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SAT : 2012/STS(X)/Mizoram

ROLL NO.

BOOKLET NUMBER

DIRECTORATE FOR STATE COUNCIL OF EDUCATIONAL RESEARCH AND TRAINING

STATE TALENT SEARCH EXAMINATION - 2012

SCHOLASTIC APTITUDE TEST

Time allowed : One and Half Hours (90 minutes)

Maximum Marks : 90

INSTRUCTIONS TO CANDIDATES

1. IMMEDIATELY AFTER THE COMMENCEMENT OF THE EXAMINATION, YOU SHOULD CHECK THAT THIS BOOKLET **DOES NOT** HAVE ANY UNPRINTED OR TORN OR MISSING PAGES OR ITEMS ETC. IF SO, GET IT REPLACED BY A COMPLETE TEST BOOKLET.
2. WRITE YOUR ROLL NUMBER IN THE BOX PROVIDED IN THE ANSWER SHEET.
3. Answers are to be given on a **separate answer sheet**. You have to mark all your responses **ONLY** on the separate Answer Sheet provided. See direction in the Answer Sheet.
4. This Test Booklet contains 90 items(questions). Each item is printed in English. Each item comprises FOUR responses(answer). You will select the response which you want to mark on the Answer Sheet. In case you feel that there is more than one correct response, mark the response which you consider the best. In any case, choose **ONLY ONE** response for each item.
5. **All questions are compulsory**. Every correct answer will be awarded one mark.
6. **ROUGH WORK CAN BE DONE ANYWHERE IN THE TEST BOOKLET BUT NOT ON THE ANSWER SHEET/LOOSE PAPER.**
7. After you have completed filling in all your responses on the Answer Sheet and the examination has concluded, you should hand over to the invigilator **only the Answer Sheet**. You are permitted to take away with you the Test Booklet and rough sheets issued to you.

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1. The best expression of nationalism is
 - a) French Revolution
 - b) German Unification
 - c) Greek Revolution
 - d) American War of Independence

2. He was a man of action and the knight-errand of Italian liberation. Name him.
 - a) Piedmont
 - b) Garibaldi
 - c) Mazzini
 - d) Cavour

3. 'Swaraj is our birth right' was the main slogan of
 - a) Home Rule movement
 - b) Khilafat Movement
 - c) Peasant Movement
 - d) Tribal Movement

4. Give the correct chronological order of the following:
 - I. Jallianwala Bagh Massacre
 - II. Rowlatt Act
 - III. Khilafat Movement
 - a) II, I, III
 - b) I, II, III
 - c) II, III, I
 - d) I, III, II

5. Some inventors/writers and their works are stated below:

A. Elly Whitely	I. David Copperfield
B. Charles Dickens	II. Vanity Fair
C. James Hargreaves	III. Cotton gin
D. W.M. Thackeray	IV. Spinning Jenny

Which of the following indicates the correct matching of the above?

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

6. The movement started by the Indian National Congress in 1905, which add the momentum of expansion of Indian industries was ?
 - a) Swadeshi movement
 - b) Trade Union Movement
 - c) Left Movement
 - d) Working Class Movement

7. Which of the following countries is not associated with Indo-China ?
 - a) Thailand
 - b) Vietnam
 - c) Laos
 - d) Cambodia

8. Some persons and their works are stated below:

A. S.C. Bose	I. Gagging Act
B. Gandhi	II. Nationalist Press of India
C. Raja Ram Mohan Roy	III. Forward Bloc
D. Lord Canning	IV. Young India

Which of the following indicates the correct matching of the above?

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

9. The one which is not the method adopted to fight depression of 1920's is ?
 - a) Resort to inflation
 - b) Reforms in banking system
 - c) Control securities and commodities market
 - d) Preferential tariffs

10. Match the following:

A. Poland	I. Karolyi
B. Hungary	II. Land of the Vistula
C. Greece	III. Rhine Federation
D. Germany	IV. Prince Otto

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

11. Which of the following options is incorrect ?

Resources can be classified

 - a) on the basis of origin
 - b) on the basis of shape
 - c) on the basis of ownership
 - d) on the basis of exhaustibility

12. Match the following :

A. Jute	I. Indian Wildlife Protection Act
B. 1972	II. Sorrow of Bengal
C. Damodar	III. Main Rabi crop
D. Wheat	IV. Golden Fibre

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

13. Which one of the following describes a system of agriculture where a single crop is grown on a large area?
 a) Shifting agriculture b) Horticulture
 c) Plantation agriculture d) Intensive agriculture
14. Sources of energy that has been in use since a long period of time are called as
 a) Renewable b) Non-renewable
 c) Non-conventiona; d) Conventional
15. Bauxite is an ore of
 a) Aluminium b) Manganese
 c) Copper d) Iron
16. Which one of the following does not contribute to conservation of energy resources ?
 a) Using public transport system
 b) Switching electricity when not required
 c) Using individual vehicles
 d) Using power saving devices
17. On the basis of ownership, industries are categorised as ...
 a) Large-scale and small-scale industries
 b) Public sector, private sector, joint sector and corporate sector
 c) Basic industries and Consumer industries
 d) Agro-based and Mineral-based industries
18. Which one of the following is the most important mode of transportation in India ?
 a) Pipeline b) Railways
 c) Roadways d) Airways
19. Which one of the following is not a personal means of communication ?
 a) Letters b) Telephone
 c) e-mail d) Magazine
20. The North-South Corridor links
 a) Srinagar with Kanyakumari
 b) Srinagar with Tuticorin
 c) Porbandar and Silchar
 d) Delhi and Cochin
21. Which state in India has its own constitution ?
 a) Meghalaya b) Sikkim
 c) Nagaland d) Jammu & Kashmir
22. What is the term used to describe the use of religion as a tool for dividing people ?
 a) Communalism b) Diversity
 c) Communism d) Regionalism
23. Which one of the following is not a national party ?
 a) BJP b) RJD
 c) NCP d) BSP
24. Who is empowered to make laws on Union List ?
 a) President b) Prime Minister
 c) Central Government d) Vice-President
25. Which of the following is not an essential feature of Democracy ?
 a) Free and fair election
 b) Centralization of power
 c) Universal Adult Franchise
 d) Rule of law and respect for rights
26. The Constituent Assembly that wrote the India Constitution had :
 a) 299 members b) 305 members
 c) 388 members d) 399 members
27. What is factionalism ?
 a) Raising voice against the government
 b) Creating awareness among the masses
 c) Raiding people with immense wealth
 d) Creating party within party
28. Which of the following statements about Judiciary is false ?
 a) Every law passed by the Parliament needs judicial approval
 b) Judiciary can strike down a law if it goes against the spirit of Indian Constitution
 c) Judiciary is independent of the executive
 d) Any citizen can approach the court if his/her rights are violated

29. The National Human Rights Commission is headed by the :
- | | |
|------------------|-------------------|
| a) President | b) Vice-President |
| c) Chief Justice | d) Prime Minister |
30. When any of our rights get violated, we can seek redressal under :
- Right to information
 - Right to freedom
 - Right to constitutional remedies
 - None of the above
31. Which of the following is not a right provided to the consumers ?
- Right to be heard
 - Right to be informed
 - Right to consumers' education
 - Right to seek redressal
32. What does ISO stand for?
- International Organisation for Security
 - Indian Organisation for Standardisation
 - Indian Organisation for Security
 - International Organisation for Standardisation
33. Globalisation refers to ?
- different economic reforms
 - the process of rapid integration or interconnection between countries.
 - the process of allowing private sectors to set up more industries
 - the process of removing trade barriers by government.
34. GDP is the total value of _____ produced during a particular year.
- All final goods and services.
 - All goods and services.
 - All intermediate goods and services
 - All intermediate and final goods and services.
35. What is the main criterion for comparing the development of different countries ?
- | | |
|----------------------|--------------|
| a) Population | b) Education |
| c) Family background | d) Income |
36. The relation among u , v and f for a mirror is
- | | |
|--------------------|------------------|
| a) $f = uv(u + v)$ | b) $v = fu(u+f)$ |
| c) $u = fv(f+v)$ | d) all of these |
37. If the rays constituting the beam actually meet at a point or appear to meet at a point, then the beam is
- | | |
|--------------|---------------|
| a) divergent | b) convergent |
| c) parallel | d) equal |
38. What is the power of a concave lens whose focal length is - 75.0 cm ?
- | | |
|-----------|-------------|
| a) 1.33 D | b) - 13.3D |
| c) 13.3 D | d) - 1.33 D |
39. The image formed by a convex lens when the object lies at the focus is
- | | |
|----------------------|-------------------------|
| a) virtual and erect | b) real and erect |
| c) real and inverted | d) virtual and inverted |
40. In the human eye, the opaque diaphragm behind the cornea is called the
- | | |
|-------------|---------|
| a) choroids | b) iris |
| c) retina | d) lens |
41. A _____ eye cannot distinctly see the objects that are too near.
- | | |
|------------------|-----------------|
| a) myopic | b) presbyopic |
| c) hypermetropic | d) heterophoria |
42. An electric iron is connected to a 200 V mains supply and draws a current of 4.0A. What is the power rating of the iron ?
- | | |
|----------|----------|
| a) 800 W | b) 50 W |
| c) 106 W | d) 112 W |
43. A voltmeter is used for measuring
- | | |
|---------------------|-------------------|
| a) electric current | b) resistance |
| c) electric power | d) magnetic field |
44. According to Fleming's Left Hand Rule, the _____ points in the direction of the magnetic field.
- | | |
|------------------|-------------------|
| a) thumb | b) forefinger |
| c) second finger | d) middle finger. |
45. A device which converts the electrical energy into the mechanical energy is called
- | | |
|-------------------|------------------|
| a) dynamo | b) electromagnet |
| c) electric motor | d) generator |

46. The percentage of methane in biogas is approximately
 a) 30% b) 40%
 c) 35% d) 65%
47. The main constituent of LPG is
 a) butane b) methane
 c) propane d) ethane
48. Sodium carbonate is also called
 a) baking soda b) washing soda
 c) bleaching powder d) bread soda
49. What is the chemical formula of Plaster of Paris?
 a) $(\text{CaSO}_4)_2 \cdot \text{H}_2\text{O}$ b) $(\text{CaSO}_4)_3 \cdot \text{H}_2\text{O}$
 c) $(\text{CaSO}_4)_2 \cdot 2\text{H}_2\text{O}$ d) $(\text{CaSO}_4) \cdot \text{H}_2\text{O}$
50. Of more than 114 elements known so far, _____ are metals.
 a) 74 b) 64
 c) 94 d) 84
51. About 88.6% of the universe is made up of
 a) helium b) oxygen
 c) nitrogen d) hydrogen
52. Complete the chemical reaction -
 $\text{Mg(s)} + \text{H}_2\text{SO}_4(\text{aq}) \rightarrow ?$
 a) $\text{MgSO}_3 + \text{H}_2\text{O}$ b) $\text{MgSO} + \text{H}_2\text{O} + \text{O}_2$
 c) $\text{MgSO}_4 + \text{H}_2$ d) no reaction
53. _____ is the process in which there is loss of electrons.
 a) Oxidation b) Reduction
 c) Redox reaction d) both (a) and (b)
54. The reaction of an alcohol with carboxylic acid is called
 a) combustion b) esterification
 c) saponification d) none of these
55. An organic compound which contains a -OH functional group is called
 a) aldehyde b) alcohol
 c) carboxyl d) ester
56. Which one of these group of elements is also called the halogen family?
 a) Group 16 b) Group 18
 c) Group 10 d) Group 17
57. There are _____ periods in the Modern Periodic Table.
 a) 7 b) 18
 c) 9 d) 2
58. Organisms capable of synthesizing their own food are called
 a) heterotrophs b) autotrophs
 c) decomposers d) parasites
59. The total volume of blood in an adult body is about
 a) 6 to 7 litres b) 4 to 5 litres
 c) 5 to 6 litres d) 7 to 8 litres
60. Which of the following enzymes is present in saliva?
 a) Pepsin b) Chymotrypsin
 c) Trypsin d) Ptyalin
61. The functional junction between two neurons is called
 a) synapse b) axon
 c) dendrites d) none of these
62. The anther contains
 a) sepals b) ovules
 c) carpel d) pollen grains
63. Which one of the following is not a sexually transmitted disease?
 a) Gonorrhoea b) Syphilis
 c) AIDS d) Typhoid
64. The book 'Origin of Species' was written by
 a) Darwin b) Lamarck
 c) Mendel d) de Vries
65. The transmission of traits from parents to offspring through gametes is called
 a) variation b) heredity
 c) both (a) and (b) d) neither (a) nor (b)
66. _____ are also called saprophytes.
 a) Producers b) Consumers
 c) Decomposers d) Parasites
67. Extensive planting of trees to increase forest cover is called
 a) afforestation b) agroforestry
 c) deforestation d) plantation

68. A large ecosystem with its associated plants and animals is called

- a) habitat b) biome
c) biomass d) biota

69. How many spinal nerves are there in human body ?

- a) 10 pairs b) 12 pairs
c) 21 pairs d) 31 pairs

70. According to the Einstein's mass energy relation, E = ?

- a) mc b) mc²
c) m²c d) mc⁻²

71. A polynomial of degree 3 is called

- a) Linear polynomial b) Quadratic polynomial
c) Cubic polynomial d) Biquadratic polynomial

72. The decimal expansion of π is

- a) a whole number
b) terminating
c) non-terminating but repeating
d) non-terminating but non-repeating

73. The sum of rational and irrational number is

- a) Rational b) Irrational
c) Zero d) Integers

74. A pair of equations $x = a$ and $y = b$ graphically represent lines which are

- a) intersecting at (a,b) b) intersecting at (b,a)
c) parallel d) coincident

75. The quadratic equation $ax^2 + bx + c = 0$ will have real and distinct roots if

- a) $b^2 - 4ac < 0$ b) $b^2 - 4ac > 0$
c) $b^2 - 4ac = 0$ d) all the above

76. Which of the following is not a quadratic equation ?

- a) $2(x-1)^2 = 4x^2 - 2x + 1$
b) $(x^2 + 1)^2 = x^2 + 3x + 9$
c) $(x^2 + 2x)^2 = x^4 + 3 + 4x^3$
d) $x^2 + 9 = 3x^2 - 5x$

77. If the sum of the first n terms of an AP is given by

$$S_n = n^2 + 3n, \text{ then the first term of the AP is}$$

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

78. In $\triangle ABC$ and $\triangle DEF$, we have $\frac{AB}{DE} = \frac{BC}{FD}$. Triangles

ABC and DEF will be similar if

- a) $\angle A = \angle D$ b) $\angle A = \angle F$
c) $\angle B = \angle E$ d) $\angle B = \angle D$

79. The distance of origin from the point P(3, -2) is :

- a) $\sqrt{2}$ b) $\sqrt{15}$
c) $\sqrt{13}$ d) $\sqrt{11}$

80. The coordinates of a point which is equidistant from the three vertices A(0, 2y), O(0, 0) and B(2x, 0) of a triangle AOB are :

- a) (x, y) b) (y, x)
c) $\left(\frac{x}{2}, \frac{y}{2}\right)$ d) $\left(\frac{y}{2}, \frac{x}{2}\right)$

81. If $\sec^2 \theta (1 + \sin \theta)(1 - \sin \theta) = k$, then the value of k is:

- a) 0 b) -1
c) 1 d) 2

82. In a right angled triangle ABC, right angled at B, if $\tan A = 1$, then the value of $2 \sin A \cos A$ is :

- a) 2 b) 1
c) -1 d) 0

83. Which of the following statements is not true ?

- a) There is only one tangent at a point of the circle
b) The lengths of tangents drawn from an external point to circle are equal
c) There can be many tangents to a circle through a point lying outside the circle
d) No tangent can be drawn to the circle from a point inside the circle

84. A solid sphere of radius x cm is melted and cast into the shape of a solid cone of height x cm, the radius of the base of the cone is :
- a) x cm b) $4x$ cm
c) $3x$ cm d) $2x$ cm
85. A cone is divided into two parts by drawing a plane through the mid-point of its axis parallel to its base. Then the ratio of volumes of the two parts is :
- a) $1 : 7$ b) $2 : 7$
c) $7 : 2$ d) $3 : 2$
86. If the mode of the data is 45 and mean is 27, then the median is :
- a) 36 b) 33
c) 30 d) 28
87. Which of the following is true ?
- a) Probability of an event is always greater than 1.
b) Probability of an event can be any positive number
c) Probability of an event cannot be negative
d) Probability of an event cannot be zero
88. The King, Queen and Jack of clubs are removed from a deck of 52 cards and then well shuffled. One card is selected from the remaining cards. The probability of getting a club is :
- a) $\frac{13}{49}$ b) $\frac{10}{49}$
c) $\frac{3}{49}$ d) $\frac{1}{49}$
89. For the class-intervals 0-10, 10-20, 20-30, which of the following statements is true ?
- a) 20 is included in the class 10-20
b) 20 included in the class 20-30
c) 10 is not included in any class
d) 20 is included in both 10-20 and 20-30
90. The angles of a triangle are in the ratio $1 : 5 : 3$, the smallest angle of the triangle is :
- a) 20° b) 60°
c) 90° d) 100°

Space for Rough Work

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