Time: 90 Minute **Maximum Marks: 100**

SCHOLASTIC APTITUTE TEST - 2016

Instructions to the Candidates

Read the following instructions carefully before you answer the questions:

1. Answer are to be given on a SEPRATE ANSWER SHEET.
2. Please write your twelve digits Roll Number very clearly on the Test-booklet and Answer Sheet as given in your admission card.
3. Please note and follow the instructions given on the answer sheet for writing the answers.
4. Darken the CIRCLE with pen for answering the question in the appropriate space against the number corresponding to the question you are answering.
5. There are 100 question in the test.
6. Since all questions are compulsory, do not try read the whole question paper before beginning to answer it.
7. If you do not know the answer to any question, do not spend much time on it and pass on to the next one. Time permitting, you can come back to the question, which you have left in the first instance and try them again.
8. Since the time allotted for this question paper is very limited you should make the best use of it by not spending too much time on any one question.
9. Rough work can be done anywhere in the booklet but not on Answer sheet/loose paper.
10. Every correct answer will be awarded one mark.
11. Please return the answer sheet to the invigilator after the test.

1. Kidneys in human beings are a part of the system for
(1) Nutrition (2) Respiration
(3) Excretion (4) Transportation

2. In a neuron, conversion of electrical signal to a chemical signal occurs at/in
(1) Axon (2) Dendrite end
(3) Axonal end (4) Cell body

3. Iodine is necessary for the synthesis of which hormone?
(1) Auxin (2) Thyroxin
(3) Adrenaline (4) Insulin

4. Name the plant hormone responsible for falling of senescent leaves
(1) Gibberelin (2) Auxin
(3) Cytokinin (4) Abscisic Acid

5. Characters transmitted from parents to offspring are present in
(1) Cytoplasm (2) Ribosome
(3) Golgi Bodies (4) Genese

6. Break down of pyruvate to give carbon dioxide, water and energy takes place in
(1) Cytoplasm (2) Mitochondria
(3) Chloroplast (4) Nucleus

7. In human males, all the chromosomes are paired perfectly except one. This/these unpaired chromosome is/are
(1) Large chromosome (2) Small chromosome
(3) Y-chromosome (4) X-chromosome

8. The main cause of abundant coliform bacteria in the river Ganga is
(1) Disposal of unburnt corpses into water
(2) Discharge of effluents from electroplating industries
(3) Washing of clothes
(4) Immersion of ashes

9. Accumulation of non-biodegradable pesticides in the food chain in increasing amount at each higher trophic level is known as
(1) Eutrophication (2) Pollution
(3) Biomagnification (4) Accumulation

10. Out of the following endrocine glands which are unpaired?
(1) Ovary (2) Testes
(3) Pancreas (4) Adrenal

11. How many pairs of spinal nerves arise from spinal cord?
(1) 31 Pairs (2) 30 Pairs
(3) 40 Pairs (4) None of these

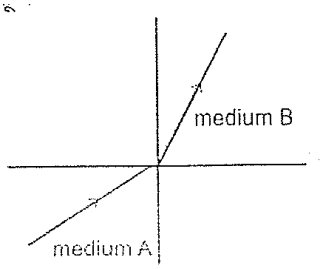
12. What is the information source for making proteins in the nucleus of a cell?
(1) IUCD (2) DNA
(3) ER (4) ATP

13. Asexual reproduction takes place through budding in
(1) Amoeba (2) Yeast
(3) Plasmodium (4) Leishmania

14. Which of the following is an example of homologous organs is?
(1) Our arm and a dog's foreleg (2) Our teeth and an elephant's tusk
(3) Potato and runners of grass (4) All of the above

15. An object is placed at 10 cm from a convex mirror of focal length 20 cm, find the position of image?
(1) 3.33 cm behind the mirror (2) 3.33 cm in front of the mirror
(3) 6.67 cm in front of the mirror (4) 6.67 cm behind the mirror

16. A light ray enters from medium A to medium B as shown in figure below. The refractive index of medium B relative to A will be



(1) Greater than unity
(2) Less than unity
(3) Equal to unity
(4) Zero

17. Which of the following defects can be rectified by using cylindrical lenses?
(1) Myopia
(2) Presbyopia
(3) Astigmatism
(4) Hypermetropia

18. Splitting of white light into its component is called
(1) Dispersion
(2) Scattering
(3) Total internal Reflection
(4) Spectrum

19. Formation of Rainbow is due to
(1) Scattering
(2) Dispersion
(3) Atmospheric Refraction
(4) Total internal Reflection

20. Speed of light is maximum in a medium whose refraction index with respect to air is
(1) 1.33
(2) 1.5
(3) 1.2
(4) 1.67

21. In a hydro-Power Plant
(1) Potential energy possessed by stored water is converted into electricity
(2) Kinetic energy possessed by stored water is converted into potential energy
(3) Electricity is extracted from water
(4) Water is converted into steam to produce electricity

22. Right hand Thumb Rule is used for
(1) Direction of induced current
(2) Direction of force acting on a current-carrying conductor inside the magnetic field
(3) Direction of magnetic field due to current carrying conductor
(4) direction of force on a moving charge inside magnetic field

23. A positively charged particle projected towards west is deflected towards north by a magnetic field then the direction of magnetic field is
(1) Towards South
(2) Forwards East
(3) Downward
(4) Upward

24. Phenomenon of electromagnetic induction is
(1) Process of charging a body
(2) Process of generating magnetic field due to a current passing through a coil
(3) Producing induced current in a coil due to relative motion between a magnet and the coil
(4) Process of rotating a coil of an electric motor

25. Two electrical appliances are connected in series. If their powers are P_1, P_2, then the power of combinations will be

(1) $P_1 + P_2$
(2) $\frac{1}{P_1}+\frac{1}{P_2}$
(3) $\frac{P_1P_2}{P_1+P_2}$
(4) None

26. Which of the following is not a use of electrolysis?
(1) Electroplanting
(2) Printing
(3) Purification of metals
(4) Photography

27. Ratio of resistivities of two materials A and B is 1:2, ratio of their length is 3:4. If the ratio of their radii is 2:3, find the ratio of resistance of A and B,
(1) 3:4
(2) 4:3
(3) 32:27
(4) 27:32

28. Chemical reaction between quick lime and water is characterized by
(1) evolution of Hydrogen gas (2) formation of slaked lime precipitate
(3) change in temperature of mixture (4) change in colour of the product

29. Process of respiration is
(1) an oxidation reaction which is endothermic (2) a reduction reaction which is exothermic
(3) a combination reaction which is endothermic (4) an oxidation reaction which is exothermic

30. The discomfort caused by indigestion due to over eating can be cured by taking
(1) vinegar (2) lemon juice
(3) baking soda (4) caustic soda

31. Which of the following is treated with chlorine to obtain bleaching powder?
(1) $CaSO_4$ (2) $Ca(OH)_2$
(3) $Mg(OH)_2$ (4) KOH

32. Which of the following is the most reactive metal ……..
(1) aluminium (2) copper
(3) tin (4) calcium

33. Which of the following pair of reactants can undergo a displacement reaction under appropriate conditions?
(1) $MgSO_4 + Fe$ (2) $ZnSO_4 + Fe$
(3) $MgSO_4 + Pb$ (4) $CuSO_4 + Fe$

34. Calamine ore can be converted into ZnO by the process of
(1) Dehydration (2) Roasting
(3) Calcinations (4) Sulphonation

35. Which of the following always contains mercury as one of the constituents?
(1) Stainless steel (2) Solder
(3) Duralumin (4) Zinc Amalgam

36. Property of self-combination of the atoms of the same element to form long chains is known as
(1) Protonation (2) Carbonation
(3) oronation (4) Catenation

37. Hydrocarbon 2-methylbutane is an isomer of
(1) n-pentane (2) n-butane
(3) propane (4) iso-butane

38. Chlorine reacts with saturated hydrocarbons at room temperature in the
(1) absence of sunlight (2) presence of sunlight
(3) absence of moisture (4) presence of H_2SO_4

39. On moving from left to right in a period of the periodic table, the atomic number of elements increases. What happens to the size of atoms of elements on moving from left to right in a period?
(1) Increases (2) Decreases
(3) Remains the same (4) First increases then decreases

40. When a student put some copper turnings in a colourless solution, he observed that the solution gradually turned blue. The solution is most likely to be:
(1) Ferrours sulphate solution (2) Magnesium nitrate solution
(3) Silver nitrate solution (4) Copper sulphate solution

41. A narrow belt of about 8 to 16 km in width laying parallel to the slopes of the Shivalik is known as
(1) Doab (2) Bhangar
(3) Bhabar (4) Terai

42. The soil in the northern plain region of India consists of calcareous deposits and is locally known as
(1) Khadar (2) Black soil
(3) Doab (4) Kankar

43. A narrow belt of high attitude (above 12000 m) where westerly wind in the troposphere flows is known as
(1) Ozone layer (2) EI Nino
(3) EVSO (4) Jet stream

44. A warm ocean current that flows past the Peruvian coast in place of cold Peruvian current is known as
(1) ENSO (2) LA NINA
(3) EL Nino (4) Western Disturbance

45. Which one is the highest peak in the Eastern Ghats
(1) Nilgiri (2) Mahendragiri
(3) Parasnath (4) Doda Beta

46. Ganga plain lies between which river
(1) Yamuna and Teesta (2) Ghaggar and Teesta
(3) Yamuna and Brahmaputra (4) Teesta and Sarda

47. Non-metallic minerals are found in
(1) Igneous rocks (2) Metamorphic rocks
(3) Sedimentary rocks (4) Mixed rocks

48. Silicon used in the computer industry is obtained from
(1) Bauxite (2) Quartz
(3) cuprite (4) Magnetite

49. Which is the extreme south western port located at the entrance of lagoon with a natural harbor?
(1) Tuticorin (2) Chennai
(3) Kochi (4) Karwar

50. The national water ways no. 1 is located on the river
(1) Ganga (2) Brahmaputra
(3) Kaveri (4) Yamuna

51. The larger occurrence of minerals of igneous and metamorphic rocks are called
(1) Veins (2) Loads
(3) Layers (4) Beds

52. "Rat-hole" mining is found in
(1) Jharkhand (2) Nagaland
(3) Meghalaya (4) Odisha

53. In the context of France the fall of Bastille took place on
(1) 20th August 1789 (2) 14th August 1789
(3) 14th July 1789 (4) 14th August 1798

54. "The Spirit of Laws" book was written by
(1) Rousseau (2) John Locke
(3) Montesquieu (4) Nelson Mandela

55. Who led the Bolshevik group in Russia during Russian Revolution?
(1) Karl Marx (2) Friedrich Engels
(3) Leon Trotsky (4) Vladimir Lenin

56. Which incident led to the start of World War II?
(1) Russian invasion of Poland (2) German invasion of Russia
(3) German invasion of Poland (4) Japans sinking of ship at Pearl Harbour

57. When as the first world cup cricket successfully staged
(1) 1975 (2) 1947
(3) 1974 (4) 1976

58. Why did the Indians oppose the Rowlatt Act?
(1) It increased the taxes on land
(2) It gave the British the power to arrest and detain a person without a trial
(3) It put a ban on the congress party
(4) All of the above

59. Who said 'When France sneezes the rest of Europe catches cold?
(1) TT.S. Eliot (2) Metternich
(3) Count Cavour (4) Bismarck

60. Who was the founder of Hoa Hao movement?
(1) Huynh Phun So (2) Liang Oichad
(3) Phan Boi Chan (4) Ngyuagen Dinchien

61. During French colonization Thailand was known as
(1) Mekong (2) Yunnan
(3) Sagon (4) Siam

62. Which of the following was the first book printed by Gutenberg?
(1) New Testament (2) Bible
(3) chap Books (4) Diamond Sutra

63. Which one of the following was the 'city of gold'?
(1) Peru (2) Mexico
(3) Spain (4) El Dorado

64. "Godan" is a famous novel by
(1) Bhartendu Harishandra (2) Premchand
(3) Jaishankar Prasad (4) Namvar Singh

65. Iraq became independent in 1932 from which rule
(1) French (2) U.S.A
(3) British (4) Germany

66. Which country had faced the worst recorded famine is the world history in the year 1958 to 1960?
(1) Mexico (2) India
(3) Pakistan (4) China

67. On what charges was Nelson Mandela sentenced to life imprisonment?
(1) for corruption charges (2) for breaking the laws
(3) for treason (4) for possessing illegal proper

68. The number of seats reserved for Scheduled Caste (SC) in the Lok Sabha is
(1) 69 (2) 41
(3) 79 (4) 89

69. Which body exposed to the world that prisoners at Guantanamo Bay were being tortured in ways that violated the US laws?
(1) United Nations (2) Amnesty international
(3) International court of Justice (4) International Labour Organization

70. Which of the following system of power sharing is called checks and balance?
(1) Separation of power (2) Federal division of powers
(3) Horizontal division of powers (4) Vertical divisions of powers

71. Which one is the group of federal countries?
(1) India, USA, Iraq (2) USA, Switzerland and Libya
(3) USA, India, Switzerland (4) USA, India and Libya

72. Which party enjoys a strong hold in Tripura, Kerala and west Bengal?
(1) CPI (2) CPI (M)
(3) Trinamool Congress (4) CPI (L)

73. Who is the chairman of the planning commission?
(1) Finance Minister (2) chief Minister
(3) President (4) Prime Minister

74. World Trade Organization (WTO) was started at the initiative of ……
(1) Developing Countries (2) Asian Countries
(3) Developed Countries (4) European Countries

75. In which sectors maximum underemployment is found in India
(1) Secondary Sector (2) Primary Sector
(3) Tertiary Sector (4) None of the above

76. In which year National Rural Employment Gurantee Act as passed?
(1) 2008 (2) 2005
(3) 1991 (4) 1995

77. Gross Domestic Product (GDP) is the total value of…… produced during a particular year.
(1) All good and services (2) All final goods and services
(3) All intermediate and final good and services (4) None of the above

78. Golden Revolution associated with the product of
(1) Oil seeds (2) Poultry
(3) Horticulture (4) Cotton

79. What was the aim of antyoday programe
(1) unliftment of schedule tribe people
(2) upliftment of women
(3) helping the poorest of poor
(4) children welfare

80. ……is an example of indirect taxes is
(1) Corporate Tax
(2) Income Tax
(3) Estate Tax
(4) Entertainment Tax

81. If $(-1)^n + (-1)^{4n} = 0$, then n is
(1) any positive
(2) any negative
(3) any odd natural number
(4) any even natural number

82. If α and β be the zeroes of the polynomial $ax^2 + bx + c$, then the value of $\sqrt{\frac{\alpha}{\beta}} + \sqrt{\frac{\beta}{\alpha}}$ is

(1) b
(2) $\frac{-b}{\sqrt{ac}}$
(3) $\frac{-b}{ac}$
(4) $\frac{1}{ac}$

83. If -4 is a root of the quadratic equation $x^2 + px - 4 = 0$ and the quadratic equation $x^2 + px + k = 0$ has equal roots, find the value of k,

(1) $\frac{3}{4}$
(2) $\frac{7}{4}$
(3) $\frac{2}{9}$
(4) $\frac{9}{4}$

84. The value of $\sqrt{6+\sqrt{6+\sqrt{6+.....}}}$ is
(1) 4
(2) 3
(3) –4
(4) 3.5

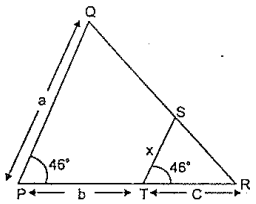
85. In an A.P., sum of first n terms is $\frac{3n^2}{2} + \frac{5n}{2}$. Find its 25^{th} term.
(1) 100
(2) 25
(3) 75
(4) 76

86. ABC is a right angle triangle, right angled at c. If p is the length of the perpendicular from C to AB, AB = c and BC = a and AC = b, then

(1) $\frac{1}{a^2} = \frac{1}{b^2} - \frac{1}{p^2}$
(2) $\frac{1}{p^2} = \frac{1}{a^2} - \frac{1}{b^2}$
(3) $\frac{1}{b^2} = \frac{1}{p^2} - \frac{1}{a^2}$
(4) $\frac{1}{p^2} = \frac{1}{a^2} + \frac{1}{b^2}$

87. In a given figure, x in term of a, b and c is

(1) $x = \frac{ac}{a+c}$
(2) $x = \frac{ab}{b+c}$
(3) $x = \frac{ac}{b+c}$
(4) $x = \frac{bc}{a+c}$



88. Two dice are thrown simultaneously. Find the probability of getting the sum prime number
(1) 12/5
(2) 12/15
(3) 5/12
(4) 1

89. Two poles of height a meters and b meters are p meters apart. Height of the point intersection of the lines joining the top of each pole to the foot of the opposite pole is given by,

(1) $\frac{ab}{a+b}$ (2) $\frac{a+b}{ab}$

(3) $\frac{ab}{a-b}$ (4) $\frac{a-b}{ab}$

90. If $\tan\theta = \frac{x\sin\phi}{1-\cos\phi}$ and $\tan\phi = \frac{y\sin\theta}{1-y\cos\theta}$

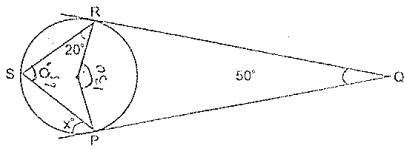
(1) $\frac{\sin\phi}{\sin\theta}$ (2) $\frac{\sin\theta}{\sin\phi}$

(3) $\frac{\sin\theta}{1-\cos\theta}$ (4) $\frac{\sin\theta}{1-\cos\phi}$

91. If tangents PA and PB from a point P to a circle with centre O are inclined to each other at angle of 80°, then ∠POA is equal to,

(1) 50° (2) 60°
(3) 70° (4) 80°

92. In the diagram, PQ and QR are tangents to the circle centre O, at P and R respectively. Find the value of x.



(1) 25 (2) 35
(3) 45 (4) 55

93. If h be the height and α the Semi-vertical angle of a right circular cone, then its volume is given by

(1) $\frac{1}{3}\pi h^3 \tan^2\alpha$ (2) $\frac{1}{3}\pi h^2 \tan^2\alpha$

(3) $\frac{1}{3}\pi h^2 \tan^3\alpha$ (4) $\frac{1}{3}\pi h^3 \tan^3\alpha$

94. If the mean of x and 1/x is M, the mean of x^3 and $1/x^3$ is

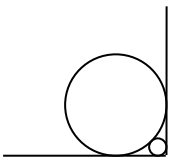
(1) $\frac{M^2-3}{2}$ (2) $M\left(4M^2-3\right)$

(3) M^3 (4) $M^3 + 3$

95. If x = a sec θ + b tan θ and y = a tan θ b sec θ prove that the value of $x^2 - y^2$ will be

(1) $a^2 - b^2$ (2) $a^2 + b^2$
(3) $a^2 + 1$ (4) $a^2 - 1$

96. A circle with radius 2 unit is placed against a right angle. Another smaller circle is also placed as shown in figure. What is the radius of the smaller circle?



(1) $3-2\sqrt{2}$ (2) $4-2\sqrt{2}$

(3) $7-4\sqrt{2}$ (4) $6-4\sqrt{2}$

97. Sum of n terms of the series
$\sqrt{2}+\sqrt{8}+\sqrt{18}+\sqrt{32}+.....$ is

(1) $\frac{n(n+1)}{2}$ (2) $2n(n+1)$

(3) $\frac{n(n+1)}{\sqrt{2}}$ (4) 1

98. Sum of first n odd natural numbers is

(1) n^2 (2) n + 1
(3) 2n + 1 (4) n

99. If x = 1 a common root of the equations $ax^2 + ax + 3 = 0$ and $x^2 + x + b = 0$, then ab

(1) 3 (2) 3.5

(3) 6 (4) –3

100. The value of K if the linear equations x + 2y = 3 and 5x + ky + 7 = 0 has unique solution is

(1) $K \neq 1$ (2) $K \neq 10$

(3) $K \neq 15$ (4) $K \neq 5$

ANSWERS

1. 3	**2.** 3	**3.** 2	**4.** 4	**5.** 4
6. 2	**7.** 3,4	**8.** 1	**9.** 3	**10.** 3
11. 1	**12.** 2	**13.** 2	**14.** 4	**15.** 4
16. 1	**17.** 3	**18.** 1	**19.** 4	**20.** 3
21. 1	**22.** 3	**23.** 4	**24.** 3	**25.** 1
26. 4	**27.** 4	**28.** 3	**29.** 4	**30.** 3
31. 2	**32.** 4	**33.** 4	**34.** 3	**35.** 4
36. 4	**37.** 1	**38.** 2	**39.** 2	**40.** 3
41. 3	**42.** 4	**43.** 4	**44.** 4	**45.** 2
46. 2	**47.** 3	**48.** 2	**49.** 3	**50.** 1
51. 2	**52.** 3	**53.** 3	**54.** 3	**55.** 4
56. 3	**57.** 1	**58.** 2	**59.** 2	**60.** 1
61. 4	**62.** 2	**63.** 4	**64.** 2	**65.** 3
66. 4	**67.** 3	**68.** 3,(Or no option)	**69.** 2	**70.** 3
71. 3	**72.** 2	**73.** 4	**74.** 1	**75.** 2
76. 2	**77.** 2	**78.** 1	**79.** 3	**80.** 4
81 3	**82.** 2	**83.** 4	**84.** 2	**85.** 4
86. 3,4	**87.** 3	**88.** 3	**89.** 1	**90.** 2
91. 1	**92.** 3	**93.** 1	**94.** 2	**95.** 1
96. 4	**97.** 3	**98.** 1	**99.** 1	**100.** 2