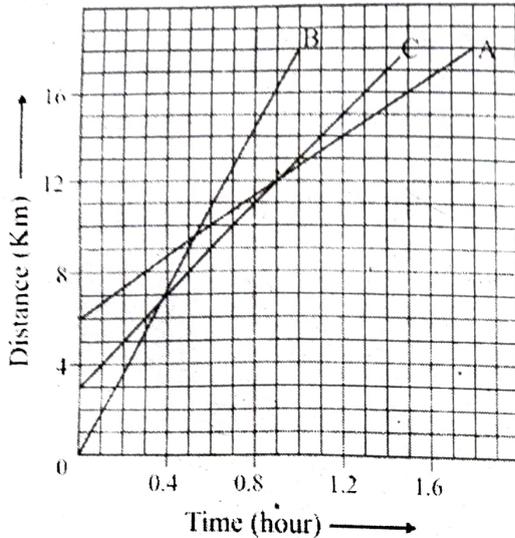
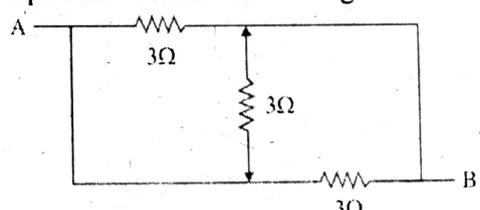


1. Figure shows the distance –time graph of three objects A, B and C. Study the graph and choose the correct answer :



- (a) 'A' is travelling fastest
 (b) 'B' is travelling fastest
 (c) 'C' is travelling fastest
 (d) All are travelling with the same speed
2. If momentum is increased by 100%, the percentage increase in kinetic energy is :
 (a) 100% (b) 200%
 (c) 300% (d) 400%
3. Newton deduced the inverse square law of gravitation :
 (a) by observing motion of an apple falling from a tree
 (b) by using Kepler's laws of planetary motion
 (c) by studying motion of different objects in the laboratory
 (d) by using data obtained from Cavendish experiment
4. The kinetic energy of a body becomes 4 times its initial value. The new linear momentum will be :
 (a) Same as initial value
 (b) Four times the initial value
 (c) twice the initial value
 (d) eight times the initial value
5. A boy of 50 Kg runs up a staircase of 45 steps in 9s. If the height of each step is 15cm, his power is (taking $g = 10\text{ms}^{-2}$)

- (a) 375 W (b) 500 W
 (c) 37.5 W (d) 3.75 W

6. A small wooden block is floating in a tub of water. The water is gradually heated. The volume of wooden block visible above the water level.
 (a) fluctuates (b) decreases
 (c) Increases (d) remains the same
7. The higher the frequency of vibration, the higher is the..... of the sound :
 (a) quality (b) pitch
 (c) loudness (d) intensity
8. A spherical mirror and a thin lens have each a focal length of -15 cm . The mirror and the lens are likely to be:
 (a) both concave
 (b) both convex
 (c) the mirror is concave and the lens is convex
 (d) the mirror is convex and the lens is concave
9. In which one of the following magnification can be -1 ?
 (a) plane mirror (b) convex mirror
 (c) concave mirror (d) concave lens
10. The human eye can focus objects at different distances by adjusting the focal length of the eye lens. This is due to :
 (a) Presbyopia (b) accommodation
 (c) near-sightedness (d) far-sightedness
11. Which one of the following is the equivalent resistance of the given circuit?

 (a) $1\ \Omega$ (b) $3\ \Omega$ (c) $6\ \Omega$ (d) $9\ \Omega$
12. Two conducting wires of the same material and equal lengths and equal diameters are first connected in series and parallel in a circuit across the same potential difference. The ratio of heat produced in series and

parallel combinations for 10 minutes would be :

- (a) 1 : 2 (b) 2 : 1 (c) 1 : 4 (d) 4 : 1

13. The phenomenon of electromagnetic induction is
 (a) the process of charging a body
 (b) the process of generating magnetic field due to a current passing through a coil
 (c) producing induced current in a coil due to relative motion between a magnet and the coil
 (d) the process of rotating a coil of an electric motor
14. Which one of the following materials is used for making solar cell?
 (a) Boron (b) Cadmium
 (c) Silicon (d) Uranium
15. On which of the following effects does electric fuse work:
 (a) Hall effect
 (b) chemical effect of electric current
 (c) magnetic effect of electric current
 (d) heating effect of electric current
16. During chlor-alkali process, which substance do we get at anode?
 (a) Cl_2 (b) H_2 (c) Na (d) O_2
17. Which of the following metals, produce hydrogen gas on reacting with very dilute HNO_3 ?
 (a) Mg (b) Zn (c) Fe (d) Na
18. An ant when bites us, it injects a substance 'X' which causes pain and irritation. The structural formula of substance 'X' is :
 (a) $H-C(=O)-H$ (b) $H-C(=O)-O-H$
 (c) $O=C(OH)-H$ (d) $H-C(=O)-OH$
19. Which one of the following has highest number of molecules?
 (a) 11 gram of CO_2 (b) 9 gram of N_2
 (c) 9 gram of O_2 (d) 2 gram of H_2

20. Which hydrocarbon does not undergo addition reaction?
 (a) C_3H_6 (b) C_5H_{10} (c) C_4H_8 (d) C_2H_6
21. The incorrect statement regarding evaporation is :
 (a) It is a surface phenomenon
 (b) It causes cooling
 (c) It is a bulk phenomenon
 (d) Rate of evaporation increases with the increase of temperature :
22. 2, 2-dimethyl propane is the isomer of which of the following alkane :
 (a) Butane (b) Pentane
 (c) Propane (d) All of the above
23. Which of the following oxide of nitrogen is most covalent in nature?
 (a) N_2O_4 (b) N_2O_5 (c) N_2O_3 (d) NO_2
24. Which of the following method is used to separate two miscible liquids from their mixture?
 (a) Crystallization
 (b) differential extraction
 (c) sublimation
 (d) fractional distillation
25. The poisonous alcohol is :
 (a) Propanol (b) methanol
 (c) Butanol (d) Ethanol
26. Which of the following is propanoic acid:
 (a) $H-C(=O)-C(=O)-C(=O)-OH$ (b) $H-C(=O)-C(=O)-C(=O)-OH$
 (c) $H-C(=O)-C(=O)-C(=O)-OH$ (d) $H-C(=O)-C(=O)-C(=O)-OH$
27. $2Pb(NO_3)_{2(s)} \xrightarrow{Heat} 2PbO_{(s)} + 4NO_{2(g)} + O_{2(g)}$
 The above reaction is:
 (a) Exothermic (b) Photochemical
 (c) Decomposition (d) displacement
28. Element X forms an oxide with the formula XO . What will be formula of the compound formed when this X reacts with chlorine?
 (a) X_2Cl (b) XCl_3 (c) XCl_2 (d) XCl

29. A common metal present in bronze and solder alloy is :
 (a) Copper (b) lead (c) tin (d) zinc
30. The nature of Al_2O_3 is:
 (a) acidic
 (b) basic
 (c) both acidic and basic
 (d) none of the above
31. Which one is not the correct direction of blood circulation?
 (a) Artery \rightarrow arteriole \rightarrow capillary network \rightarrow organ
 (b) Organ \rightarrow capillary network \rightarrow veinule \rightarrow vein
 (c) Pulmonary artery \rightarrow lung \rightarrow pulmonary vein \rightarrow heart
 (d) Pulmonary vein \rightarrow lung \rightarrow pulmonary artery \rightarrow heart
32. Fish circulatory system does not consist of:
 (a) single circulation
 (b) double circulation
 (c) mixing of oxygenated and deoxygenated blood
 (d) closed circulation
33. Vertebrate heart receives oxygenated blood from lungs through :
 (a) pulmonary artery (b) pulmonary vein
 (c) left atrium (d) right atrium
34. Which is not an asexual reproduction?
 (a) Fragmentation (b) budding
 (c) Regeneration (d) fertilization
35. Which of the following is not a simple tissue in plants :
 (a) Parenchyma (b) phloem
 (c) pollenchyma (d) sclerenchyma
36. A reflex arc does not involve :
 (a) motor neuron (b) Sensory neuron
 (c) Brain (d) relay neuron
37. A neuron can't have :
 (a) an axon (b) a dendrite
 (c) more than one dendrite
 (d) two nuclei
38. Brain in vertebrate is encased in:
 (a) Sternum (b) cranium
 (c) Palatine (d) None
39. Thinking part of brain is :
 (a) Medulla (b) Cerebellum
 (c) Cerebrum (d) Hypothalamus
40. Which one of the following is an example of connective tissue :
 (a) cardiac muscles (b) blood
 (c) striated muscles (d) None of these
41. Variations on which Natural Selection acts are :
 (a) Acquired (b) Hereditary
 (c) Environmental (d) Nutritional
42. Algae belong to :
 (a) Thallophyta (b) Bryophyta
 (c) Pteridophyta (d) None of the above
43. Which is a true fish?
 (a) Jelly fish (b) Cuttle fish
 (c) Silver fish (d) Tuna fish
44. Which one is not correct?
 (a) feathers, aves (b) hair, mammalia
 (c) gills; pisces
 (d) vertebral column, protochordates
45. Sea Horse (Hippocampus) belongs to :
 (a) Amphibian (b) pisces
 (c) aves (d) mammalia
46. Which are true coelomates?
 (a) Nematodes (b) platyhelminths
 (c) Sponges (d) annelids
47. Whale is an example of which group?
 (a) Pisces (b) amphibian
 (c) Reptiles (d) mammalia
48. Prokaryote cell lacks :
 (a) cell membrane
 (b) nuclear membrane
 (c) plasma membrane (d) cell wall
49. A single cell eukaryote organism is called:
 (a) Monera (b) Protista
 (c) Metaphyta (d) Metazoa
50. Blood pressure is measured with an instrument :
 (a) Potometer (b) sphygmomanometer
 (c) Lactometer (d) none of the above
51. What is the currency of Bangladesh?
 (a) Banga (b) Rupiah
 (c) Ringet (d) Taka

52. Who is the author of the novel, *The Last Train to Pakistan*
 (a) R.K. Narayan (b) Mulk Raj Anand
 (c) Khushwant Singh (d) Anita Desai
53. What does SIT stand for?
 (a) State Investigation Team
 (b) Special Intelligence Team
 (c) Special Investigation Tribunal
 (d) Special Investigation Team
54. Who is the Deputy Chairman of Planning Commission?
 (a) Montek Singh Ahluwalia
 (b) Dr. Manmohan Singh
 (c) Pranab Mukherji
 (d) Sam Pitroda
55. The Nobel Prize winner writer Gunter Grass belongs to :
 (a) Austria (b) Germany
 (c) Finland (d) Poland
56. Attari is the check post on :
 (a) India- Nepal border
 (b) India- Afghanistan border
 (c) India- Bhutan border
 (d) India- Pakistan border
57. The US astronauts landed on the moon is in:
 (a) 20 July 1969 (b) 1 January 1968
 (c) 5 November 1970 (d) 11 October 1961
58. Sanchi, a town famous for its stupas is in :
 (a) Gujarat (b) Rajasthan
 (c) Odisha (d) Madhya Pradesh
59. The Hundred Year's War during 1337-1453 was fought between :
 (a) England & Germany
 (b) Spain & France
 (c) England & France
 (d) Russia & Turkey
60. Leukemia stands for:
 (a) a skin disease (b) a chemical
 (c) blood cancer (d) a drink
61. Who was the leader of the Khilafat Movement?
 (a) Muhammad Ali Jinnah
 (b) Abul Kalam Azad
 (c) Muhammad Ali Johar
 (d) Ahmad Raza Khan
62. Wali, one of the earliest Urdu poets, was from :
 (a) Punjab (b) Lucknow
 (c) Deccan (d) Delhi
63. Babar established the Mughal empire after defeating :
 (a) Tughlaqs (b) Lodhis
 (c) Khiljis (d) Raja Jai Chand
64. Shah Waliullah is a ----- century Muslim intellectual :
 (a) 17th (b) 19th (c) 18th (d) 20th
65. Who did assist Shibli Numani in wiring *Sirat-al-Nabi*?
 (a) Ashraf Ali Thanawi
 (b) Sir Syed
 (c) Deputy Nazir Ahmad
 (d) Syed Sulaiman Nadwi
66. Who among the following is not a Mughal emperor?
 (a) Shah Alam (b) Humayun
 (c) Firoz Shah (d) Bahadur Shah
67. The Quran was revealed over a period of :
 (a) 10 Years (b) 23 Years
 (c) 40 Years (d) 15 Years
68. The battle of Hunain was fought in the days of :
 (a) Prophet Muhammad (pbuh)
 (b) Caliph Abu Bakr
 (c) Caliph Umar
 (d) Caliph Usman
69. The two hillocks close to Kabah are :
 (a) Safa & Marwah (b) Judi & Tur
 (c) Tur & Safa (d) Judi & Marwah
70. Who among these is not the Prophet Mohammad's (pbuh) companion?
 (a) Salahuddin Ayyubi
 (b) Zayad ibn Haritha
 (c) Umm Sulaim
 (d) Fazal ibn Abbas

71. What is the area of the quadrilateral ABCD where $AB = BC = 10\text{cm}$, $CD = 12\text{cm}$, $AD = 20\text{cm}$ and $AC = 16\text{cm}$?
 (a) 96cm^2 (b) 144cm^2
 (c) 160cm^2 (d) 190cm^2
72. Consider the following statements :
 A : Diagonals of a rhombus are equal.
 B : Diagonals of a rectangle bisect each other at right angles.
 What is your opinion?
 (a) Only A is true
 (b) Only B is true
 (c) Both A & B are true
 (d) Both A & B are false
73. There are 5 red and 8 green balls in a bag. A ball is taken out at random from the bag. What is the probability that the ball is red ?
 (a) $5/13$ (b) $5/8$
 (c) $1/2$ (d) 5
74. A die is thrown twice. What is the probability that 6 will not come up either time ?
 (a) $\frac{11}{36}$ (b) $\frac{12}{36}$ (c) $\frac{24}{36}$ (d) $\frac{25}{36}$
75. Class-mark of a class-interval is given by :
 (a) upper limit- lower limit
 (b) $\frac{1}{2}$ (upper limit- lower limit)
 (c) Upper limit + lower limit
 (d) $\frac{1}{2}$ (Upper limit+ lower limit)
76. Empirical relationship among the three measures of central tendency is :
 (a) $3\text{ Mean} = \text{Median} + 2\text{ Mode}$
 (b) $3\text{ Median} = \text{Mode} + 2\text{ Mean}$
 (c) $3\text{ Mode} = 2\text{ Mean} + \text{Median}$
 (d) $\text{Mode} = \frac{1}{2}(\text{Mean} + \text{Mode})$
77. What is the volume of a sphere whose surface area is 1386cm^2 ?
 (a) $179\frac{2}{3}\text{cm}^3$ (b) 539cm^3
 (c) $606\frac{3}{8}\text{cm}^3$ (d) 4851cm^3
78. How many coins, 3.5 cm in diameter and of the thickness 2mm, must be melted to form a cuboid of dimensions $11\text{cm} \times 10\text{cm} \times 7\text{cm}$?
 (a) 40 (b) 400 (c) 1600 (d) 4000
79. A chord of a circle is equal to the radius of the circle. What is the angle subtended by the chord at a point on the minor arc ?
 (a) 30° (b) 60° (c) 120° (d) 150°
80. Which of the following is not true?
 (a) the value of $\sin A$ can never exceed 1
 (b) the value of $\sec A$ is always greater than or equal to 1
 (c) $\sin(90-A) \sec(90-A) = \cot A$
 (d) $\sec^2 A + \tan^2 A = 1$ for $0^\circ \leq A \leq 90^\circ$
81. Which one of the following is true ?
 (a) $\sin(A+B) = \sin A + \sin B$
 (b) the value of $\sin \theta$ increases as θ increases in $(0^\circ, 90^\circ)$
 (c) the value of $\cos \theta$ increase as θ increases in $(0^\circ, 90^\circ)$
 (d) $\tan A$ is not defined for $A = 0$
82. If $\cot(A+B) = \frac{1}{\sqrt{3}}$, $\cot(A-B) = \sqrt{3}$ where $A > B$ and $0^\circ < A+B < 90^\circ$, then A and B are respectively :
 (a) $60^\circ, 30^\circ$ (b) $60^\circ, 15^\circ$
 (c) $45^\circ, 30^\circ$ (d) $45^\circ, 15^\circ$
83. A straight highway leads to the foot of a tower. A man standing at the top of the tower observes a car at an angle of depression of 30° , which is approaching the foot of the tower with a uniform speed. Ten seconds later, the angle of depression of the car is found to be 60° . What will be the time taken by the car to reach the foot of the tower from this time ?
 (a) cannot be found (b) 5seconds
 (c) $5\sqrt{3}$ seconds (d) 10 seconds
84. If the fifth and fifteenth terms of an AP are 20 and -20 respectively, which term of this AP is zero ?
 (a) 9^{th} (b) 10^{th}
 (c) 19^{th} (d) 20^{th}

85. How many three digits numbers are divisible by 6 ?

- (a) cannot be found (b) 149
 (c) 150 (d) 166

86. For what value of n are the n $\frac{th}{th}$ terms of two AP's : 51, 53, 55 and 1, 5, 9, 13, equal ?

- (a) 24 (b) 25 (c) 26 (d) 50

87. If the sum of first n terms of an AP is $4n - n^2$, what is its common difference?

- (a) -2 (b) -1
 (c) 1 (d) cannot be found

88. The roots of the quadratic equation

$$4x^2 - 4\sqrt{3}x + 3 = 0$$
 are:

- (a) $-\frac{\sqrt{3}}{2}, -\frac{\sqrt{3}}{2}$ (b) $-\frac{\sqrt{3}}{2}, +\frac{\sqrt{3}}{2}$

- (c) $\frac{\sqrt{3}}{2}, \frac{\sqrt{3}}{2}$ (d) $-\frac{\sqrt{3}}{4}, -\frac{\sqrt{3}}{4}$

89. AB is diameter of a circle. Point C on its circumference is such that $AC = \sqrt{13}$ cm, $BC = 6$ cm. The area of the circle is :

- (a) $3\sqrt{13}$ cm² (b) $19\frac{1}{4}$ cm²
 (c) $58\frac{1}{2}$ cm² (d) 77 cm²

90. For what values of a and b does the following pair of linear equations have an infinite number of solutions :

$$2x + 3y = 7$$

$$(a-b)x + (a+b)y = 3a + b - 2$$

- (a) 5, -1 (b) -5, 1
 (c) 5, 1 (d) -5, -1

91. If a transversal intersects two parallel lines, then which of the following is true?

- (a) each pair of corresponding angles is equal
 (b) each pair of alternate interior angle is supplementary
 (c) each pair of interior angle on the same side of the transversal is equal
 (d) all the above statements are true

92. A girl of height 120 cm is walking away from the base of a lamp post at a speed 1.5 m/s. If the lamp is 6 m above the ground,

what will be the length of her shadow after 4 seconds?

- (a) 1.2 m (b) 1.5 m
 (c) 1.6 m (d) 1.8 m

93. In ΔABC , $AB = \sqrt{3}$, $BC = 3$ and $AC = 6$, then which one is correct?

- (a) $\angle A = 90^\circ$
 (b) $\angle B = 90^\circ$
 (c) $\angle C = 90^\circ$
 (d) none of these

94. Consider the following statements :

A: A linear equation in two variables has infinitely many solutions

B: The graph of $x = a$ is a straight line parallel to x -axis

What is your opinion?

- (a) only A is true
 (b) only B is true
 (c) Both A and B are true
 (d) Both A and B are false

95. One woman and 2 men can finish some work in 4 days. Three women and two men can finish the same work in 2 days in how many days one woman alone can finish the work?

- (a) 6 (b) 8 (c) 12 (d) 16

96. For what value of k will the following pair of linear equation have no solution :

$$x + 3y = 1$$

$$(k-1)x + (2k-1)y = 2k + 1$$

- (a) 0 (b) 1 (c) 2 (d) 3

97. In which quadrant each of point (3-1), (-2, -2) and (-5, 2) lie?

- (a) second quadrant, third quadrant, fourth quadrant
 (b) third quadrant, fourth quadrant, second quadrant
 (c) fourth quadrant, third quadrant, second quadrant
 (d) fourth quadrant, second quadrant, third quadrant

98. What figure is obtained by joining the points (4, -1), (5, 3), (6, -1)?
 (a) equilateral triangle (b) isosceles triangle
 (c) right triangle (d) none of these
99. If 2 is one of the zeroes of the polynomial $x^3 - 4x^2 + 5x - 2$, then the other two zeros are:

- (a) 1, 1 (b) 1, -1 (c) -1, 2 (d) -1, -1

100. $\overline{0.001}$ is equal to

- (a) $\frac{1}{1000}$ (b) $\frac{1}{999}$ (c) $\frac{1}{990}$ (d) $\frac{1}{99}$

ANSWERS

1	b
2	c
3	b
4	c
5	a
6	b
7	b
8	a
9	c
10	b
11	a
12	c
13	c
14	c
15	d
16	a
17	a
18	d
19	d
20	d
21	c
22	b
23	b
24	d
25	b

26	c
27	c
28	c
29	c
30	c
31	d
32	b
33	b
34	d
35	b
36	c
37	d
38	b
39	c
40	b
41	b
42	a
43	d
44	d
45	b
46	d
47	d
48	b
49	b
50	b

51	d
52	none
53	d
54	a
55	b
56	d
57	a
58	d
59	c
60	c
61	c
62	c
63	b
64	c
65	d
66	c
67	b
68	a
69	a
70	a
71	b
72	d
73	a
74	d
75	d

76	b
77	d
78	b
79	d
80	d
81	b
82	d
83	b
84	b
85	c
86	c
87	a
88	c
89	c
90	c
91	a
92	b
93	b
94	a
95	b
96	c
97	c
98	b
99	a
100	b