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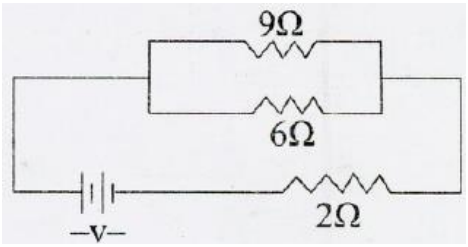
SCHOLASTIC APTITUDE

Physics

51. A satellite having circular orbit about the earth has a kinetic energy Ex. What is the minimum amount of energy to be added so that it escapes from the earth.

(A) $\frac{Ex}{4}$ (B) $\frac{Ex}{2}$ (C) Ex (D) 2 Ex

52. If power dissipated in the 9Ω resistor in the circuit is 36 watt. The potential difference across the 2Ω resistor is-



(A) 4 volt (B) 8 volt (C) 10 volt (D) 2 volt

53. A ball is released from the top of tower of height h meter. It takes T seconds to reach the ground. What is the position of the ball at T/3 second?

(A) $\frac{h}{9}$m from ground (B) $\frac{7h}{9}$m from the ground

(C) $\frac{8h}{9}$m from ground (D) $\frac{17h}{9}$m from the ground

54. A particle undergo uniform circular motion. About which point on the plane of the circle will be angular momentum of the particle remains conserved.

(A) Centre of the circle (B) On the circumstance of circle

(C) Inside the circle (D) Outside the circle

55. A body has mass 100 kg, what work has to done to increase its velocity from 2m/s to 6m/s.

(A) 100 J (B) 200 J (C) 1600 J (D) 600 J

56. 1 dioptre is the power of a lens whose focal length is

(A) 2 m (B) 1 m (C) 3 m (D) 1.5 m

57. The essential difference between AC generator and DC generator is –

(A) DC generator will generate a higher voltage

(B) AC generator will generate a higher voltage

(C) AC generator has slip rings while DC generator has a commutator.

(D) AC generator has electric magnet where as DC generator has permanent magnet.

58. A bullet of mass 60 gm moving with the velocity of 500 m/s is brought to rest in 0.01 sec. Its impulse will be-

(A) 40 NS (B) -30NS (C) -20NS (D) +30NS

59. The radioactive decay of Uranium into Thorium is represented by equation.

$_{92}^{238}U \rightarrow {}_{90}^{234}Th + x$ What will be x

(A) electron (B) proton (C) alpha particle (D) neutron

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60. Two bobs of masses 1 kg and 2 kg are suspended from a rigid support by threads of length 4 m and 1 m respectively. Find the ratio of their time period.
(A) 4 (B) 8 (C) 2 (D) 12

61. An electron and proton enter a magnetic field with equal velocities. Which one of them experiences more force.
(A) electron (B) proton
(C) It cannot be predicted (D) Both experiences same force

62. Where should an object be placed in front of convex lens to get a real image of the same size of the object
(A) At the principal focus of the lens
(B) At twice the focal length
(C) At infinity
(D) Between optical centre of the lens and its principal focus

63. The value of 45^{o}c temperature in Fahrenheit will be
(A) 118^{o}F (B) 113^{o}F (C) 120^{o}F (D) 115^{o}F

Chemistry

64. You are given a solution of $AgNO_3$ which of the following do you think cannot displace, Ag from $AgNO_3$ solution.
(A) Magnesium (B) Zinc (C) Gold (D) Copper

65. The atomic number of four elements A, B, C, D are 6, 8, 10, 12 respectively. The two elements which can react to from an ionic bond are-
(A) A and D (B) B and C (C) A and C (D) B and D

66. Out of the following pair of compounds the unsaturated compounds are-
(A) C_2H_6 and C_4H_6 (B) C_2H_{12} and C_5H_{12} (C) C_4H_6 and C_6H_{12} (D) C_2H_6 and C_4H_{10}

67. Which of following set of elements is written in order of their increasing metallic character-
(A) Mg, A1, Si (B) C, O, N (C) Na, Li, K (D) Be, Mg, Ca

68. Which of the following statements are correct about properties of colloids-
(A) A colloid is a Homogenous mixture
(B) The size of particles of a colloid is too small to be individually seen by naked eye.
(C) Colloids are big enough to scatter a beam of light passing through it & make its path visible-
(1) a,b,c are correct (2) b and c are correct
(3) a and b are correct (4) a and c are correct

69. Assertion (A)
When we dip Iron nail into $CuSO_4$ Solution the colour of solutions changes.
Reason (R) : Copper is less reactive than iron.
(A) Both A and R are correct but R is not correct reason for A
(B) Both A and R are correct, R is correct reason for A.
(C) A is correct and R is incorrect.
(D) A is oncorrect and R is correct.

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70. Arrange the Li, Be, B, C, N elements according to increasing order of atomic radii.
(A) $N < C < B < Be < Li$ (B) $C < Li < N < Be < B$
(C) $Li < Be < B < C < N$ (D) $B < Be < Li < C < N$

71. Elements A, B, C having positions in periodic table-

Group 16	Group 17
--------	--------
--------	A
--------	--------
B	C

(A) A is a metal
(B) C is smaller in size as compared to B
(C) Element A gives negativity charged ion
(1) a, b and c are correct (2) only b and c are correct
(3) only b is correct (4) a and c are correct

72. Which of the following is having maximum double bonds-
(A) Propanone (B) Benzene (C) Propene (D) Propanol

73. Carbon atom in graphite is combined with how many other carbon atoms-
(A) 1 (B) 2 (C) 3 (D) 4

74. A solution contains 58.5 gm of common salt in 360 gm of water calculate the total number of protons in solution.
(A) $21x6.023x10^{23}$ (B) $22.8x6.023x10^{23}$
(C) $200x6.023x10^{23}$ (D) $228x6.023x10^{23}$

75. A solution of calcium hydroxide is used for white washing walls. After two to three days of white washing, walls start shining due to formation of compound.
(A) CaO (B) $CaCO_3$ (C) $CaSO_4$ (D) $Ca(HCO_3)_2$

76. Which mass of O_2 (Oxygen molecule) will contain the same number of molecules as 2.5 moles of $C\ell_2$.
(A) 180 gm (B) 100 gm (C) 71 gm (D) 80 gm

Biology

77. Which one of the following statement is true-
(A) In humans there are two pairs of sex chromosome.
(B) A child who inherits an x chromosome from father will be a boy.
(C) A child who inherits an y choromosome from father will be a girl.
(D) A child who inherits an x choromosome from father will be a girl.

78. The Pancreas secretes Pancreatic Juice which contains _____ enzyme for digesting proteins.
(A) Lipase (B) Amylase (C) Zymase (D) Trypsin

79. Involuntary actions including blood pressure, salivation and vomiting are controlled by-
(A) Cerebellum (B) Pons (C) Cerebrum (D) Medulla

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80. The correct pathway of blood in circulatory sysyem is-
(A) Auricles → ventricles → Arteries → Veins
(B) Ventricles → Auricles → Veins → Arteries
(C) Ventricles → Veins → Arteries → Auricles
(D) Veins → Ventricles → Arteries → Auricles

81. Heart muscle cells are-
(A) Round, unbranched, uninucleate
(B) Non cylinderical,branched and uninucleate
(C) Cylindrical, unbranched and multi nucleate
(D) Cylindrical, branched and uninucleate

82. Which of the following is the correct features of 'Lymph'
(A) It is similar to the plasma of blood, colourless and contains less protein.
(B) Similar to the WBC of blood, colourless and contain more protein.
(C) Similar to the RBC of blood and red in colour.
(D) It contains more fat.

83. Match the item in coloum-I with those in coloum-II and select the correct choice.

Column I		Column II	
A	Food Chain	1	Elephant
B	Food Web	2	Jackal
C	Herbivore	3	Series of organism feeding on one another
D	Carnivore	4	Inter linked food chain

(1) A- 3 B-4 C-1 D-2
(2) A-2 B-1 C-3 D-4
(3) A-1 B-2 C-3 D-4
(4) A-4 B-3 C-2 D-1

84. Which of the following is not a part of the female reproductive system in human beings.
(A) Ovary (B) Uterus (C) Vasdeferens (D) Fallopain tube

85. _____ smoothens bone surface at points and is also present in the nose, ear, trachea & larynx.
(A) Tendons (B) Ligament (C) Areolar tissues (D) Cartilage

86. Which of the following plant group bear naked seeds and usually perennial, evergreen and woody are-
(A) Pteridophyta (B) Gymnosperms (C) Bryophyte (D) Angiosperms

87. The site for complete digestion of carbohydrates, proteins and fats is-
(A) Large intestine (B) Stomach (C) Small Intestine (D) Mouth

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88. Which of the following are characteristic features of cells of Meristematic tissues-
(A) Actively dividing cells with dense cytoplasm, thick cell wall and prominent nuclei.
(B) Actively dividing cells with dense cytoplasm, thin cell wall and no vacuoles.
(C) Actively dividing cellswith little cytoplasm, thin cell wall and prominent nuclei.
(D) Actively dividing cells with thin cytoplasm, thin cell wall and no vacnoles

89. Potato and runners of grass is an example of –
(A) Homologous organs (B) Analogous organs
(C) Vestigial organs (D) Atavism

90. Which of the following are sensitive to sulphur dioxide
(A) Algae (B) Lichens (C) Mosses (D) Ferns

Mathematics

91. If $\frac{37}{13}=2+\cfrac{1}{x+\cfrac{1}{y+\cfrac{1}{z}}}$, Where x, y, z are integers, then the value of x + y + z is
(A) 6 (B) 8 (C) 7 (D) – 2

92. If $\text{Sin}x=\text{Cos}^2x$, then the value of $\text{Cos}^2x\left(1+\text{Cos}^2x\right)$ will be
(A) 1 (B) 0 (C) 2 (D) – 1

93. If α and β are roots of $a\left(x^2-1\right)+2bx=0$ and the quadratic equation whose roots are $2\alpha-\frac{1}{\beta}$ and $2\beta-\frac{1}{\alpha}$ is $px^2+qx+r=0$ then $p+q+r$ is equal to
(A) 2b (B) $6a-8b$ (C) $6b-8a$ (D) 0

94. If S_n denotes the sum of first n terms of an A-P, then the value of $\left[\left(S_{3n}-S_{3n-1}\right)-\left(S_{2n}-S_{2n-1}\right)\right]$ will be
(A) S_n-S_{n-1} (B) nd (C) 0 (D) $S_{3n}-S_n$

95. Two dice are thrown at the same time and product of numbers appearing on them is noted. Probability that the product is less than 9 will be
(A) $\frac{1}{36}$ (B) $\frac{4}{9}$ (C) $\frac{17}{36}$ (D) $\frac{2}{9}$

96. If Arithmetic mean of numbers $x_1,x_2,x_3,x_4,.....x_n$ is $\bar{X}$ than Arithmetic mean of numbers $ax_1+b,ax_2+b,ax_3+b,---,ax_n+b$ where a and b are constants, will be
(A) $\bar{X}$ (B) $na\bar{x}+nb$ (C) $a\bar{x}$ (D) $a\bar{x}+b$

97. The average score of boys in class X in an exam is 71 and that of the girls in that class is 73. If the average score of class X in that exam is 71.8 find the ratio of number of boys to number of girls in that class.
(A) 1 : 2 (B) 2 : 1 (C) 2 : 3 (D) 3 : 2

98. The altitude of an equilateral triangle is p*cm*. The area of this triangle is
(A) p^2cm^2 (B) $\frac{\sqrt{3}}{2}p^2cm^2$ (C) $\frac{p^2}{\sqrt{3}}cm^2$ (D) $\frac{\sqrt{3}}{4}p^2cm^2$

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99. The sum of all the two digital natural numbers which are divisible by 7 is
(A) 743 (B) 700 (C) 728 (D) 735

100. The difference between two numbers is 1365. When the larger number is divided by the smaller number, the quotient is 6 and remainder is 15. Find the smaller number
(A) 240 (B) 270 (C) 295 (D) 300

101. If 75% of a number is added to 75, then the result is number itself. The number is
(A) 50 (B) 60 (C) 300 (D) 400

102. Find the product of
$\sqrt[3]{3}, \sqrt[4]{3}, \sqrt[12]{243}$
(A) $\sqrt{3}$ (B) 3 (C) $\sqrt[12]{3}$ (D) $\sqrt[4]{3}$

103. The sum of the ages of 5 children born at the intervals of 3 years each is 50 years. What is the age of youngest child?
(A) 4 years (B) 8 years (C) 10 years (D) 12 years

104. Which of the following trains is the fastest?
(A) 25 m/sec (B) 1500 m/min (C) 90 km/sec (D) 100 km/sec

105. If $y = 5$, then what is the value of $10y\sqrt{y^3 - y^2}$?
(A) $50\sqrt{2}$ (B) 100 (C) $200\sqrt{5}$ (D) 500

106. The mean of $1^2, 2^2, 3^2, 4^2, 5^2, 6^2, 7^2$, is
(A) 10 (B) 20 (C) 30 (D) 40

107. Simplify
$3\sqrt{2} + \sqrt[4]{64} + \sqrt[4]{2500} + \sqrt[6]{8}$
(A) $11\sqrt{2}$ (B) $11\sqrt[3]{2}$ (C) $\sqrt[3]{2}$ (D) $11\sqrt{4}$

108. AD is bisector of $\angle A$ of ΔABC, which meets side BC at D. If BC = K cm, CA = ℓ cm, and AB = m cm, then the length of DC (in cm) is
(A) $\frac{K\ell}{m+\ell}$ (B) $\frac{K(m+\ell)}{\ell}$ (C) $\frac{Km}{m+\ell}$ (D) $\frac{K(m+\ell)}{m}$

109. If area of a sector of circle bounded by an arc of length 5π cm is equal to 20π cm^2 then its radius (in cm) is
(A) 12 cm (B) 16 cm (C) 8 cm (D) 10 cm

110. In right angled triangle $\Delta ABC, \angle B = 90^\circ, AB = 5cm, BC = 12cm$, then the area of in circle of this triangle ABC will be
(A) $4\pi cm^2$ (B) $2\pi cm^2$ (C) $13\pi cm^2$ (D) $17\pi cm^2$

History

111. Why was the Vietnam was called the first television war?
(A) Brought home stories from soldiers
(B) Led to increase sale of television sets
(C) Battle scenes were shown on daily news
(D) Televisison was invented.

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112. Who said these lines "whether I am a Hindu, a Mohammedan, a Parsi, a Christian or of any other creed, I am above all an Indian. Our country is India. Our nationality is Indian."
(A) Dada Bhai Naoroji (B) Surenderanath Banerjee
(C) Gopal Krishan Gokhale (D) Pherozeshah Mehta

113. Under which rules the sculpture of four lions was built on Sarnath's Pillar?
(A) Samudragupta (B) Ashoka
(C) Chandragupta (D) Harsharvardhana

114. Who was the first Viceroy of India?
(A) Lord Clive (B) Warren Hastings
(C) Lord William Bentinck (D) Lord Canning

115. To whom, Guru Gobind Singh Ji had written Zafarnama?
(A) Babur (B) Aurangzeb
(C) Humayun (D) Jahangir

116. During India's freedom struggle which one of the following led to the first 'All India Hartal'?
(A) Protest against Jallianwala Bagh Massacre
(B) Protest against Row Latt Act
(C) Trial of Mahatm Gandhi
(D) Arrival of Simon Commission

117. In 1878 the Vernacular Press Act was modelled on the
(A) French Press Laws (B) British Press Laws
(C) Irish Press Laws (D) Scottish Press Laws

118. Who was the famous Sultan of Lodhi Dynasty?
(A) Sikander Lodhi (B) Ibrahim Lodhi
(C) Dilawar Khan Lodhi (D) Daulat Khan Lodhi

119. When was Nazi Party founded?
(A) 1917 (B) 1918
(C) 1920 (D) 1909

120. Who had started Masand system?
(A) Guru Har Rai Ji (B) Guru Angad Dev Ji
(C) Guru Nanak Dev Ji (D) Guru Ramdas Ji

121. "Who said these words, 'Tremble, therefore, tyrants of the world"?
(A) Robert Darnton (B) James Lackington
(C) Louise/Sebastien Mercier (D) Thomas Paine

Geography

122. Which among the following does not belong to the list of leading sugarcane producing states?
(A) Uttar Pradesh (B) Andhra Pradesh
(C) Madhya Pradesh (D) Maharashtra

123. In which union Territory maximum area is under forest?
(A) Dadra and Nagar Haveli (B) Andaman and Nicobar Islands
(C) Delhi (D) Puducherry

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124. Which agent causes the formation of V-shaped valley?
(A) Snow (B) Wind
(C) Birds and animals (D) Water

125. What type of soil is also known as 'Tea soil'.
(A) Mountain soil (B) Marshy soil
(C) Desert soil (D) Saline and alkaline soil

126. Which of the following state has the highest density of roads?
(A) Goa (B) Jammu and Kashmir
(C) Kerala (D) Haryana

127. What is the extent of 'Tropical Heat Zone'?
(A) $23\frac{1}{2}^{\circ}$ North to $23\frac{1}{2}^{\circ}$ South (B) $23\frac{1}{2}^{\circ}$ North to $66\frac{1}{2}^{\circ}$ North
(C) $23\frac{1}{2}^{\circ}$ South to $66\frac{1}{2}^{\circ}$ South (D) $66\frac{1}{2}^{\circ}$ North to $66\frac{1}{2}^{\circ}$ South

128. For which of the following industry, 'Dhariwal' is famous as an important centre/place.
(A) Cotton Textile Industry (B) Woolen Industry
(C) jute industry (D) Silk Industry

129. Which of the major port of India is located in Sundarbans Delta?
(A) Kandla (B) mumbai
(C) Chennai (D) Haldia

130. Which of the following place is influenced by retreating or eastern monsoon?
(A) Amritsar (B) Chennai
(C) Mumbai (D) Shimla

131. Which of the following states are the major products of copper?
(A) Rajasthan and Madhya Pradesh (B) Odisha and Rajasthan
(C) Maharashtra and Gujarat (D) Madhya Pradesh and Gujarat

132. Hyderabad is the capital of which state?
(A) Telangana (B) Andhra Pradesh
(C) Karnatka (D) Tamil Nadu

Civics

133. Who give the idea to establish the 'Lok Adalat'?
(A) Sh. P.N. Bhagwati (B) Dr. B.R. Ambedkar
(C) Sh. Lal bahadur Shastri (D) Dr. T.N. Sheshan

134. Which words were included in preamble in of Indian constitution by 42nd amendment in 1976 -
(A) Directive Principles (B) Democratic and Republic
(C) We the people of India (D) Socialist, secular and unity of country

135. Which fundamental right is considered as the 'Pillar of Democracy'.
(A) Right to equality (B) Right to religious freedom
(C) Right to freedom (D) Right to constitutional remedies

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136. How many members does Punjab send for Lok Sabha and Rajya Sabha -
(A) Lok Sabha -13 Rajya Sabha – 7
(B) Lok Sabha - 7 Rajya Sabha – 13
(C) Lok Sabha - 117 Rajya Sabha – 245
(D) Lok Sabha - 545 Rajya Sabha – 12

137. Which rights are not given to foreigners?
(A) Economic Rights (B) Social Rights
(C) Political Rights (D) Civil Rights

138. Who is the chairman of the Rajya Sabha?
(A) Speaker (B) Vice-President
(C) President (D) Prime-minister

139. Who can transfer a Governor from one state to another?
(A) Prime-minister (B) Parliament
(C) President (D) Supreme Court

140. Which Indian Leader gave the idea of two nations (partition) before independence?
(A) Mahatma Gandhi (B) Jawahar Lal Nehru
(C) Liakat Ali (D) Mohd. Ali Jinah

141. How many countries are the member of U.N.O. (United Nations) at present?
(A) 193 (B) 150
(C) 51 (D) 182

142. India opposes strongly –
(A) United Nations (B) World peace
(C) Racialism and Apartheid policy (D) Common Wealth of Nations

Economics

143. Which equation is true?
(A) Real Wages = $\frac{\text{Price Index}}{\text{Money wages}} \times 100$ (B) Real Wages = $\frac{\text{Money wages}}{\text{Price Index}} \times 100$
(C) Real Wages = $\frac{\text{Money wages} \times \text{Price Index}}{100}$
(D) Real Wages = $\frac{\text{Money wages}}{\text{Price Index}}$

144. Economic activities are not related to: -
(A) Production, consumption and work of House wife.
(B) Production, consumption and exchange.
(C) Production, exchange and distribution.
(D) Consumption, exchange and distribution.

145. Socialist Economy has features: -
(a) Govt. Control (b) Collective ownership
(c) Competition (d) Freedom of market forces
(e) Social welfare
(A) a, b and c (B) a, b and d
(C) a, b, and e (D) b, c and d

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146. On the basis of ownership types of Economics are: -
(A) Developed, mixed & capitalistic. (B) Capitalistic, developed and socialistic
(C) Mixed, developed and under developed. (D) Socialistic, capitalistic and mixed.

147. In India which one is not indicator of level of economic development: -
(A) Per capita income (B) Expectation of life
(C) Population (D) Literacy rate

148. How many banks were nationalized by Govt. of India in 1980?
(A) 12 (B) 14 (C) 7 (D) 8

149. Which of the following organisations looks after the credit needs of Agriculture and Rural Development in India?
(A) FCI (B) IDBI (C) NABARD (D) ICAR

150. When there is investment made in the form of education, training and medical care the population becomes: -
(A) Working capital (B) Human capital
(C) Fixed capital (D) Capital growth

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