SECTION – A (MATHEMATICS)

1 The sum of the exponents of the prime factors in the prime factorisation of 196, is **[1]**

a) 2   b) 1   c) 4   d) 6

2 The LCM of two numbers is 1200. Which of the following cannot be their HCF? **[1]**

a) 500   b) 200   c) 600   d) 400

3 A number when divided by 61 gives 27 as quotient and 32 as the remainder, then the number is: **[1]**

a) 1796   b) 1569   c) 1679   d) 1967

4 The zeroes of the quadratic polynomial $x^2 + 99x + 127$ are **[1]**

a) both negative   b) one positive and one negative

c) both positive   d) both equal

5 The zeroes of the polynomial $x^2 - 3x - m(m + 3)$ are: **[1]**

a) $-m, -(m + 3)$ b) $m, -(m + 3)$ c) $-m, m + 3$ d) $m, m + 3$

6 If α, β be the zeros of the polynomial $2x^2 + 5x + k$ such that $\alpha^2 + \beta^2 + \alpha\beta = \frac{21}{4}$ then k= **[1]**

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

7 The system of equations $2x + 3y - 7 = 0$ and $6x + 5y - 11 = 0$ has **[1]**

a) unique solution   b) infinite many solutions   c) no solution   d) non zero solution

8 The value of k for which the system of linear equations $x + 2y = 3, 5x + ky + 7 = 0$ is inconsistent is: **[1]**

a) $-\frac{14}{3}$ b) 5   c) $\frac{2}{5}$ d) 10

9 If the system $6x – 2y = 3, kx – y = 2$ has a unique solution, then **[1]**

a) k = 3   b) $k \neq 4$ c) $k \neq 3$ d) k = 4

10 The graphic representation of the equations $x + 2y = 3$ and $2x + 4y + 7 = 0$ gives a pair **[1]**

of

a) parallel lines   b) intersecting lines   c) coincident lines   d) none of these

11 The values of k for which the quadratic equation $2x^2 - kx + k = 0$ has equal roots is   **[1]**

a) 0 only   b) 8 only   c) 0, 8   d) 4

12 If the equation $9x^2 + 6kx + 4 = 0$ has equal roots, then the roots are both equal to   **[1]**

a) $\pm \frac{3}{2}$ b) $\pm \frac{2}{3}$ c) 0   d) ± 3

13 $(x^2 + 1)^2 - x^2 = 0$ has   **[1]**

a) two real roots   b) no real roots   c) one real root.   d) four real roots

14 Which one of the following is not a quadratic equation?   **[1]**

a) $x^2 + 3x = (-1)(1 - 3x)^2$ b) $(x + 2)^2 = 2(x + 3)$

c) $(x + 2)(x - 1) = x^2 - 2x - 3$ d) $x^3 - x^2 + 2x + 1 = (x + 1)^3$

15 A quadratic equation $ax^2 + bx + c = 0$ has real and distinct roots, if   **[1]**

a) $b^2 - 4ac$ b) $b^2 + 4ac$ c) $b^2 - 4ac = 0$ d) None of these

16 If one root of the equation $x^2 + ax + 3 = 0$ is 1, then its other root is   **[1]**

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

17 In an AP, if $a = 1$, $a_n = 20$ and $S_n = 399$, then n is equal to   **[1]**

a) 42   b) 19   c) 38   d) 21

18 The 9th term of the A.P. – 15, –11, –7, ..., 49 is: **[1]**

a) 17   b) 13   c) 0   d) 32

19 If 18, a, b, - 3 are in A.P., then $a + b =$ **[1]**

a) 7   b) 15   c) 19   d) 11

20 The 2nd term of an AP is 13 and its 5th term is 25. What is its 17th term?   **[1]**

a) 69   b) 77   c) 81   d) 73

21 The 5th term of an AP is - 3 and its common difference is - 4. The sum of its first 10 terms is   **[1]**

a) 30   b) - 50   c) - 30   d) 50

22 Let S_n denote the sum of n terms of an A.P. whose first term is a. If the common   **[1]**

differenced is given by $d = S_n - kS_{n-1} + S_{n-2}$ then k =

a) 2   b) 1   c) 3   d) none of these

23   The number of terms of an AP 5, 9, 13, …. 185 is: **[1]**

a) 41   b) 51   c) 31   d) 46

24   The 7th term from the end of the A.P. - 11, - 8, - 5, ..., 49 is   **[1]**

a) 28   b) 31   c) - 11   d) - 8

25   The line segments joining the midpoints of the adjacent sides of a quadrilateral form   **[1]**

a) a rhombus   b) a square   c) a parallelogram   d) a rectangle

26   In△ ABC and △ DEF, it is given that ∠ B = ∠ E, ∠ F = ∠ C and AB = 3 DE, then the two triangles are   **[1]**

a) congruent but not similar   b) similar but not congruent

c) neither congruent nor similar   d) similar as well as congruent

27   In△ ABC and △ PQR, ∠ B = ∠ Q, ∠ R = ∠ C and AB = 2PQ.Then, the triangles are   **[1]**

a) Congruent but not similar.   b) Similar but not congruent.

c) Neither congruent nor similar.   d) Congruent as well as similar.

28   △ ABC is a right triangle right - angled at A and $AD \perp BC$, Then $\frac{BD}{DC} =$ **[1]**

a) $\frac{AB}{AD}$ b) $\frac{AB}{AC}$ c) $\left(\frac{AB}{AD}\right)^2$ d) $\left(\frac{AB}{AC}\right)^2$

29   △ PQR ∼ △ XYZand the perimeters of △ PQRand △ XYZare 30 cm and 18 cm respectively. If QR = 9 cm, then, YZ is equal to   **[1]**

a) 4.5 cm.   b) 5.4 cm.   c) 12.5 cm.   d) 9.5 cm.

30   In triangles ABC and DEF,∠ A - ∠ E = 40°, AB : ED = AC : EF and ∠ F = 65°, then ∠ B =   **[1]**

a) 75° b) 85° c) 35° d) 65°

31   In△ ABC, a line XY parallel to BC cuts AB at X and AC at Y. If BY bisects ∠XYC, then   **[1]**

a) BC = CY   b) BC =BY   c) BC≠ BY   d) BC≠ CY

32   If the diagonals of a quadrilateral divide each other proportionally then it is a   **[1]**

a) square   b) rectangle   c) trapezium   d) parallelogram

33 The ratio in which (4, 5) divides the join of (2, 3) and (7, 8) is   **[1]**

a) 2 : 3   b) - 3 : 2   c) - 2 : 3   d) 3 : 2

34 AOBC is a rectangle whose three vertices are A(0, 3), O(0, 0) and B(5, 0). The length   **[1]**
of its diagonal is

a) 5   b) 3   c) $\sqrt{34}$ d) 4

35 If x is a positive integer such that the distance between points P (x, 2) and Q (3, - 6) is   **[1]**
10 units, then x =

a) 3   b) 9   c) - 9   d) - 3

36 _____ is an algebraic tool for studying geometry.   **[1]**

a) Statistics   b) Trigonometry   c) Coordinate Geometry   d) None of these

37 If A(1, 3), B(- 1, 2), C(2, 5) and D(x, 4) are the vertices of a ‖gm ABCD then the   **[1]**
value of x is

a) 0   b) 3   c) $\frac{3}{2}$ d) 4

38 The distance between the points (3, - 2) and (- 3, 2) is: **[1]**

a) 40   b) $4\sqrt{10}$ c) $2\sqrt{10}$ d) $\sqrt{52}$

39 If (a, b) is the mid - point of the line segment joining the points A(10, –6) and B(k, 4)   **[1]**
and a – 2b = 18, the value of k is

a) 40   b) 4   c) 30   d) 22

40 If the points (x, y), (1, 2) and (7, 0) are collinear, then the relation between x and y is   **[1]**
given by

a) 3x - y - 7 = 0   b) 3x + y + 7 = 0   c) x + 3y - 7 = 0   d) x - 3y + 7 = 0

SECTTION – B (SCIENCE)

41 In which of the following, the image of an object placed at infinity will be highly   **[1]**
diminished and point sized?

a) Concave mirror only   b) Convex lens only

c) Concave mirror, convex mirror, concave lens and convex lens   d) Convex mirror only

42 When red, blue and green light coming parallel to principal axis fall on a convex lens,
they will converge on the axis at: **[1]**

a) one point   b) three different points   c) two different points   d) None of these

43. The focal length of a small concave mirror is 2.5 cm. In order to use this concave mirror as a dentist's mirror, the distance of tooth from the mirror should be: **[1]**

    a) 4.5cm   b) 1.5cm   c) 3.5cm   d) 2.5cm

44. The laws of reflection hold good for   **[1]**

  a) convex mirror only   b) concave mirror only

  c) plane mirror only   d) all mirrors irrespective of their shape

45. 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: [1]

    a) 2 cm   b) 10 cm   c) 4 cm   d) 22 cm

46. The deviation in the path of ray of light can be produced   [1]

   a) By a glass prism but not by rectangular glass slab.

  b) By a glass prism as well as a rectangular glass slab.

  c) By a rectangular glass slab but not by a glass prism.

  d) Neither by a glass prism nor by rectangular glass slab

47. Person suffering from cataract has   [1]

    a) weakened ciliary muscles   b) opaque eye lens

    c) elongated eyeball   d) excessive curvature of eye lens

48. Hypermetropia can be corrected by: [1]

   a) Concave lens   b) Plano - concave lens   c) Convex lens   d) Plano - convex lens

49. The defect of vision in which a person is able to see nearby objects clearly, but not far objects is called: [1]

  a) Long - sightedness or Hypermetropia   b) Short - sightedness or myopia

  c) Astigmatism   d) Cataract

50. The clear sky appears blue because   [1]

   a) Violet and blue lights get scattered more than lights of all other colours by the atmosphere.

  b) Blue light gets absorbed in the atmosphere.

  c) Light of all other colours is scattered more than the violet and blue colour lights by

the atmosphere.

d) Ultraviolet radiations are absorbed in the atmosphere.

51. The part of the eyes refracts light entering the eye from external objects?　　　[1]

a) Lens　　　　　b) Pupil　　　　　c) Cornea　　　　　d) Iris

52. Which of the following units could be used to measure electric charge?　　　[1]

a) Ampere　　　　b) Joule　　　　c) Volt　　　　　d) Coulomb

53. The work done in moving a unit charge across two points in an electric circuit is a measure of:　　　　　　　　　　　　　　　　　　　　　　　　　　[1]

a) Potential difference　　b) Power　　c) Resistance　　d) Current

54. Which of the following gases can be used for storage of fresh sample of an oil for a long time?　　　　　　　　　　　　　　　　　　　　　　　　　　[1]

a) Carbon dioxide or helium　　　　　　　b) Nitrogen or oxygen

c) Carbon dioxide or oxygen　　　　　　　d) Helium or nitrogen

55. The name was given to a reaction in which one element, molecule or radical is removed by another is:　　　　　　　　　　　　　　　　　　　　　　[1]

a) Displacement reaction　　　　　　　　b) Decomposition reaction

c) Combination reaction　　　　　　　　　d) Double displacement reaction

56. The colour of metal deposited is when iron nails are dipped in an aqueous solution of copper sulphate.　　　　　　　　　　　　　　　　　　　　　[1]

a) Reddish - brown　　　　b) Silvery white　　　c) Grey　　　d) No metal is deposited

57. Name the substance oxidized and reduced in the following reaction:　　　[1]
$Fe_2O_3 + 3CO \rightarrow 2Fe + 3CO_2$

a) Fe_2O_3, Fe　　　b) CO, CO_2　　　c) Fe, CO　　　d) CO, Fe_2O_3

58. Fatty foods become rancid because of　　　　　　　　　　　[1]

　A.　Oxidation

　B.　Reduction

　C.　Reaction with Hydrogen

　D.　Reaction with oxygen

a) B and C　　　　b) A and D　　　　c) A and C　　　d) All of these

59. What happens when silver chloride is put under sunlight? [1]

a) Only silver metal is formed. b) Silver metal and hydrogen gas are formed.

c) Silver metal and chlorine gas are formed. d) Only hydrogen gas is formed.

60. During the preparation of hydrogen chloride gas on a humid day, the gas is usually passed through the guard tube containing calcium chloride. The role of calcium chloride taken in the guard tube is to [1]

a) Absorb moisture from the gas b) Absorb the evolved gas

c) Absorb Cl - ions from the evolved gas d) Moisten the gas

61. Washing soda has the formula [1]

a) $Na_2CO_3.7H_2O$ b) Na_2CO_3 c) $Na_2CO_3.H_2O$ d) $Na_2CO_3.10H_2O$

62. NaCl and Na_2SO_4 belongto the family of [1]

a) chloride salts b) neutral salts c) sodium salts d) sulphate salts

63. What do all acids and all bases have in common? [1]

a) all acid and bases release OH^- ions in solution

b) all acids and bases form ions in solution

c) all acid release OH^- and bases release H^+ ions in solution

d) all acids and bases release H^+ ions in solution

64. Between dilute and concentrated samples of HNO_3 which sample of HNO_3 will have a higher H^+ ion concentration? [1]

a) Conc. HNO_3 b) Dil.HNO_3

c) Both have same H^+ ion concentration d) No H^+ ion is present is HNO_3

65. The following pairs of substances are available in the laboratory:

A. Zinc and dilute hydrochloric acid

B. Zinc and dilute sodium hydroxide solution

C. Sodium bicarbonate and dilute hydrochloric acid

Which of these can be used to produce a colourless and odourless gas which gives a pop sound on burning? [1]

a) A and B b) A and C c) A only d) B only

66. The pH of the gastric juices released during digestion is   [1]

a) equal to 0   b) equal to 7   c) more than 7   d) less than 7

67. On complete digestion of fats, the end products are   [1]

a) Fatty acid and amino acids   b) Fatty acids and glycerol

c) Glucose and amino acids   d) Glucose and glycerol

68. The process by which blood is cleared of metabolic wastes in case of kidney failure is[1]

a) dialysis   b) filtration   c) transplantation   d) artificial kidney

69. A student puts germinating seeds into the conical flask and miss to put KOH solution in hanging test tube what he observes   [1]

a) Water level will not rise in bent tube

b) Water level will decrease in bent tube

c) CO_2 will not be absorbed

d) Water level will not rise in bent tube and CO_2 will not be absorbed

70. In which of the following group/ groups of animals, the heart does not pump oxygenated blood to different parts of the body?   [1]

a) Pisces only   b) Amphibians only

c) Pisces and amphibians   d) Amphibians and reptiles only

71. Cramps are caused by heavy exercise resulting in the accumulation of   [1]

a) Heat   b) Ethanol   c) Carbon dioxide   d) Lactic acid

72. During contraction of heart, what prevents back flow of blood?   [1]

a) Valves in heart   b) Thin walls of atria

c) Thick muscular walls of ventricles   d) All of the these

73. To transfer the peel from Petri dish to the slide, we generally use   [1]

a) Pair of tong   b) Forceps   c) Brush   d) Needle

74. Which of the following is not an involuntary action?   [1]

a) Heart beat   b) Salivation   c) Chewing   d) Vomiting

75. The growth of pollen tubes towards ovules is due to   [1]

a) geotropism   b) chemotropism   c) phototropism   d) hydrotropism

76. Select the mis - matched pair   [1]

a) Estrogen - Ovary   b) Testosterone - Testes

c) Adrenaline - Pituitary gland   d) Thyroxin - Thyroid gland

77. The shape of guard cells changes due to change in the   [1]

a) amount of water in cells   b) temperature of cells

c) position of nucleus in the cells   d) protein composition of cells

78. What is the position of the pancreas in the body?   [1]

a) Embedded in stomach   b) Above liver

c) Below stomach   d) Just above stomach

79. The substance that triggers the fall of mature leaves and fruits from plants is due to [1]

a) cytokinin   b) gibberellin   c) abscisic acid   d) auxin

80. Electrical impulse travels in a neuron from -   [1]

a) Cell body→ dendrite → axon → axonal end.   b) Dendrite→ cell body → axon → axonal end

c) Axonal end→ axon → cell body → dendrite   d) Dendrite→ axon → axonal end → cell body.

SECTION – C (SOCIAL SCIENCE)

81. The concept of Non - Cooperation was turned into a movement through the   [1]

a) surrender of government awarded titles

b) boycott of civil services, army, police, courts and legislative councils

c) boycott of foreign goods and schools

d) all of these

82. The Non - Cooperation Movement was started by Mahatma Gandhi in support of: [1]

a) Khilafat and Swaraj   b) Swaraj   c) Khilafat   d) Chauri Chaura

83. Who was the first writer to create the image of **Bharat Mata** as an identity of India? [1]

a) Bankim Chandra Chattopadhyay   b) Rabindranath Tagore

c) Mahatma Gandhiji   d) Abanindranath Tagore

84. Which of the following statements are not associated with the Non - Cooperation

Movement ?

a) Gandhiji launched the non - cooperation movement

b) Thousands of students left government - controlled schools; headmasters and teachers resigned; lawyers gave up their practice

c) Only the Brahmans and the rich took part in the movement

d) The council elections were boycotted even by the Justice Party of Madras

85. The two great writers of Bengal and Madras, who contributed to nationalism in the late nineteenth century through folklore were: [1]

a) Rabindranath Tagore and Natesa Sastri   b) Abanindranath Tagore and Ravi Verma

c) Jamini Roy and Ravi Verma   d) Abanindranath Tagore and Rabindra Nath Tagore

86. In 1916, Gandhiji travelled to Champaran in Bihar to inspire the peasant to struggle against the: [1]

a) Untouchables   b) Upper caste people

c) Oppressive plantation system   d) Landless agriculture labourers

87. When and where was the Non - Cooperation program adopted by the Congress?   [1]

a) At Bombay in December 1920   b) At Calcutta in January 1921

c) At Surat in December 1920   d) At Nagpur in December 1920

88. _____ cloth was often more expensive than mass - produced mill cloth.   [1]

a) Cotton   b) Jute   c) Khadi   d) Silk

89. Natesa Sastri expressed and proved his love for folklore by: [1]

a) All of these

b) By calling it the most trustworthy manifestation of the people's real thoughts and characteristics

c) Believing that folklore was national literature

d) By publishing a massive four - volume collection of Tamil folk tales 'The Folklore of Southern India'

90. When did Mahatma Gandhi return to India from South Africa?   [1]

a) 1915   b) 1921   c) 1919   d) 1913

91. Which of the following was the first state to pass resolution for Joint Forest

Management?   [1]

a) Madhya Pradesh   b) Assam   c) Punjab   d) Orissa

92. When was Indian Wildlife Protection Act implemented?   [1]

a) 1970   b) 1976   c) 1974   d) 1972

93. Which communities worship the Mahua and Kadamba trees during weddings?   [1]

a) Santhals   b) Both Mundas and Santhals   c) Mundas   d) None of these

94. Which of the following conservation strategies do not directly involve community participation?   [1]

a) Joint forest Management   b) Beej Bachao Andolan

c) Demarcation of wild life Sanctuaries   d) Chipko Movement

95. The Chipko Movement was associated with _____.   [1]

a) Forest conservation b) Woman rights   c) Political rights   d) Rights of adivasis

96.__are used to divert perennial springs on the hilltops to the lower reaches by gravity[1]

a) Iron pipes   b) PVC pipes   c) Motors   d) Bamboo pipes

97. The river on which the Sardar Sarovar Project is constructed is: [1]

a) Narmada   b) Krishna   c) Chambal   d) Mahanadi

98. Water scarcity in most cases is caused by: [1]

a) high population   b) low population   c) over - exploitation   d) low rainfall

99. In arid and semi - arid regions, agricultural fields were converted into rain - fed storage structures that allowed the water to stand and moisten the soil like the   [1]

a) inundation channels   b) lakes   c) 'guls' or 'kuls'   d) 'khadins' and 'Johads'

100. Rooftop rainwater harvesting was commonly practised to store drinking water, particularly in the state of: [1]

a) Kerala   b) Karnataka   c) Haryana   d) Rajasthan

101. How many languages are accepted in the Indian constitution?   [1]

a) 22   b) 28   c) 20   d) 21

102. All the panchayat Samitis or Mandals in a district together constitute the: [1]

  a) Village Cluster   b) Zilla Parishad   c) Block   d) Gram Panchayat

103. It is the decision - making body for the entire village: [1]

a) Mayor   b) State government   c) Gram panchayat   d) Zilla parishad

104. _____ list includes subjects of national importance. [1]

a) State   b) Concurrent   c) Union   d) Residuary

105. In a federal system, both the Central and the State governments are _____. [1]

a) totally autonomous   b) inherently separate spheres of government

c) endowed with exclusively separate powers   d) separately answerable to the people

106. In a municipal corporation, Municipal chairperson is called the: [1]

a) Panch   b) Sarpanch   c) District Collector   d) Mayor

107. Subjects such as police, trade, commerce, agriculture, and irrigation are included in which of the following list? [1]

a) State   b) Residuary   c) Concurrent   d) Union

108. Every candidate and party needs to win the confidence of more than one caste and community to win elections in the Parliament because: [1]

a) The focus of the Parliament is caste and nothing else

b) All the parliamentary constituencies in the country have a clear majority of one single caste

c) It does not seek their accountability towards the people

d) No parliamentary constituency in the country has a clear majority of one single caste

109. In which one of the following countries the participation of women in public life is very high? [1]

a) Sweden   b) Pakistan   c) India   d) Bangladesh

110. The Scheduled Castes are commonly known as: [1]

a) Dalits   b) Superior   c) OBCs   d) Adivasis

111. _____ is an important source of economic inequality because it regulates access to resources of various kinds. [1]

a) Religion   b) Community   c) Gender   d) Caste

112. Our Constitution does not give a special status to any religion. It is one of the features of: [1]

a) communalism   b) socialism   c) secularism   d) federalism

113. Development of a country can generally be determined by   [1]

a) its average literacy level   b) health status of its people

c) its per capita income   d) all the these

114. Human development focuses on: [1]

a) Well being of the people   b) Salary of the people

c) Education of the people   d) Security of the people

115. Which of the following states has the highest net attendance ratio secondary stage, 2013 - 14?   [1]

a) Bihar   b) Kerala   c) Haryana   d) Jammu and Kashmir

116. According to 2011census which of the following state has least literacy rate(%)? [1]

a) Bihar   b) Haryana   c) Kerala   d) Goa

117. Freedom, security, and respect are: [1]

a) Unimportant things   b) Non - materialistic things

c) Materialistic thing   d) Monetary things

118. Money can buy us: [1]

a) Relationsb) Non material thingsc) Material thingsd) Friends

119. Classification of countries on the basis of their income is done by calculating: [1]

a) Literacy rate   b) BMI   c) Per capita income   d) Infant mortality rate

120. There are 4 families in a country with per capita income₹ 40,000. Family A earns ₹ 35,000, family B earns ₹ 50,000, Family C earns ₹ 29,000. What is the income family D?[1]

a) ₹ 44,000   b) ₹ 48,000   c) ₹ 46,000   d) ₹ 45,000