S

INSTRUCTIONS **NUMBER OF QUESTIONS : 100** **TIME : 2 Hrs**

1. ATTEMPT ALL QUESTIONS WITHIN THE TIME.
2. EACH QUESTION CARRIES 1 MARK
3. NO NEGATIVE MARKS.
4. DON'T DO ROUGH WORK ON QUESTION PAPER AND OMR.
5. USE BLACK (OR) BLUE PEN FOR BUBBLING ON OMR.

CORRECT METHOD OF BUBBLING

1 ● 3 4

WRONG METHOD OF BUBBLING

✓ ⊗ ◑ ◓

INTO 9th CLASS STATE

MATHEMATICS

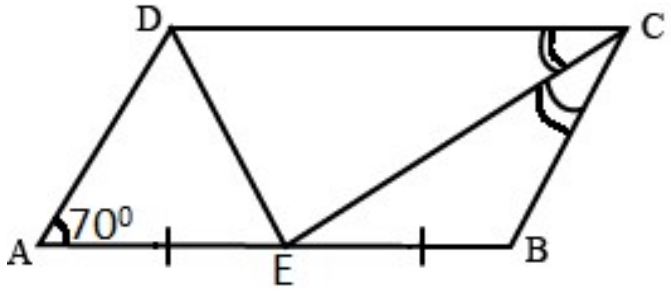
1. Find the value of $4-\left(2\frac{2}{3}+3\frac{1}{5}\right)=$ _____

   1) $\frac{-2}{15}$ 2) $\frac{-28}{15}$ 3) $\frac{8}{15}$ 4) $\frac{1}{2}$

2. If $0.18(5x-4)=0.5x+0.8$ then $x=$ _____

   1) 3 2) 3.8 3) 8 4) 1.9

3. In parallelogram ABCD, E is the midpoint of AB and CE bisects $\angle BCD$ and $\angle A=70^0$ then $\angle AED=$ _____



   1) 60^0 2) 35^0 3) 110^0 4) 55^0

4. What percentage of 3 litres is 15m*l*

   1) 5% 2) 30% 3) 0.5% 4) 3%

5. Simplify : $\sqrt{59+\sqrt[3]{119+\sqrt{29+\sqrt[3]{343}}}}$

   1) 7 2) 8 3) 6 4) 9

6. The smallest number that is to be subtracted from 549162 is order to make it a perfect square is

1) 28 2) 36 3) 62 4) 81

7. A pie diagram represents two items only. If the angle of the one sector is 120^0 then the ratio of the values of the two items is _____

1) 1:1 2) 1:2 3) 3:2 4) 4:5

8. Which of the following is largest rational number

1) $\frac{-4}{9}$ 2) $\frac{-5}{12}$ 3) $\frac{-7}{18}$ 4) $\frac{-2}{3}$

9. If we subtract 5 from 4 times of a number we get 19 then the number is

1) 18 2) 13 3) 6 4) 19

10. Number of sides of a regular polygon, if each interior angle is 156^0

1) 13 2) 14 3) 15 4) 17

11. If $2:7::x:28$ then x = _____

1) 2 2) 6 3) 7 4) 8

12. The smallest number by which 26244 should be divided so that the quotient is a perfect cube is _____

1) 34 2) 35 3) 36 4) 37

13. The total income of a man is ₹4000. He saves ₹200, then the angle of the sector representing his saving's in a pie diagram is

1) 20^0 2) 18^0 3) 40^0 4) 36^0

14. If $x = 5 + \frac{1}{5 + \frac{1}{5}}$ then the numerator of x is _____

1) 134 2) 135 3) 145 4) 125

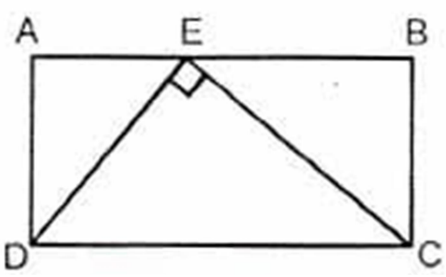
15. If $\frac{a}{y-z} = \frac{b}{z-x} = \frac{c}{x-y}$ then $ax + by + cz$ = _____

1) $-a$ 2) $-b$ 3) 0 4) -1

16. Which of the following equation has root $x = 6$ is _____

1) $4x = 6$ 2) $3x - 11 = 5$ 3) $2x - 6 = 7$ 4) $\frac{3}{2}x - 3 = 6$

17. In rectangle ABCD, "E" lies on AB. Triangle DEC has $\angle DEC = 90^0$, DE = 3cm and EC = 4cm then length of AD is



1) 2.4cm 2) 2.8cm 3) 1.8cm 4) 3.2cm

18. If P = ₹500 at the rate of 5% for 2years then the simple interest is _____

1) ₹25 2) ₹50 3) ₹70 4) ₹65

19. The value of $\sqrt{25.6 \times 52.9}$ is _____

1) 3.68 2) 0.368 3) 36.8 4) 0.0368

20. In a bar diagram if 20 units is represented by a bar of length 4cm, then the length of the bar representing 44 units is _____

1) 5cm 2) 8.8cm 3) 4.4cm 4) 17.6cm

21. If $\sqrt{1369} = 37$ then the value of $\sqrt{13.69} + \sqrt{0.1369}$ = _____

1) 4.07 2) 4.08 3) 4.10 4) 41.11

22. $(x+1)^2 + (y-2)^2 + (z+3)^2 = 0$ then $x + y + z$ = _____

1) 0 2) 6 3) -2 4) 2

23. If $\frac{x-4}{7} - \frac{x+4}{5} = \frac{x+3}{7}$ then x = _____

1) 14 2) 7 3) 9 4) -9

24. In a parallelogram PQRS, the internal angle bisectors of $\angle R$ and $\angle S$ intersect at "O" then $\angle ROS$ = _____

1) 180^0 2) 90^0 3) 120^0 4) 60^0

25. Number of conversion periods if interest is calculated compounded half yearly for 2½ years

1) 2 2) 3 3) 4 4) 5

26. The least perfect square number divisible by 3, 4, 5, 6, 8 is _____

1) 900 2) 1200 3) 2500 4) 3600

27. A die is thrown once the probability of getting a number less than 1 is _____

1) $\frac{1}{6}$ 2) $\frac{1}{3}$ 3) $\frac{2}{3}$ 4) 0

28. $\sqrt[3]{36} \times \sqrt[3]{384}$ = _____

1) 32 2) 28 3) 24 4) 34

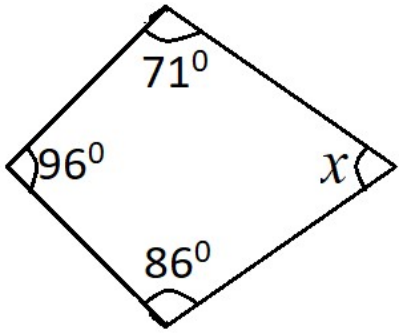
29. The cost of $5\frac{2}{5}$ litres of milk is ₹$101\frac{1}{4}$ then find the cost of 1 litre

1) ₹$9\frac{1}{5}$ 2) ₹$6\frac{1}{2}$ 3) ₹$8\frac{1}{2}$ 4) ₹$18\frac{3}{4}$

30. Roberts father is 4 times as old as Robert. After 5years father will be three times as old as Robert will then their present ages are

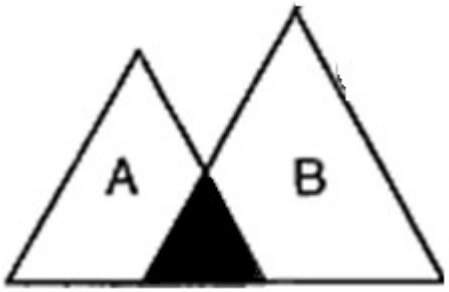
1) 11years, 41years 2) 10years, 40years 3) 9years, 38years 4) 8years, 39years

31. The value of 'x' in the adjacent polygon



1) 72^0 2) 64^0 3) 107^0 4) 112^0

32. In the adjacent figure $\frac{1}{3}$ of the area of 'A' and $\frac{1}{6}$ of the area of B are shaded, then the ratio of their areas A : B = _____



1) 1 : 2 2) 2 : 1 3) 2 : 3 4) 3 : 2

33. Number of non-perfect square numbers between 45^2 and 46^2 is _____

1) 91 2) 90 3) 1 4) 45

34. A bag contains 11 oranges, 8 mangoes and 13 apples. A fruit is drawn at random. Then what is the probability of not drawing an apples is _____

1) $\frac{15}{32}$ 2) $\frac{19}{32}$ 3) $\frac{11}{32}$ 4) $\frac{13}{32}$

35. $1+19\times18\times3 =$ _____

1) 19^2-18^2 2) 17^3-16^3 3) 19^3-18^3 4) 19^2-17^2

36. The standard form of $\frac{192}{-336}$ is

1) $-\frac{1}{3}$ 2) $-\frac{4}{7}$ 3) $-\frac{1}{14}$ 4) $-\frac{7}{16}$

37. Latha has total ₹300 in coins of denomination as ₹1, ₹2 and ₹5. The number of ₹2 coins is 3 times the number of ₹5 coins. The total number of coins is 160, then number of ₹5 coins is

1) 80 2) 60 3) 20 4) 40

38. The number of diagonals of octagon is _____

1) 54 2) 20 3) 28 4) 24

39. If the marked price of an article is ₹1600 and allowed a discount of 6% then selling price of an article is _____

1)₹1107 2) ₹1105 3)₹509 4) ₹1504

40. If the Ramanujan number $1729 = x^3 + y^3 = z^3 + w^3$ then $\frac{x+y+z+w}{4}$ is _____

1) 8 2) 4 3)1 4) 16

41. A bowl contains cards numbered from 1 to 50. A card is drawn at random then what is the probability that the card drawn is prime number _____

1) $\frac{7}{25}$ 2) $\frac{3}{10}$ 3) $\frac{3}{25}$ 4) $\frac{4}{25}$

42. Which of the following is not a perfect cube

1) 110592 2) 389017 3)238325 4) 592704

43. A man spends $\frac{2}{5}$ part of his salary on house rent, $\frac{3}{10}$ part on food and $\frac{1}{8}$ part on conveyance. If he is left with ₹1400. Find his expenditure on food and conveyance respectively

1)₹2200, ₹500 2) ₹2400, ₹1000 3)₹2000, ₹800 4) ₹2100, ₹600

44. In a fraction numerator is 6 less than the denominator. If 3 is added to the numerator of a fraction it becomes $\frac{2}{3}$ then the fraction is

1) $\frac{1}{4}$ 2) $\frac{1}{2}$ 3) $\frac{3}{8}$ 4) $\frac{1}{3}$

45. Each exterior angle of a regular septagon is _____

1) $51\frac{3}{7}^0$ 2) $61\frac{3}{8}^0$ 3) $50\frac{3}{7}^0$ 4) 360^0

46. Rahul borrowed ₹4000 from a bank for $1\frac{1}{2}$ years at 8% per annum compound half yearly then the compound interest is _____

1)₹4999 2) ₹598.40 3)₹499.46 4) ₹690.57

47. Which of the following is sum of the square of two consecutive natural numbers

1) 2331 2) 1570 3)1060 4) 1861

48. If $a,b,c \in R$ then $(a+b)\times c = (a\times c)+(b\times c)$ is _____ property.

1) Distributive property 2) Associative property
3) Closure property 4) Commutative property

49. If $\frac{n^2-1}{2} + \frac{n^2+1}{2} = 2209$ then $\frac{n+1}{2}$ = _____

1) 24 2) 47 3)48 4) 33

50. The rational which is not lies between $\frac{4}{5}$ and $\frac{5}{6}$

1) $\frac{97}{120}$ 2) $\frac{49}{60}$ 3) $\frac{33}{40}$ 4) $\frac{96}{120}$

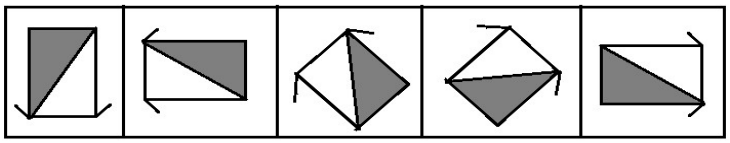
ARITHMETIC AND LOGICAL REASONING QUESTIONS:

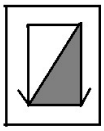
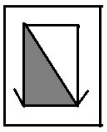
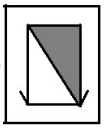
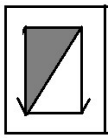
51. Find the missing term in the given series

5, 6, 9, 14, 21, 30, 41, ?

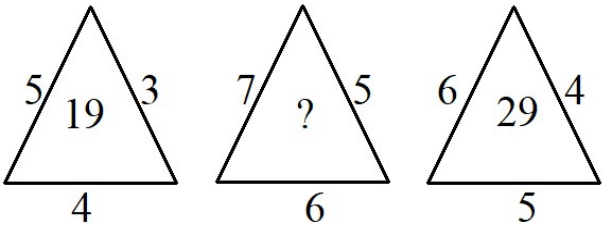
1) 21 2) 54 3) 61 4) 72

52. Find the next figure in the given series



1)  2)  3)  4) 

53. Find the missing character



1) 25 2) 37 3) 41 4) 47

54. Choose the odd one out

1) Goat 2) Puppy 3) Cow 4) Buffalo

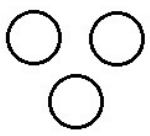
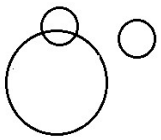
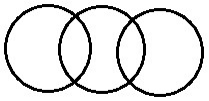
55. In a certain code 'ROAM' is written as '5913' and 'DONE' is written as '4962'. How is 'MEAN' written in that code?

1) 5216 2) 3126 3) 3216 4) 5126

56. Introducing a woman, Sohan said, "She is the mother of the only daughter of my son". How that woman is related to Sohan?

1) Daughter 2) Sister – in – law 3) Wife 4) Daughter – in – law

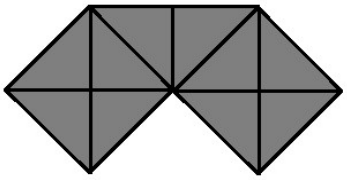
57. Which of the following Venn diagrams represents the relationship between "Mobiles, Televisions, Electronics"?

1)  2)  3)  4) 

58. If '+' denotes for '×', '÷' denotes '−','×' denotes '÷' and '−' denotes '+', then $5+12\div7-44\times2$ is _____.

1) 89 2) 75 3) 65 4) 83

59. Find the possible number of triangles in the given figure



1) 19 2) 20 3) 21 4) 26

60. Select its correct water image out of the given options for 'NUCLEAR'

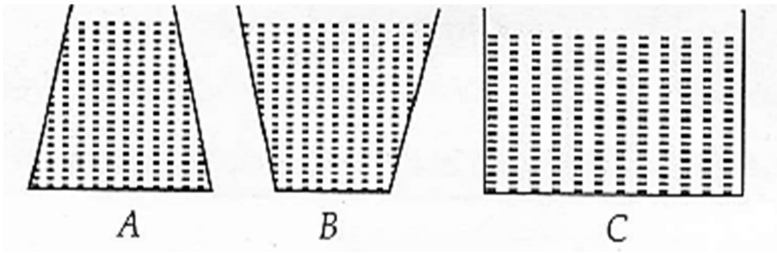
1) ЯAELCUN 2) NUCLEAR 3) NUCLEAR 4) NUCLEAR

PHYSICS

61. The force which acts tangentially on an object and opposes the relative motion is

1) Friction 2) Tension 3) Gravity 4) Normal force

62. Three vessels A, B and C of different shapes contain a water upto the same height as shown in the figure. P_A, P_B *and* P_C be the pressures exerted by the water at the bottom of the vessels A, B and C respectively. Then

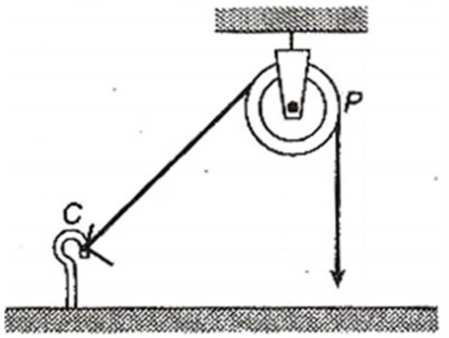


1) $P_A > P_B > P_C$ 2) $P_B > P_C > P_A$ 3) $P_C > P_B > P_A$ 4) $P_A = P_B = P_C$

63. When a force is applied on an object in the direction of its motion, it:

1) Increases its speed 2) Decreases its speed
3) Changes its direction 4) Stops moving

64. One end of massless rope, which passes over a massless and frictionless pulley P is tied to a hook C while the other end is free. Maximum tension that the rope can bear is 720 N. With what value of maximum safe acceleration (in ms^{-2}) can a man of 60 kg climb on the rope? ($g = 10 m/s^2$)



1) 16 2) 12 3) 2 4) 80

65. Which of the following is an example of a non-contact force?

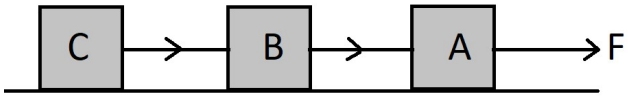
1) Tension 2) Friction 3) Magnetic force 4) Normal force

66. The pressure at the bottom of a container filled with liquid is depends on

1) Density of the liquid 2) Acceleration due to gravity

3) Depth of the liquid 4) All of these

67. Three identical blocks of masses each m = 2 kg are drawn by a force F = 30N on a frictionless surface, then what is the tension (in N) in the string between the block B and C?

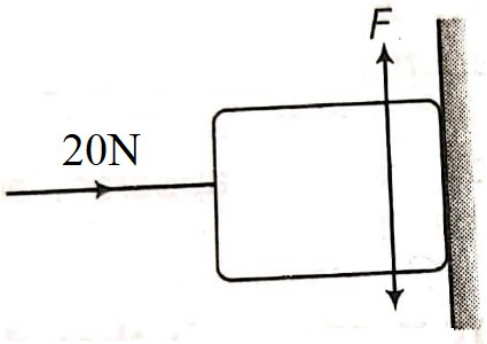


1) 9.2N 2) 10N 3) 4N 4) 7.8N

68. A block of mass M is pulled along a horizontal frictionless surface by a rope of mass *m*. If a force P is applied at the free end of the rope, the force exerted by the rope on the block is

1) $\frac{Pm}{M+m}$ 2) $\frac{Pm}{M-m}$ 3) P 4) $\frac{PM}{M+m}$

69. A horizontal force of 20 N is necessary to just hold a block stationary against a wall. The coefficient of friction between the block and the wall is 0.8. The weight of the block is

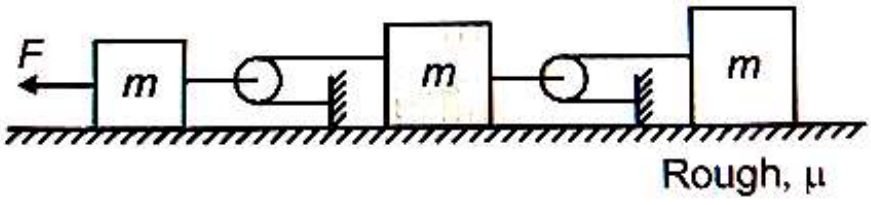


1) 20 N 2) 16 N 3) 100 N 4) 2 N

70. The tester of magnetic compass does not show deflection in

1) Sea water 2) Tap water 3) Distilled water 4) Salt water

71. On a table, three blocks are placed as shown in the figure. Mass of each block is m and coefficient of friction for each block is μ. A force F is applied on the first block so as to move the system. The minimum required F should be



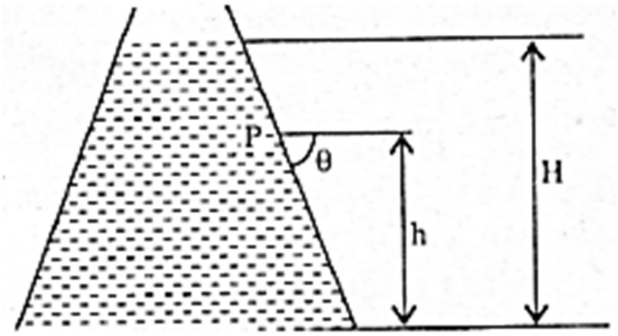
1) $8\mu mg$ 2) $9\mu mg$ 3) $7\mu mg$ 4) $5\mu mg$

72. When electric current is passed through the copper sulphte solution, copper sulphate dissociates into……

1) Copper and carbon 2) Copper and oxide

3) Copper and sulphate ions 4) Copper and hydrogen

73. A vessel contains a liquid of density ρ as shown in figure. The gauge pressure at a point P is:

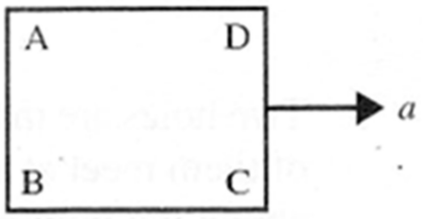


1) $h\rho g$ 2) $H\rho g$ 3) $(H-h)\rho g$ 4) $(H-h)\rho g\cos\theta$

74. Coating of …… on iron is used in bridge and automobiles to provide strength.

1) Chromium 2) Carbon 3) Zinc 4) tin

75. A close rectangular tank is completely filled with water and is accelerated horizontally with an acceleration a towards right. Pressure is (i) maximum at and (ii) minimum at:

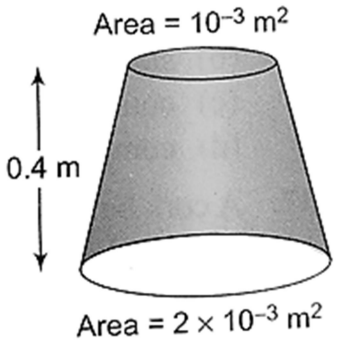


1) (i) B (ii) D 2) (i) C (ii) D 3) (i) B (ii) C 4) (i) B (ii) A

76. A block rests on a rough inclined plane making an angle of 30^0 with the horizontal. The coefficient of static friction between the block and the plane is 0.8. If the frictional force on the block is 10 N, the mass of the block (in kg) is ($g = 10\ m/s^2$)

1) 2.0 2) 4.0 3) 1.6 4) 2.5

77. A uniformly tapering vessel is filled with a liquid of density $900\ kg/m^3$. The force that acts on the base of the vessel due to the liquid is $(g = 10 ms^{-2})$

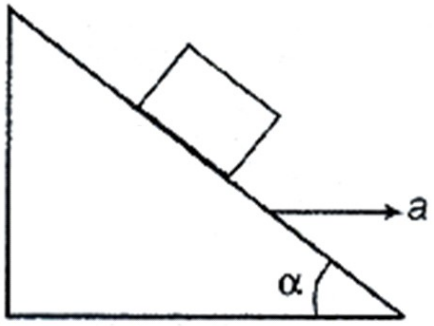


1) 3.6 N 2) 7.2 N 3) 9.0 N 4) 14.4 N

78. The upper half of an inclined plane with inclination ϕ is perfectly smooth, while the lower half is rough. A body starting from rest at the top will again come to rest at the bottom, if the coefficient of friction for the lower half is given by

1) $2\sin\phi$ 2) $2\cos\phi$ 3) $2\tan\phi$ 4) $\tan\phi$

79. A block is kept on a frictionless inclined surface with angle of inclination α. The incline is given an acceleration a to keep the block stationary. Then, a is equal to

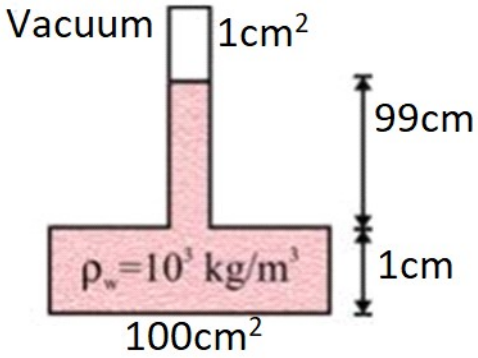


1) $\frac{g}{\tan\alpha}$ 2) g 3) $\tan\alpha$ 4) $g\tan\alpha$

80. A smooth block is released at rest on a 45^0 incline and then slides a distance d. The time taken to slide is n times as much to slide on rough incline than on a smooth incline. The coefficient of friction is

1) $\mu_k = 1-\frac{1}{n^2}$ 2) $\mu_k = \sqrt{1-\frac{1}{n^2}}$ 3) $\mu_s = 1-\frac{1}{n^2}$ 4) $\mu_s = \sqrt{1-\frac{1}{n^2}}$

81. For the arrangement shown in the figure, the force at the bottom of the vessel which has water of density $10^3 kg/m^3$.

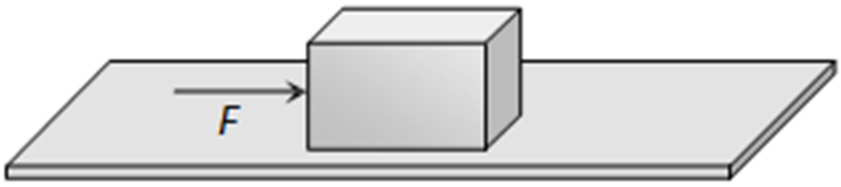


1) 200N 2) 100N 3) 20N 4) 2N

82. Which of the following is not a musical instrument?

1) Harmonium 2) Table 3) Flute 4) Traffic

83. A block of mass 2 *kg* is kept on the floor. The coefficient of static friction is 0.4. If a force F of 2.5 *Newtons* is applied on the block as shown in the figure, the frictional force between the block and the floor will be



1) 2.5 N 2) 5 N 3) 8 N 4) 10 N

84. When the amplitude is _____the sound produced is feeble.
1) Large 2) Small 3) Twice 4) Double

85. When a balloon rubbed with plastic paper and brought near the pieces of paper. What is your observation?
1) Balloon attracts pieces of paper
2) Balloon does not attract pieces of paper
3) Balloon is blow out
4) Increases size of the balloon

86. A ball of mass 0.2 kg is thrown vertically upwards by applying a force by hand. If the hand moves 0.2 m while applying the force and the ball goes upto 2m height further, find the magnitude of the force
1) 4 N 2) 16 N 3) 20 N 4) 22 N

87. Why do tools meant for cutting always have sharp edges?
1) Sharp edges have more surface area and low pressure
2) Sharp edges have more surface area and high pressure
3) Sharp edges have least surface area and low pressure
4) Sharp edges have least area and high pressure

88. A player caught a cricket ball of mass 150 g moving at a rate of 20 m/s. If the catching process is completed in 0.1 s, the force of the blow exerted by the ball on the hand of the player is equal to
1) 150 N 2) 3 N 3) 30 N 4) 300 N

89. Consider a car moving on a straight road with a speed of 100 ms^{-1}. The distance at which car can be stopped, is $[\mu_k = 0.5]$
1) 800 m 2) 1000 m 3) 100 m 4) 400 m

90. In some machines, it may not be advisable to use oil as a lubricant. Then _____ between the moving parts is used to reduce friction.
1) Graphite 2) Oil 3) Air cushion 4) None

CHEMISTRY

91. How many of the following statements are correct
1) In petroleum and natural gas deposits , the layer containing petroleum oil and gas is above that of water
2) Density of water is less than that of petroleum oil and gas
3) Petrochemicals are used in the manufacture of detergents, fibres
4) Natural gas is stored under high pressure as compressed natural gas
1) 1 2) 2 3) 4 4) 3

92. Match the following

	Set (A) (petroleum products)		Set(B) (uses)
1.	LPG	a)	Ointments
2.	Petrol	b)	Fuel for home and industry
3.	Diesel	c)	Paints
4.	Paraffin wax	d)	Aviation fuel
5.	Bitumen	e)	Electric generators

1) 1)*b*;2)*d*;3)*e*;4)*a*;5)*c* 2) 1)*d*;2)*b*;3)*a*;4)*e*;5)*c*

3) 1)*b*;2)*c*;3)*a*;4)*d*;5)*e* 4) 1)*a*;2)*b*;3)*d*;4)*c*;5)*e*

93. Which of the following is also called as black gold?

1) Petroleum 2) Coal 3) Natural gas 4) Diesel

94. If a CNG vehicle releases pollutants mixture of 2 moles of carbondioxide; 2 moles of sulphur dioxide and 1 mole of nitrous oxide. The sum of the weights of pollutants is

1) 228 g 2) 232 g 3) 260 g 4) 272 g

95. The process of separating the various constituents of petroleum is called

1) Distillation 2) Refining

3) Crystallization 4) Evaporation

96. The incorrect statement from the following is

1) Coal is used in thermal power plants to produce electricity

2) Coal tar is used in industries for manufacture of steel

3) Coke is purest form of carbon

4) Coal gas is obtained during processing of coal to get coke

97. A car driver is very conscious of pollution, to reduce the effect of pollution, which fuel should he use in his vehicle?

1) Petrol 2) Diesel 3) CNG 4) Kerosene

98. When coal is heated in air, it burns and produces mainly CO_2 gas, the percentage of weight of oxygen in CO_2 is

1) 72.7% 2) 36.4% 3) 75.4% 4) 42.3%

99. Which one of the following is not obtained from coal tar?

1) Photographic materials 2) Synthetic dyes

3) Roofing materials 4) Glass

100. The gas '***X***' is used in the production of fertilisers, which is also obtained from natural gas. The gas 'X' is

1) O_2 2) H_2 3) CO_2 4) O_3

THE END