10TH

TALENT SEARCH TEST-2024

By " WE ARE HERE "

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

Name of the Candidate : _____

Roll Number : _____ **Candidate's Signature :** _____

SECTION A (MATHEMATICS)

1. The HCF of 96 and 404 can be expressed in the form 96x + 404y = 4. The values of x and y are:
a) 1, -1 b) 2, -3 c) -2, 3 d) 5, -4

2. If two positive integers 'a' and 'b' are expressed as $a = x^3y^2$ and $b = xy^5$, then HCF(a, b) is:
a) xy^2 b) x^2y c) x^3y d) x^2y^2

3. The decimal expansion of $\frac{23}{2^2 \times 5^2}$ will terminate after how many decimal places?
a) 1 b) 2 c) 3 d) 4

4. If one of the zeros of the quadratic polynomial $x^2 - 5x + k$ is 3, then the value of k is:
a) 2
b) 6
c) 4
d) 9

5. A quadratic polynomial whose sum and product of zeroes are 7 and -12, respectively, is:
a) $x^2 + 7x + 12$ b) $x^2 - 7x + 12$
c) $x^2 - 7x - 12$ d) $x^2 + 7x - 12$

6. The degree of the polynomial $2x^3 - 4x^2 + x - 5$ is:
a) 1 b) 2 c) 3 d) 4

7. If 5x + 6y = 10 and 10x + 12y = 20, then the pair of equations has:
a) No solution
b) A unique solution
c) Infinitely many solutions
d) Exactly two solutions

8. The pair of equations 2x - 3y = 7 and 4x - 6y = 14 are:
a) Consistent and have infinitely many solutions
b) Consistent and have a unique solution
c) Inconsistent
d) None of the above

9. The pair of linear equations x + 2y = 5 and 2x + 4y = 10 represents
a) Parallel lines b) Intersecting lines
c) Coincident lines d) None of these

10. The solution of the equation $2x + 3 = 7$ is:
a) 1 b) 2 c) 3 d) 4

11. The graph of the linear equation $3x + 2y = 6$ cuts the y-axis at:
a) (0, 3) b) (3, 0) c) (0, 2) d) (2, 0)

12. A linear equation in two variables has:
a) One solution b) Two solutions
c) Infinitely many solutions d) No solution

13. If the nth term of an arithmetic progression is given by $a_n = 3n + 2$, then the common difference is:
a) 3 b) 2 c) 1 d) 5

14. The sum of the first 10 terms of the arithmetic progression 2, 7, 12, 17, ... is:
a) 150 b) 230 c) 240 d) 255

15. In an arithmetic progression, if the first term is 2 and the common difference is 5, what is the 10th term?
a) 47 b) 52 c) 55 d) 57

16. In a right-angled triangle, the square of the hypotenuse is equal to the sum of the squares of the other two sides. This is known as:
a) Pythagoras Theorem
b) Basic Proportionality Theorem
c) Midpoint Theorem
d) Thales Theorem

17. In $\triangle ABC$, if $DE \parallel BC$ and $AD = 2$, $DB = 3$, then AE/EC =:
a) 2/3 b) 3/2 c) 1/2 d) 2/5

18. Two triangles are said to be similar if their:
a) Corresponding angles are equal
b) Corresponding sides are proportional
c) Both (a) and (b)
d) Neither (a) nor (b)

19. The value of $\sin 60°$ is:
a) 1/2 b) $\sqrt{3}/2$ c) $\sqrt{2}/2$ d) 1

20. If $\tan\theta = 3/4$, then the value of $\sec\theta$ is:
a) 5/3 b) 5/4 c) 3/5 d) 5

21. The value of $\sin^2 30° + \cos^2 30°$ is:
a) 0 b) 1 c) 2 d) 0.5

22. If p and q are two prime numbers, then their LCM is:
a) $p + q$ b) $p \times q$ c) $p - q$ d) $q - p$

24. The product of a non-zero rational and an irrational number is:
a) Always irrational b) Always rational
c) Sometimes rational d) 1

25. The pair of equations $3x - y = 5$ and $6x - 2y = 10$ represents
a) Parallel lines b) Intersecting lines
c) Coincident lines d) None of the above

26. The graph of a linear equation in two variables is always
a) A straight line b) A curved line
c) A circle d) A point

27. The first term of an arithmetic progression is 10 and the common difference is -2, what is the 6th term?
a) 4 b) 0 c) 2 d) -2

28. If the sum of the first n terms of an arithmetic progression is $3n^2 + 5n$, then the common difference is:
a) 3 b) 5 c) 6 d) 10

29. In $\triangle ABC$, if $AB = AC$ and $\angle B = 90°$, then $\triangle ABC$ is:
a) Equilateral b) Scalene
c) Isosceles d) Right-angled isosceles

30. If two triangles are similar, the ratio of their corresponding sides is:
a) Equal b) Proportional
c) Additive d) Subtractive

SECTION B (G.K)

31. Who was the first Maharaja of Jammu & Kashmir?
a) Hari Singh b) Gulab Singh
c) Ranbir Singh d) Pratap Singh

32. Which significant event in the history of J&K occurred in 1947?
a) treaty of Lahore b) Accession to India
c) First War of Independence
d) Shimla Agreement

33. Which dynasty is known for its rule over Kashmir during the medieval period?
a) Mughal Dynasty b) Dogra Dynasty
c) Abdullah Dynasty d) Gupta Dynasty

34. Which mountain range separates Kashmir Valley from Ladakh?
a) pirpanjal Range b) Zanskar Range
c) Shivalik Range d) Karakoram Range

35. Which is the largest freshwater lake in India, located in Kashmir?
a) Dal Lake b) Wular Lake
c) Mansar Lake d) Pangong Lake

36. Which of the following correctly arranges the districts of the Kashmir region in order of their population, from most to least populated?
a) Srinagar > Budgam > Baramulla
b) Baramulla > Budgam > Srinagar
c) Budgam > Srinagar > Baramulla
d) Srinagar > Baramulla > Budgam

37. The famous Amarnath Cave Temple is dedicated to which Hindu deity?
a) Vishnu b) Shiva
c) Ganesh d) Durga

38. Which of the following is not a tributary of the Jhelum River?
a) Lidder b) Sindh
c) Suru d) Pohru

39. Who was the first female Chief Minister of Jammu and Kashmir?
a) Sonia Gandhi b) Mehbooba Mufti
c) Indira Gandhi d) Sakeena Itoo

40. Match the following famous personalities with their respective roles:

Column I:	Column II:
I. Poet	A. Ghulam Nabi Azad
II. Former Chief Minister	B. Manoj Sinha
III. Lieutenant Governor	C. Mehjoor
IV. Renowned Sufi Saint	D. Sheikh Noor-ud-din Wali

a) I - D, II - A, III - C, IV - B
b) I - C, II - A, III - B, IV - D
c) I - A, II - D, III - B, IV - C
d) I - B, II - C, III - D, IV - A

41. Who wrote the famous Persian Couplet "Agar firdaus bar roo-e zameen ast, Hameen ast-o hameen ast-o hameen ast". for kashmir?
a) Rumi b) Omar Khayyam
c) Amir Khusrau d) Mirza Ghalib

42. Who is the current Member of Parliament for the Srinagar parliamentary constituency?
a) Farooq Abdullah b) Agha Syed Ruhullah Mehdi
c) Engineer Rashid d) Mia Altaf

43. Which scheme in J&K specifically focuses on providing free education to underprivileged children?
a) Beti Bachao Beti Padhao
b) Sarva Shiksha Abhiyan
c) Pradhan Mantri Awas Yojana
d) Swachh Bharat Abhiyan

44. How many total assembly constituencies are there in Jammu and Kashmir after it became a Union Territory?
a) 90 b) 87 c) 94 d) 82

45. Which festival, celebrated in many parts of the world on 21st March including Kashmir, marks the Persian New Year and the beginning of spring?
a) Baisakhi b) Navroz
c) mehregan d) Lohri

46. What is the traditional Kashmiri woolen shawl known for its intricate patterns and warmth called?
a) Kani Shawl b) Kullu Shawl
c) Pashmina Shawl d) None of these

47. What is the traditional form of theatre in Kashmir known as?
a) Kathak b) Bhand Pather
c) Lavani d) Ladishah

48. Match the following religious sites with their suitable characteristics:

Column 1 (Religious Sites):	Column 2 (Characteristics):
1. Jamia Masjid Nowhatta	A) Sufi shrine with intricate carvings
2. Imam Bargah	B) Famous for its beautiful wooden architecture
3.Shankaracharya Temple	C) Located on a hilltop, ancient site
4.Khaqah-e-Moula	D) Sacred site for Shia Muslims

a) 1-A, 2-B, 3-C, 4-D
b) 1-B, 2-D, 3-C, 4-A
c) 1-C, 2-D, 3-B, 4-A
d) 1-D, 2-A, 3-B, 4-C

49. Pari Mahal, the famous tourist destination in Jammu and Kashmir, is also known as which of the following?
a) Palace of Dreams b) Palace of Gardens
c) Palace of Fairies d) Palace of Kings

50.Which fort is located on Koh-e-Maran Hill in J&K ?
a) Hari Parbat Fort b) Bahu Fort
c) Akhnoor fort d) None of these

51. What can individuals do to help reduce environmental issues in Jammu and Kashmir?
a) Use More Non-renewable Resources b) Increase Plastic Use c) Promote Industrial Expansion d) Reduce, Reuse, Recycle

52. Which of the following software is commonly used to create presentations?
a) Microsoft Excel b) Microsoft Word
c) Microsoft PowerPoint d) Microsoft Access

53. Match the following computer components with their functions:

Column A:	Column B:
1.Keyboard	A. Stores data permanently
2.Hard Disk	B. Input device
3.CPU	C. Executes instructions and processes data
4. RAM	D. Temporary storage

a) 1-A, 2-C, 3-B, 4-D b) 1-B, 2-D, 3-A, 4-C
c) 1-C, 2-D, 3-B, 4-A d) 1-B, 2-A, 3-C, 4-D

54. Which of the following statement is Incorrect in computer terminology?
a) The monitor is used to display visual output from the computer.
b) Software applications can only run if the computer is connected to the internet.
c) A computer's CPU performs calculations and executes instructions.
d) None of these

55. What does URL stand for in web browsing?
a) Universal Resource locator
b) Unified Resource Link
c) Uniform Resource Locator
d) Uniform Routing Link

56. Which arrangement among the following data storage from Greater to smaller sizes is correct?
a) 1 KB > 1 MB > 1 GB > 2 TB
b) 1 MB > 1024 KB > 1 B > 512 KB
c) 1 GB > 2048 MB > 512 KB > 100 B
d) 1 TB > 500 GB > 1 GB > 512 MB

57. What does the "GAD" stand for in the context of government in Jammu & Kashmir?
a) General Accounting Division
b) General Administration Department
c) Government Advisory Department
d) Government Affairs Division

58. The abbreviation NASA stands for?
a) National Association of Space Agencies
b) National Aeronautics and Space Administration
c) North American Space Agency
d) National Astronaut and Space Agency

59. "World Environment Day" is celebrated on which date?
a) 21st March b) 16th September
c) 5th September d) 5th June

60. "World Anti-Drugs Day" is observed on which date?
a) July 26 b) June 26
c) August 30 d) November 1

SECTION C (SCIENCE)

61. An object is placed 20 cm in front of a plane mirror. The mirror is moved 2 cm towards the object. The distance between the positions of the original and final images seen in the mirror is:
(a) 2 cm (b) 4 cm (c) 10 cm (d) 22cm

62. Which of the following can make a parallel beam of light when light from a point source is incident on it?
(a) Concave mirror as well as convex lens
(b) Convex mirror as well as concave lens
(c) Two plane mirrors placed at 90° to each other
(d) Concave mirror as well as concave lens

63. Identify the incorrect statement
1.A ray parallel to the principal axis after reflection will pass through the principal focus in case of a concave mirror
2.A ray parallel to the principal axis after reflection will pass through focus and appear to diverge from focus in case of convex mirror
3.A ray passing through principal focus of concave mirror, after reflection will be anti-parallel to principal axis
4.A ray passing through centre of curvature of concave mirror is reflected away from the path

a) statement 1 is incorrect
b) All except 3 and 4 are correct
c) All statements are incorrect
d) only statement 4 is incorrect

64. A 10 mm long awl pin is placed vertically in front of a concave mirror. A 5 mm long image of the awl pin is formed at 30 cm in front of the mirror. The focal length of this mirror is
(a) -30 cm (b) -20 cm (c) -40cm (d) -60 cm

65. A concave mirror gives real, inverted and same size image if the object is placed
(a) At F (b) At infinity
(c) At C (d) Beyond C

66. The refraction index of benzene is

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

67. A student conducts an experiment using a convex lens. He places the object at a distance of 60 cm in front of the lens and observes that the image is formed at a distance of 30 cm behind the lens. What is the power of the lens?

(a) 0.005 dioptre (b) 0.05 dioptre
(c) 5 dioptres (d) 50 dioptres

68. Assertion(A): White light is dispersed into its seven-colour components by a prism.

Reason (R): Different colours of light bend through different angles with respect to the incident ray as they pass through a prism.

(a) Both A and R are true and R is the correct explanation of A.
(b) Both A and R are true but R is not the correct explanation of A.
(c) A is true but R is false.
(d) A is false but R is true.

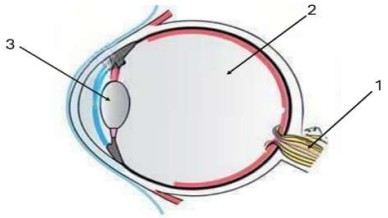
69. The light sensitive cell present on retina and is sensitive to the intensity of light is:

a) Cones b) Rods
c) Both rods and cones d) None of these

70. In _____ a person can see distant objects clearly but cannot see nearby objects distinctly

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

71.Name the labelled parts of human eye in below diagram



a) (1) ciliary muscle (2) aqueous Humour (3) Lens
b) (1) optic nerve (2) vitreous humour (3) ciliary muscle
c) (1) Optic nerve (2) vitreous humour (3) crystalline lens
d) (1) optic nerve (2) sclera (3) crystalline lens

72. The apparent flattening of the sun's disc at sunrise and sunset is due to: -

a) Atmospheric Reflection
b) Atmospheric refraction
c) Scattering of white light d) Refractive index

73. The least distance for a young adult with Normal vision is about: -

a) 2.5 cm b) 25 cm
c) 25 m d) 2.5 m

74. Match the following columns and choose the correct option:

Column 1	Column 2
I. Farsightedness	A. Hypermetropia
II. Dioptre	B. Scattering of light
III. Near sightedness	C. Myopia
IV. Tyndall effect	D. Optical power

(a). I - A, II - D, III - C, IV - B
(b). I - C, II - A, III - B, IV - D
(c). I - B, II - C, III - A, IV - D
(d). I - D, II - B, III - A, IV – C

75. Identify the incorrect statement among following

1) The substances which undergo chemical change in reaction are reactants
2) The substances which are formed at the end of the reaction are products
3) The number of atoms is changed before and after the reactions
4) There is need to balance a skeletal equation

a) all except 1 are incorrect
b) 3 is incorrect
c) 3 and 4 are incorrect
d) all except 4 are incorrect

76. which of the following chemical equation is balanced

a) $2Mg(g) + O_2(g) \longrightarrow 2MgO(g)$
b) $Mg(g+O_2(g) \longrightarrow 2Mg(g)$
c) $2Mg + 2O_2 \longrightarrow 2MgO$
d) $2mg + O_2 \longrightarrow MgO$

77. Which of following observations help us to determine whether a chemical reaction has taken place or not

A. Change in state
B. change in mass
C. change in temperature
D. evolution of gas

a). A and B
b) Only B
c) A, C and D
d) All of the above

78. Which of the following reaction can also be termed a thermal decomposition reaction?

(a) Combination reaction
(b) Decomposition reaction
(c) Displacement reaction
(d) Double displacement reaction

79. The chemical formula of magnesium oxide is

(a) MgO_2 (b) Mg_2O (c) MgO (d) $Mg(OH)_2$

80. Which one of the following is an oxidation-reduction reaction

a) $NaOH + HCl \rightarrow NaCl + H_2O$
b) $CaO + H_2O \rightarrow Ca(OH)_2$
c) $2Mg + O_2 \rightarrow 2MgO$
d) $Na_2SO_4 + BaCl_2 \rightarrow BaSO_4 + 2NaCl$

81. Assertion (A): Copper sulphate crystals are wet because it contains water of crystallisation.
Reason (R): Water of crystallisation is the fixed number of molecules of water present in one formula unit of salt.

(a) Both A and R are true and R is the correct explanation of A.
(b) Both A and R are true but R is not the correct explanation of A.
(c) A is true but R is false.
(d) A is false but R is true.

82. litmus solution is: -

a) blue dye b) purple dye
c) red dye d) colourless

83. which of the following statement is incorrect

a) all bases dissolve in water
b) an alkali is a base that dissolve in water
c) Alkali are soapy to touch bitter and corrosive
d) acids produce ions in aq. Solution

84. which of the following statement is true about acids

a) the process of dissolving an acid in water is exothermic
b) the process of dissolving an acid in water is endothermic
c) ion concentration increases when acid is dissolved in water
d) acids cannot be diluted

85. Increase in the value of ph. from 7 to 14 represents

a) increase in strength of alkali
b) increase in OH - concentration
c) increase in H+ concentration d) Both a and b

86. Ph is absent in digestive system of humans:

a) true
b) false
c) may or may not be present
d) none of the above

87. Assertion: Photosynthesis takes place in green parts of the plants.
Reason: Photosynthesis always takes place in leaves.

(a) Both A and R are true and R is correct explanation of the assertion.
(b) Both A and R are true but R is not the correct explanation of the assertion.
(c) A is true but R is false.
(d) A is false but R is true.

88. Which of the following is NOT a raw material required for photosynthesis?

a) Carbon dioxide b) Water
c) Oxygen d) Sunlight

89. Which of the following mode of nutrition is found in fungi?

a) Autotrophic Nutrition
b) Saprotrophic Nutrition
c) Holozoic Nutrition
d) None of the above

90. identify the incorrect statement

a) energy requirements for autotrophic organisms are fulfilled by photosynthesis
b) in autotrophic nutrition the processes involved convert carbon into carbohydrates
c)Sunlight and chlorophyll are not essential for autotrophic nutrition
d) carbohydrates are utilised to provide energy

91. Assertion (A): Carbohydrate digestion mainly takes place in small intestine.
Reason (R): Pancreatic juice contains the enzyme lactase.

(a) Both A and R are true and R is the correct explanation of A.
(b) Both A and R are true but R is not the correct explanation of A.
(c) A is true but R is false.
(d) A is false but R is true.

92. ____ is the site of complete digestion of protein, carbohydrates and fats.

a) stomach b) Large intestines
c) oesophagus d) small intestines

93. All are TRUE except: -

a) 30 percent of starch digestion takes place in mouth
b) mucus protects the inner lining of stomach from the action of Acid
c) small intestines do not receive any secretion from liver
d) Lacteal is a lymph vessel present in small intestines

94. The human nervous system is divided into two parts:

a) Central nervous system and autonomic nervous system
b) Central nervous system and peripheral nervous system
c) Peripheral nervous system and autonomic nervous system
d) None of the above

95. Assertion(A): Animals can react to stimuli in different ways.

Reason (R): All animals have a nervous system and an endocrine system involving hormones.

(a) Both A and R are true and R is the correct explanation of A.
(b) Both A and R are true but R is not the correct explanation of A.
(c) A is true but R is false.
(d) A is false but R is true.

96. Match the following with correct response.

Column 1	Column 2
(1) The master gland	(A) Control cell division and cell growth
(2) Cytokinin	(B) Regulates metabolism
(3) Insulin	(C) Reduces blood sugar
(4) Thyroxine	(D) Pituitary gland

a) 1-D, 2-A, 3-B, 4-C
b) 1-A, 2-B, 3-D, 4-C
c) 1-D, 2-A, 3-C, 4-B
d) 1-C, 2-D, 3-A, 4-B

97. Forebrain is also called as

a) Mesencephalon b) Rhombencephalon
c) prosencephalon d) none of the above

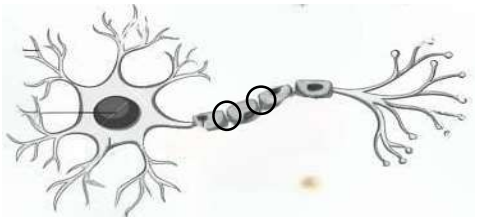
98. All are True except ...

a) Nodes of Ranvier consist of myelin sheath
b) Nissl's granules are absent in axon
c) Synaptic vesicles release neurotransmitter
d) Axon is the longest portion of neuron

99.Which plant hormone promotes cell division?

(a) Auxin (b) Gibberellin
(c) Cytokinin (d) Abscisic acid

100. Identify the encircled parts of Neuron below diagram?



a) Schwan cell
b) Node of Ranvier
c) Nissl's granules
d) Axon terminal