FIITJEE

CHANDIGARH NTSE STAGE – I (2019-20)

<u>SCHOLASTIC APTITUDE TEST – 2019</u>

ROLL NUMBER: ☐☐☐☐☐☐☐☐☐☐☐☐

Time: 120 Minutes   **Maximum Marks: 100**

Please read the instructions carefully.

Scholastic Aptitude Test

Instructions to the Candidates

Read the following instructions carefully before you answer the question:

1. Answer are to be given on a SEPARATE 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 questions 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 the 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.

Please turn over the page and start your work.

CHANDIGARH STAGE 1– 2019-20
Scholastic Aptitude Test

1. Slavery was finally abolished in French colonies in _____.
   (A) 1848
   (B) 1815
   (C) 1804
   (D) 1884

2. Put the following events in sequence.
   (i) Return of Lenin
   (ii) October Revolution
   (iii) Russian peace with Germany
   (iv) February Revolution
   (v) Centralised Planning
   (A) i, iii, iv, v, ii
   (B) iv, i, ii, iii, v
   (C) iv, ii, i, iii, v
   (D) ii, v, i, iii, v

3. Name the minister of propaganda under the Hitler Rule.
   (A) Joseph Goebbels
   (B) Hindenburg
   (C) Hjalmar Schacht
   (D) Ernest Heimer

4. Name the axis powers in second world war
   (A) Germany, Italy, Japan
   (B) Germany, Austria, Prussia
   (C) Germany, Austria, Russia
   (D) Germany, Japan, Russia

5. Consider the following Indian leaders.
   i Motilal Nehru
   ii Dada Bhai Naoroji
   iii Raja Ram Mohan Roy
   iv Mahatma Gandhi
   The correct Chronological order in which they appeared on national scene is
   (A) i, ii, iii, iv
   (B) iv, iii, ii, i
   (C) iii, ii, i, iv
   (D) ii, i, iii, iv

6. Who founded SATYASHODHAK SAMAJ.
   (A) Jyotiba Phule
   (B) Raja Ram Mohan Roy
   (C) Swami Vivekanand
   (D) Swami Dayanand

7. Which of the following picture was on cover page of music book by E.T. Paul
   (A) Dawn of century
   (B) Dawn of industrial age
   (C) Dawn of Agricultural age
   (D) Dawn of 21st Century

8. Choose the correct statements:
   i. The Zollverein was formed in 1834
   ii. It abolished tariff barriers.
   iii. It reduced the number of currencies from thirty to one
   iv. It was initiative of prussia and joined by all German states
   (A) i, ii, iii, iv
   (B) ii and iii
   (C) i, ii and iv
   (D) ii, iii and iv

9. The people gathered in Jallianwala Bagh to protest against the arrest of two leaders They were_____.
   (A) Bhagat Singh and Dr. Satyapal
   (B) Bhagat Singh and Rajguru
   (C) Dr. Saifuddin Kitchlu and Mahatma Gandhi
   (D) Dr. Saifuddin Kitchlu and Dr. Satyapal

10. The national assembly of France voted in April 1792 to declare war against _____.
    (A) Germany and Austria
    (B) Germany and England
    (C) Prussia and England
    (D) Prussia and Austria

11. Out of 250 members of Rajya Sabha, how many members are nominated by president.
    (A) 11
    (B) 10
    (C) 14
    (D) 12

12. Which article in Indian Constitution stipulates that there shall be vice- President of India
    (A) Article 63
    (B) Article 65
   (C) Article 66
    (D) Article 62

13. Point out the difference between the local government in India before and after the constitutional amendment in 1992.
   i.   It became mandatory to hold regular elections to the local government bodies
   ii. One third positions reserved for women
   iii. Elected officials exercise supreme
   (A) Only i   (B) i and ii
   (C) i, ii and iii   (D) ii and iii

14. When did the civil rights movement take place in USA
   (A) 1953-1958   (B) 1954-1968
   (C) 1960-1970   (D) 1946-1978

15. When was Bhartiya Janta Party formed?
   (A) 10th April, 1975   (B) 6th April, 1970
   (C) 6th April, 1980   (D) 10th April, 1985

16. In the context of democracies, what is successfully done by democracies?
   (A) Eliminated conflicts among people
   (B) Eliminated economic inequalities among people
   (C) Eliminated differences of opinion about how marginalized actions are to be treated
   (D) Rejected the ideal of political inequality

17. Who passed "Legal Frame work Order 2002"?
   (A) Zanu   (B) Robert Mugabe
   (C) General Musharraf   (D) Allende

18. Select the right combination of subjects under union list.
   (A) Defence, Atomic energy, Post and telegraphs, war and peace
   (B) Railways, Land, Trade, Police
   (C) Education, Agricultural land, Trade, Defence
   (D) Cyber laws, Adoption, Trade, Forests

19. Which one of the following countries was the first one to grant Universal Suffrage?
   (A) Russia   (B) Germany
   (C) New Zealand   (D) The Netherland

20. Which of the following is working capital?
   (A) Electricity bill   (B) Tube well
   (C) Tractor   (D) Machines

21. Coins in India are minted by
   (A) Ministry of Finance, Government of India
   (B) Reserve Bank of India
   (C) State Bank of India
   (D) Central Bank of India

22. What should be includced in national income by expenditure method
   i.   Self-produced final product
   ii. Expenditure on second hand goods
   iii. Expenditure on shares
   iv. Expenditure on intermediate goods
   (A) ii, iii, iv   (B) i and ii
   (C) i only   (D) iii and iv

23. What is the definition of overweight?
   (A) BMI > 25 kg/m^2 (B) BMI = 25 kg/m^2
   (C) BMI = 25-29.9 kg/m^2 (D) BMI = 25-30 kg/m^2

24. Name one of the following Agency that develops standards for goods and services.
   (A) COPRA   (B) National Consumer forum
   (C) Consumer protection council   (D) Bureau of Indian Standards

25. National Food for work programme was Launched in_____.
   (A) 2003   (B) 2001
   (C) 2004   (D) 2005

26. Which of the following countries has poor natural resources but rich human resources
   (A) India   (B) Nepal
   (C) Japan   (D) Sri Lanka

27. What is the Gross National Product?
   (A) The total value of Goods and services manufactured in the country
   (B) The total value of all the transactions in the country
   (C) Reduction in the total value of goods and services produced in the country
   (D) The total worth of goods and services generated in the country and net factor income from abroad.

28. Which one of the following is an incorrect fact regarding south India.
   (A) Diurnal range of temperature is less   (B) Annual range of temperature is less
   (C) Temperatures are high throughout the year.   (D) Extreme climatic conditions are found here.

29. Read the two statements A and B and choose the best answer.
   A. Assertion: Petrochemical Industry is a fast-growing Industry.
   B. Reason: Synthetic rubber, plastics, insecticides etc are the products of petro chemical industry
   (A) A and B both are correct and B explains A
   (B) A and B are both correct but B does not explain A
   (C) A is correct but B is incorrect
   (D) A and B are both incorrect

30. The process of " Retting" is associated with which of the following?
   (A) Tea   (B) Coffee
   (C) Jute   (D) Rubber

31. The "Golden Quadrilateral" which connects Delhi-Mumbai-Chennai-and Kolkata passes through....
   (A) AMRITSAR-AHMEDABAD-PUNE-PATNA
   (B) JAIPUR-PORBANDER-HYDERABAD-VARANASI
   (C) VADODARA-PUNE-VISHAKHAPATNAM-VARANASI
   (D) NAGPUR-BHOPAL-SURAT-AMRITSAR

32. The Narmada river in the peninsular plateau flows westward with a remarkably straight channel. It is because
   _____.
   (A) Slope gradient in this part controls the river channel pattern
   (B) River carries huge amount of water which has created straight channel course
   (C) River forms the boundary between central highlands and the Deccan Plateau
   (D) River flows through the trough of a rift valley inclined westward

33. If it is 12 noon in a city located on 90° W longitude, what would be time in a city located on 105°W longitude
   (A) 13:00   (B) 12:30
   (C) 11:30   (D) 11:00

34. Iron ore from kudermukh is most likely to be exported through
   (A) Goa   (B) Kochi
   (C) Mangalore   (D) Ennore

35. Marble is a type of _____rock.
   (A) Sedimentary   (B) Metamorphic
   (C) Basalt   (D) Igneous

36. Match the following:

I	Iron	a	Digboi
II	Coal	b	Singhbhum
III	Manganese	c	Balaghat
IV	Oil	d	Raniganj

   (A) i-b, ii-d, iii-a, iv-c   (B) i-b, ii-d, iii-c, iv-a
   (C) i-d, ii-b, iii-a, iv-c   (D) i-d, ii-b, iii-c, iv-a

37. Which of the following is found on the foothills and river valley placer deposits:
   (A) lead   (B) gypsum
   (C) bauxite   (D) gold

38. Choose the false statement among the following statements:
   (A) The southwest monsoon is a continuation of the southeast trade wind, deflected towards the Indian
        subcontinent after crossing the equator.
   (B) In winter, India is under the influence of North west monsoon due to westerly jet stream
   (C) The southwest monsoon sets in over the Kerala coast by 1st june.
   (D) The shift in the position of the ITCZ is related to the phenomena of the withdrawal of the westerly jet stream
        from its position over the north Indian plain.

39. Aus, Aman and Boro, grown thrice in a year are types of _____crops.
(A) Maize
(B) Rice
(C) Millets
(D) Wheat

40. Which of the following is the type of plate boundary of Indian plate along Himalayan mountains.
(A) Ocean-Continent Convergence
(B) Divergent boundary
(C) Transform boundary
(D) Continent-continent convergence

BIOLOGY

41. The process of formation of seed without the act of fertilization is known as:
(A) Parthenogenesis
(B) Sporulation
(C) Apomixis
(D) Vegetative reproduction

42. If the tip of sugarcane plant is removed from the filed, even then it keeps on growing in length. It is due to the presence of:
(A) Cambium
(B) Apical Meristem
(C) Lateral Meristem
(D) Intercalary Meristem

43. Which among the following has specialized tissue for conduction of water:
(i) Thallophyta
(ii) Bryophyta
(iii) Pteridophyta
(iv) Gymnosperms
(A) (i) and (ii)
(B) (ii) and (iii)
(C) (iii) and (iv)
(D) (i) and (iv)

44. If pepsin is lacking in gastric juice then which of the following event in stomach will be affected:
(A) Digestion of starch into sugars
(B) Digestion of fats into glycerol and fatty acids
(C) Digestion of Nucleic acids
(D) Digestion of proteins into peptides

45. Colorblindness is more common in males than in females due to:
(A) Dominant gene of such trait lies on Y chromosomes
(B) Dominant gene of such trait lies on X chromosome
(C) Recessive gene lies on X chromosome
(D) Recessive gene lies on Y chromosome

46. Three cylinders each closed by a membrane permeable to water and containing a different fluid are placed in same solution. After adjusting to solution the fluid rises in one of the cylinder, remains the same in another and falls in the third. What is the concentration of the solution in which cylinders have been placed:
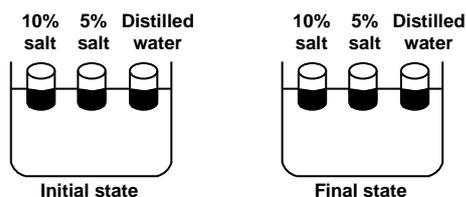

(A) 0% salt solution
(B) 2.5% salt solution
(C) 5% salt solution
(D) 10% salt solution

47. Mitochondria and chloroplast are:
(i) Semiautonomous organelles
(ii) Formed by division of pre existing organelles and the contain DNA but lack protein synthesizing machinery
Which one of the following option is correct:
(A) Both (i) and (ii) are correct
(B) (ii) is true, (i) is false
(C) (i) is true but (ii) is false
(D) Both (i) and (ii) are false

48. Climbers grow towards and around a support is an example of:
(A) Hydrotropism
(B) Geotropism
(C) Haptotropism
(D) Phototropism

49. Which of the following statement about transmission of nerve impulse is incorrect:
(A) Nerve impulse travels from dendritic end towards axonal end
(B) At the dendritic end electrical impulses bring about the release of some chemicals which generate an electrical impulse at the axonal end of another neuron
(C) The chemicals released from axonal end of one neuron cross the synapse and generate a similar impulse in a dendrite of another neuron
(D) A neuron transmits electrical impulses not only to another neuron but also to muscle and gland cell

50. Which of the following is an example of homologous organs?
(A) Wings of a bat and a butterfly
(B) Wings of a bird a bat
(C) Wings of pigeon and a butterfly
(D) Forelimbs of cow and lizard

51. As we travel along the food chain, the concentration of DDT
(A) Increases
(B) Remains constant
(C) Decreases
(D) Fluctuate randomly

52. Which among the following statements are true for unisexual flowers?
(i) They possess both stamens and carpel
(ii) They possess either stamen or carpel
(iii) They exhibit cross pollination
(iv) Unisexual flowers possessing only stamens cannot produce fruits
(A) (i) and (iv)
(B) (ii), (iii) and (iv)
(C) (iii) and (iv)
(D) (i), (iii) and (iv)

53. Lack of oxygen in muscles often leads to cramps among cricketers. This is due to:
(A) Conversion of pyruvate to lactic acid
(B) Conversion of pyruvate to glucose
(C) Non-conversion of glucose to pyruvate
(D) Conversion of pyruvate to ethanol

54. Choose the correct path of urine in our body:
(A) Kidney $\rightarrow$ Ureter $\rightarrow$ Urinary bladder $\rightarrow$ Urethra
(B) Kidney $\rightarrow$ Ureter $\rightarrow$ Urethra $\rightarrow$ Urinary bladder
(C) Kidney $\rightarrow$ Urinary bladder $\rightarrow$ Urethra $\rightarrow$ Ureter
(D) Urinary bladder $\rightarrow$ Kidney $\rightarrow$ Ureter $\rightarrow$ Urethra

MATHEMATICS

55. The area of the Blades of the magnetic compass as shown in figure will be:
(Take $\sqrt{11}$ = 3.32)

(A) 9 cm^2
(B) 5.58 cm^2
(C) 11 cm^2
(D) 4.98 cm^2

56. By selling 12 oranges for a rupee, a man losses 20%. How many for a rupee should he sell to gain 20%:
(A) Rs. 15
(B) Rs.10
(C) Rs. 8
(D) Rs. 5

57. In an Arithmetic Progression, the sum of first 'n' terms is $\dfrac{3n^2}{2} + \dfrac{5n}{2}$ Then the 25th term will be:
(A) 4
(B) 3
(C) -4
(D) 3.5

58. Probability that a leap year selected at random will contain 53 Sundays is:
(A) 2/7
(B) $\dfrac{53}{365}$
(C) 1/7
(D) $\dfrac{7}{365}$

59. If A + B = 90° then $\dfrac{\tan A \tan B + \tan A \cot B}{\sin A \sec B} - \dfrac{\sin^2 B}{\cos^2 A}$ is equal to:
(A) cot^{2}A
(B) cot^{2}B
(C) -tan^{2}A
(D) -cot^{2}A

60. $\triangle$ABC is an Equilateral triangle. We have BD = EG = DF = DE = EC; then the ratio of the area of the shaded portion to the area of $\triangle$ABC is :
(A) $\dfrac{4}{11}$
(B) $\dfrac{7}{9}$
(C) $\dfrac{5}{12}$
(D) $\dfrac{6}{7}$
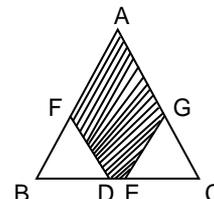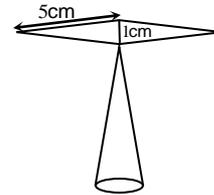
61. A solid consists of a rectangular cylinder with an exact fitting right circular cone placed on the top. Height of the cone is 'h'. If total volume of the solid is three times the volume of the cone, then the height of the circular cylinder is :

(A) $\dfrac{2h}{9}$

(B) $\dfrac{2h}{3}$

(C) $\dfrac{3h}{2}$

(D) $\dfrac{4h}{3}$

62. An aeroplane is flying horizontally at a height of 3150m above horizontal plane ground. At a particular instant, it passes another plane Vertically below it. At this instant, the angles of elevation of the planes from a point on the ground are 30° and 60°. Hence the distance between the two planes at that instant is:
(A) 1050 m
(B) 2100 m
(C) 4200 m
(D) 5250 m

63. The compound interest is Rs. 6.40 more than the simple interest. If a sum is lent for 2 years at 8% compound interest. The sum will be:
(A) Rs. 1800
(B) Rs. 10,000
(C) Rs. 800
(D) Rs. 1000

64. If a, b, c, d and e are in continuous proportion, then a/e is equal to:

(A) $\dfrac{a^3}{b^3}$

(B) $\dfrac{a^4}{b^4}$

(C) $\dfrac{b^3}{a^3}$

(D) $\dfrac{b^4}{a^4}$

65. The line segment joining the points (3, –4) and (1, 2) is trisected at the points P & Q. If the coordinates of P & Q are (p, –2) & $\dfrac{5}{3}$,q respectively. Find the value of p & q.

(A) p = 0. q = $\dfrac{7}{3}$

(B) p = $\dfrac{7}{3}$, q = 0

(C) p = 7, q = 3

(D) p = 3, q = 7

66. What will be the area of largest triangle that can be inscribed in the semicircle of radius $\dfrac{'r'}{16}$

(A) $16r^3$

(B) $\dfrac{r^2}{256}$

(C) $\dfrac{r^2}{64}$

(D) $\dfrac{r^2}{32}$

67. If x + y + z = 0 & x ≠ 0, y ≠ 0, z ≠ 0 then the value of $\dfrac{x^2}{yz}+\dfrac{y^2}{xz}+\dfrac{z^2}{xy}$ is?

(A) 0
(B) 1
(C) 2
(D) 3

68. If $x^2 + y^2 + z^2 = r^2$ where, x = r cos a cos b, y = r rocs a sin b then z has one of the following values.
(A) r cos a
(B) r tan a cos b
(C) r tan a tan b
(D) r sin a

69. If α & β are the roots of the equation $3x^2 –5x + 3 = 0$ then the quadratic equation whose roots are $α^2β$ and $αβ^2$ is
(A) $3x^2 – 5x -3 = 0$
(B) $3x^2 –8x + 5 = 0$
(C) $3x^2 – 8x + 3 = 0$
(D) $3x^2 –5x –3 = 0$

70. The sum of length, breadth and height of cuboid is 19m, its diagonal is $5\sqrt{5}$ m long. Its surface area is
(A) $286m^2$
(B) $236 m^2$
(C) $226m^2$
(D) $256m^2$

71. A conical vessel of radius 6m and height 8 m is completely filled with water. A sphere is lowered into the water and its size is such that when it touches the side, it is just completely immersed. what fraction of water over flowed?
(A) 5/8
(B) 3/4
(C) 3/8
(D) 5/4

72. If a, b, c are the sides of right triangle where C is the hypotenuse, then radius 'r' of the circle which touches the sides of the triangle is

(A) $\dfrac{a+b+c}{2}$

(B) $\dfrac{a+c-b}{2}$

(C) $\dfrac{a+b-c}{2}$

(D) $\dfrac{b+c-a}{2}$

73. $\triangle ABC$ is right angled at B. AD, CE are the two medians drawn from A and C respectively. If AD = $\dfrac{3\sqrt{5}}{2}$, CE = $2\sqrt{5}$.

The value of AC will be

(A) 13

(B) 5

(C) $12\sqrt{5}$

(D) 12

74. If two circles as such that the centre of one lies on the circumference of the other then the ratio of common chord of the two circles to the radius of any one of the circles is:

(A) 2 : 1

(B) $\sqrt{3}:1$

(C) $\sqrt{5}:1$

(D) 4:1

CHEMISTRY

75. Which of the following is most malleable metal?

(A) Na

(B) Si

(C) Au

(D) Pb

76. When carbon dioxide is passed through lime water then:

(A) Calcium hydroxide is formed

(B) Colour of lime water disappears

(C) White precipitates of calacium carbonate is formed

(D) White precipitates of calacium oxide is formed

77. Arrange the following elements in the order of their decreasing metallic character:

(A) Cl > Si > Al > Mg > Na

(B) Na . Mg > Al > Si > Cl

(C) Na > Al > Mg > Cl > Si

(D) Al > Na > Si > Ca > Mg

78. Meena visited a natural gas compressing unit and found that the gas can be liquefied under specific conditions of temperature and pressure while sharing her experience with friends she got confused. Help her to identify the correct set of conditions.

(A) Low temperature, Low pressure

(B) High temperature, Low pressure

(C) Low temperature, High pressure

(D) High temperature, High pressure

79. The scattering of beam of light is shown by…………

(A) Mud water

(B) Milk

(C) copper sulphate solution

(D) NaCl solution

80. What is the formula of acetone:

(A) CH_3CH_2COOH

(B) CH_3COCH_3

(C) CH_3CH_2CHO

(D) $CH_3CH_2COCH_3$

81. Match the correct automatic radius with the element

Element		Atomic radius (pm)
(a) Be		**(i)** 75
(b) C		**(ii)** 88
(c) O		**(iii)** 111
(d) B		**(iv)** 77
(e) N		**(v)** 74

(A) (a) – (ii), (b) – (iii), (c) – (v), (d) – (iv), (e) – (i)

(B) (a) – (iii), (b) – (iv), (c) – (v), (d) – (ii), (e) – (i)

(C) (a) – (ii), (b) – (iv), (c) – (iii), (d) – (i), (e) – (v)

(D) (a) – (v), (b) – (iii), (c) – (iv), (d) – (ii), (e) – (i)

82. 22 carat gold means
(A) 20 parts of pure gold alloyed with 2 parts of Cu or Ag
(B) 22 parts of pure gold alloyed with 2 parts of Cu or Zn
(C) 21 parts of pure gold alloyed with 1 parts of Cu or Ag
(D) 22 parts of pure gold alloyed with 2 parts of Cu or Ag

83. Anodising is a process of forming a thick oxide layer of......
(A) Zinc   (B) Aluminium
(C) Copper   (D) Tin

84. Which of the following element does not have allotrope
(A) P   (B) B
(C) Bi   (D) S

85. Which of the following combination about acids is incorrect
(A) Ethanoic acid   Vinger
(B) Citric acid   Orange
(C) Carbonic acid   Soft Drinks
(D) Lactic acid   Tea

86. Which is chemically most active non-metal.
(A) Br_2 (B) N_2
(C) O_2 (D) F_2

PHYSICS

87. A ball is released from the top of a 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) $\frac{8h}{9}$ m from the ground   (B) $\frac{7h}{9}$ m from the ground

(C) $\frac{h}{9}$ m from the ground   (D) $\frac{17h}{18}$ m from the ground

88. Two bodies have masses 2m and m. their kinetic energies are in the ratio 8:1. Their linear momentum are in the ratio of
(A) 1:1   (B) 2:1
(C) 4:1   (D) 8:1

89. Water is pouring down from a waterfall at the rate of 75 kg/s on the blades of a turbine. If the height of the fall is 100m, then power delivered to the turbine is nearly
(A) 95 kw   (B) 75 kw
(C) 100 kw   (D) 0 kw

90. A force-time graph for a linear motion is shown. The linear momentum changed between 0 and 8 second is
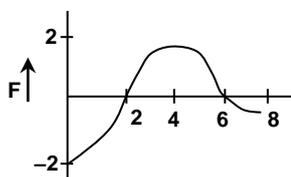
(A) -2π Ns   (B) Zero
(C) 4π Ns   (D) 6π Ns

91. The length of a given cylindrical wire is increased by 100%. Due to consequent decrease in diameter, the change in the resistance of the wire will be
(A) 200%   (B) 100%
(C) 50%   (D) 300%

92. In an experiment to find the focal length of a concave mirror, a graph is drawn between magnitude of u and v. The graph looks like

(A)

(B)

(C)

(D)
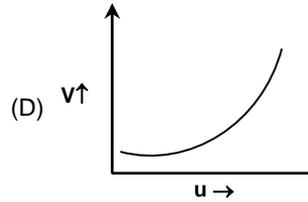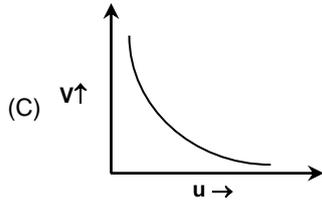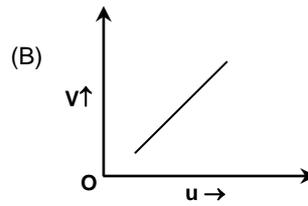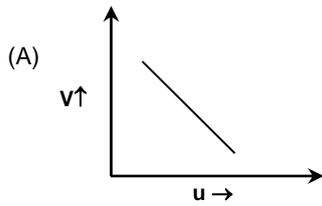
93. Two circular coils of diameter 10 cm and 20 cm has same number of turns. The ratio of magnetic field inductions produced at the centres of coils when connected in series is
(A) 1:2   (B) 3:2
(C) 2:!   (D) 2:3

94. Green light of wavelength 5460 is incident on an air-glass interface. If the refractive index of glass is 1.5, the wavelength of light in glass would be (given velocity of light in air c = 3 ×10^8 ms^{-1})
(A) 3460 Å   (B) 5460 Å
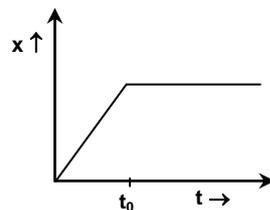(C) 4861 Å   (D) None of the above

**95.** What is the value of R in the circuit given below if the current passing through the battery is 0.25 A.
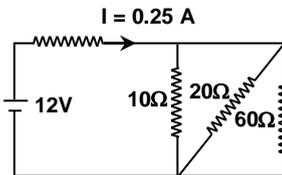
(A) 42 Ω   (B) 62 Ω
(C) 84 Ω   (D) None of these

96. Figure shows the displacement-time graph of a particle moving along X-axis.

(A) The particle is continuously going in positive x-direction
(B) The particle is at rest
(C) The velocity increases upto time 't_0' and then becomes constant
(D) The particle moves at a constant velocity upto time 't_0' and then stops

97. A block of mass m is at rest under the action of force F against a wall as shown in figure. Which of the following statement is incorrect?
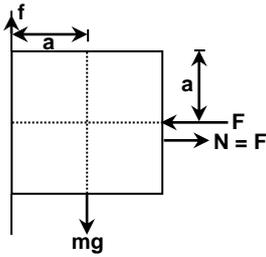
   (A) F = mg (where f is the frictional force)   (B) F = N (where N is the normal force)
   (C) F will not produce torque   (D) N will not produce torque

98. A hot and cold body are kept in vacuum separated from each other. Which of the following causes decrease in temperature of the hot body?
   (A) Radiation   (B) Convection
   (C) Conduction   (D) Temperature remains unchanged

99. A man is standing at the middle point between two cliffs. On clapping his hands, a series of echoes are heard at the interval of 1 Sec. If the speed of sound is 350 m/s, the distance between the two cliffs is
   (A) 175 m   (B) 350 m
   (C) 525 m   (D) 700 m

100. A rubber ball filled with water is having a small hole. This is used as the bob of a simple pendulum. Then, the period of such a pendulum
   (A) Decreases
   (B) First increases then decreases
   (C) First decreases then increases
   (D) Increases