer of Book “Raj Tarangini” ?**

- a) Rabindranath Tagore      b) Kalhana  
c) Narayan R.K      d) Amir Khusrow

**99. Dandi March is also known as**

- a) Satyagraha      b) Non-Cooperation Movement  
c) Chipko Andolan      d) Quit india Movemont

**100. Gandhi jayanti is celebrated on**

- a) 03 October      b) 04 October  
c) 02 October      d) 05 October