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

WRONG METHOD OF BUBBLING

INTO 9TH CLASS STATE& CBSE

MATHEMATICS

1. Which of the following is a terminating decimal

   1) $\frac{2}{11}$ 2) $\frac{3}{27}$ 3) $\frac{17}{25}$ 4) $\frac{1}{15}$

2. In a square ABCD, AB = (2x+ 3)cm and BC = (3x-5)cm then value of x is _____

   1) 4 2) 5 3) 6 4) 8

3. $\sqrt{176+\sqrt{2401}}$ = _____

   1) 14 2) 15 3) 16 4) 17

4. Number of integers from -250 to 525 is _____

   1) 775 2) 776 3) 774 4) 276

5. From a square with side of length 5, triangular pieces from the four corners are removed to form a regular octagon. Find the area removed to the nearest integer?

   1) 3 2) 4 3) 5 4) 6

6. Simplify : $\frac{2}{5}+\frac{8}{3}-\frac{11}{15}+\frac{4}{5}-\frac{2}{3}$

   1) $\frac{37}{15}$ 2) $\frac{-37}{15}$ 3) $\frac{-36}{5}$ 4) $\frac{-38}{3}$

7. Solve 0.3m + 0.4 = 0.28m + 1.16

   1) 3.8 2) 38 3) 0.76 4) 76

8. $\sqrt[3]{74088}+\sqrt[3]{17576}=$ _____

1) 42 2) 76 3) 66 4) 62

9. The mean of the rational numbers $\frac{1}{4}$ and $\frac{3}{2}$ is

1) $\frac{17}{8}$ 2) $\frac{7}{8}$ 3) $\frac{3}{4}$ 4) $\frac{4}{3}$

10. The value of $\frac{2}{5}\times\frac{-3}{7}-\frac{1}{14}-\frac{3}{7}\times\frac{3}{5}$ is _____

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

11. How many perfect square numbers between 1 to 500 is _____

1) 22 2) 20 3) 21 4) 19

12. The angles of a triangle are in the ratio 5 : 3 : 7, then the value of greatest angle is ___

1) 12^0 2) 36^0 3) 84^0 4) 60^0

13. The probability of a prime number card from deck of cards _____

1) $\frac{15}{52}$ 2) $\frac{4}{13}$ 3) $\frac{5}{13}$ 4) $\frac{17}{52}$

14. $\left(1-\frac{1}{2}\right)\left(1-\frac{1}{3}\right)\left(1-\frac{1}{4}\right).....\left(1-\frac{1}{100}\right)=$

1) 0.09 2) 0.9 3) 0.001 4) 0.01

15. Solve : $\frac{x}{2}-1=\frac{x}{3}+4$

1) $\frac{1}{6}$ 2) $\frac{1}{30}$ 3) 30 4) 6

16. What is the multiplicative inverse of zero

1) 0 2) 1 3) Does not exist 4) -1

17. Mohan's father is thrice as old as Mohan. After 12 years he will be just twice his son. Then present age of father is _____

1) 12yrs 2) 36yrs 3) 48yrs 4) 24yrs

18. If $\frac{a}{b}=\left(\frac{2}{3}\right)^3+\left(\frac{3}{2}\right)^{-3}$ then $a+b$ is _____

1) Even number 2) Composite number

3) Perfect number 4) Prime number

19. If $(a-2020)^2+(b+2021)^2+(c-2022)^2=0$ then $a+b+c=$ _____

1) 2021 2) -2021 3) 2020 4) 2022

20. $\frac{1}{2\times3}+\frac{1}{3\times4}+\frac{1}{4\times5}+\frac{1}{5\times6}+.....+\frac{1}{2023\times2024}=$ _____

1) $\frac{1}{2024}$ 2) $\frac{1011}{1012}$ 3) $\frac{2023}{2024}$ 4) $\frac{1011}{2024}$

21. The degree of $\sqrt{625}$ is _____

1) 25 2) 1 3) 0 4) Does not exist

22. A sum of ₹10,000 is borrowed at a rate of interest 15% per annum for 2yrs, then the amount paid on simple interest is _____

1) ₹11500 2) ₹12000 3) ₹13000 4) ₹14000

23. The length of diagonals of a Rhombus are 6cm and 8cm then perimeter of a Rhombus is _____

1) 40cm 2) 28cm 3) 24cm 4) 20cm

24. **Statement (A) :** There are infinite rational numbers lie between 1 and 2

Statement (B) : infinite rational numbers lies between any two given rational numbers is called dense property

1) Both A and B are true 2) A is true, B is false

3) A is false, B is true 4) Both A and B are false

25. Which of the following cases, a parallelogram "KING" cannot be constructed?

1) IN = 6cm. NG = 4.5cm, IG = 7.5cm 2) KI = 5cm. IN = 6cm, IG = 6.5cm

3) KI = 5cm. IN = 6cm, IG = 13cm 4) KI = 5cm. IN = 6cm, IG = 8.5cm

26. $28\sqrt{a}+1426=\frac{3}{4}$ of 2872, then the value of 'a' is _____

1) 576 2) 676 3) 1296 4) 1444

27. The width of the class 10-19 is _____

1) 9 2) 8 3) 14.5 4) 10

28. In quadrilateral ABCD, the internal bisectors of $\angle A$ and $\angle B$ intersect at 'P' then $\angle BPA =$ _____

1) 90^0 2) $\angle C+\angle D$ 3) $\frac{\angle A+\angle B}{2}$ 4) $\frac{\angle C+\angle D}{2}$

29. The angles of a quadrilateral are in the ratio 1 : 2 : 3 : 4, then the difference between the largest and smallest angles $\left[if\ \pi = 180^0 \right]$

1) $\frac{\pi}{5}$ 2) $\frac{2\pi}{5}$ 3) $\frac{3\pi}{5}$ 4) $\frac{4\pi}{5}$

30. Which of the following is a Rational number

1) 5.2323….. 2) 1.23874….. 3) 0.4567…. 4) 5.1785….

31. $\sqrt{0.0009} + \sqrt{0.01} + \sqrt{0.81} + \sqrt{1.21} =$ _____

1) 2.13 2) 2.11 3) 2.1 4) 2.03

32. If (3x – 15) and (x + 5) are complementary angles, then the difference between them is _____

1) 25^0 2) 60^0 3) 10^0 4) 30^0

33. The sum of three consecutive odd numbers is 81. Then the middle number is _____

1) 25 2) 27 3) 31 4) 29

34. If $2^x = \sqrt[3]{32}$ then $x =$ _____

1) $\frac{5}{2}$ 2) $\frac{5}{3}$ 3) 15 4) $\frac{3}{5}$

35. The probability of getting a face card from deck of cards _____

1) $\frac{1}{13}$ 2) $\frac{2}{13}$ 3) $\frac{3}{13}$ 4) $\frac{4}{13}$

36. Amount when interest is compounded half-yearly for ₹62,500 in $1\frac{1}{2}$ years at 8% per annum.

1) ₹70,704 2) ₹70,304 3) ₹77,804 4) ₹77,504

37. The smallest 4-digit perfect square is _____

1) 1000 2) 1024 3) 1036 4) 1016

38. Which of the following is incorrect _____

1) $N \subset W \subset Z \subset Q$ 2) $W \subset Q \subset R$ 3) $N \subset W \subset Z \subset S$ 4) $W \subset Z \subset Q \subset R$

39. What is the smallest positive integer which when multiplied by 2816, give a perfect square?

1) 2 2) 3 3) 4 4) 11

40. The least number to be subtracted from 549162 to make it a perfect square

1) 81 2) 5 3) 15 4) 41

41. The interior angle of a regular polygon is 108. Then the number of sides of the polygon is _____

1) 4 2) 5 3) 7 4) 8

42. Area of a square plot is $2304m^2$, then its diagonal is _____

1) 48m 2) $24\sqrt{2}$m 3) 96m 4) $48\sqrt{2}$m

43. Which of the following statement is true

1) $\frac{5}{7}<\frac{7}{9}<\frac{9}{11}<\frac{11}{13}$ 2) $\frac{5}{7}<\frac{11}{13}<\frac{9}{11}<\frac{7}{5}$ 3) $\frac{11}{13}>\frac{11}{9}>\frac{9}{11}>\frac{7}{11}$ 4) $\frac{5}{8}>\frac{7}{6}>\frac{11}{13}>\frac{15}{7}$

44. Evaluate : $30-\left[26-\left\{15+\left(8-\overline{6-3}\right)\right\}\right]$

1) 30 2) 22 3) -7 4) 24

45. Number of digits in square of a '7' digit number is

1) 14 (or) 15 2) 49 (or) 50 3) 7 (or) 8 4) 13 (or) 14

46. In a pie chart, the central angle of a component is 72^0 and its value is 24. Find the total value of all the components of data is _____

1) 240 2) 120 3) 360 4) 420

47. Number of independent measurements are required to construct a Rhombus is _____

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

48. The value of $\sqrt[3]{\frac{8}{125000}}$ = _____

1) 0.4 2) 0.04 3) 0.8 4) 0.6

49. A TV was bought at a price of ₹21,000. After one year the value of the TV was depreciated by 5%, then the value of the TV after one year _____

1) ₹18,850 2) ₹21000 3) ₹19,000 4) ₹19,950

50. Solve $16(3x-5)-10(4x-8)=40$

1) $x=7$ 2) $x=5$ 3) $x=-7$ 4) $x=8$

ARITHMETIC AND LOGICAL REASONING QUESTIONS:

51. 1, 2, 2, 3, 3, 3, 4, 4, 4, 4,……. Then 150th term is _____

1) 15 2) 16 3) 17 4) 18

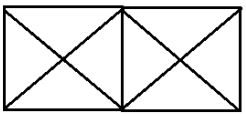
52. Odd one out in the following numbers is _____

1) 112 2) 256 3) 118 4) 214

53. In a certain code MATH:LBSI, how "WIND" will be written in that code.

1) VJEM 2) MJEV 3) EMJV 4) VJME

54. The number of triangles in the given figure



1) 18 2) 10 3) 12 4) 16

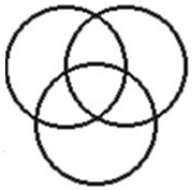
55. If "+" means "×", "-" means "+", "+" means "-", "×" means "-". Then the value of $4+6-12\times2\div4$

1) 28 2) 26 3) 25 4) 24

56. Next letter in the series : Z, X, U, Q, _____

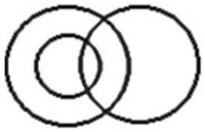
1) M 2) L 3) N 4) K

57. Which of the following venn diagram represents: Food, Milk, Fruits

1) 

2) 

3) 

4) 

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

58. Ramu said to lady. "the brother of your only daughter is the brother of my wife". How is the lady related with Ramu?

1) Mother 2) Sister 3) Mother –in-law 4) Aunt

59. Cup is to coffee as bowl is to

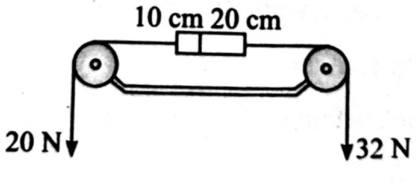
1) Dish 2) Soup 3) Spoon 4) Food

60. In a row of forty children, P is thirteenth from the left end and Q is ninth from the right end. How many children are there between P and R, if R is fourth to the left of Q?

1) 12 2) 13 3) 14 4) 15

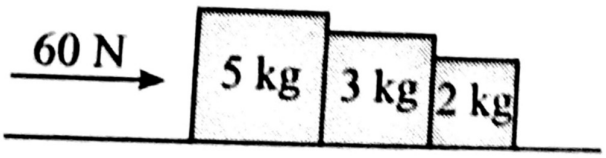
PHYSICS

61. All the surfaces are smooth and the string and pulleys are light. The force exerted by the 20cm part of the rod on the 10cm part is



1) 6N 2) 12N 3) 24N 4) 36N

62. Consider two arrangements as shown in figure, take m = 2kg. The contact force between 2kg and 3kg is N_1 3kg and 5kg is N_2 blocks in arrangement. The value of $\frac{N_1}{N_2}$



is

1) 1 : 3 2) 3 : 5 3) 1 : 6 4) 2 : 5

63. If μ_s, μ_k *and* μ_r are coefficients of static friction, sliding friction and rolling friction, then

1) $\mu_s > \mu_k > \mu_r$ 2) $\mu_s < \mu_k < \mu_r$ 3) $\mu_r > \mu_s > \mu_k$ 4) $\mu_r > \mu_s > \mu_k$

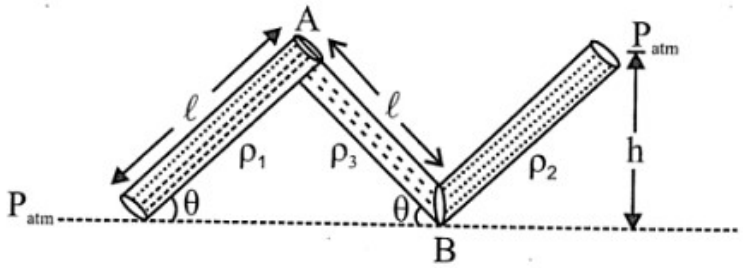
64. A vehicle of mass *m* is moving on a rough horizontal road with K.E. K_0. If coefficient of friction is μ, the stopping distance will be

1) $\frac{K_0}{\mu g}$ 2) $\frac{K_0}{\mu mg}$ 3) $\frac{K_0}{\mu m}$ 4) $\mu m K_0$

65. The pressure exerted by the air is known as _____

1) Atmospheric gravity 2) Atmospheric pressure
3) Atmospheric friction 4) Above all

66. Find out sin θ



1) $\frac{\rho_2 h}{(\rho_3 - \rho_1)\ell}$ 2) $\frac{\rho_1 h}{(\rho_3 - \rho_2)\ell}$ 3) $\frac{\rho_3 h}{(\rho_2 - \rho_1)\ell}$ 4) $\frac{\rho_2 h}{(\rho_1 - \rho_3)\ell}$

67. The sucker sticks to the surface because the _____acts on it.

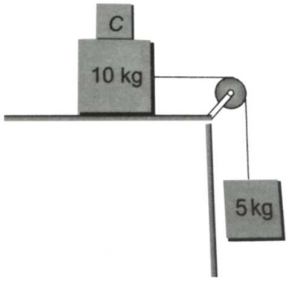
1) Atmospheric gravity 2) Atmospheric pressure
3) Atmospheric friction 4) Above all

68. We use sharper side of a knife to cut vegetables than the blunt side because

1) Blunt side has a smaller contact area 2) Sharper side has a smaller contact area
3) Sharper side exerts less pressure 4) Blunt side exerts more pressure

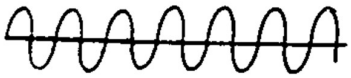
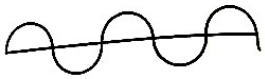
69. **Assertion :** You could not write with pen or pencil if there were no friction.
Reason : Friction is a friend.
Which of the following is correct?
1) A and R are correct and R supports A
2) A and R are correct but R does not support A
3) A is correct but R is incorrect 4) R is correct but A is incorrect

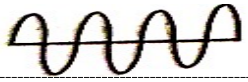
70. Two masses A and B of 10kg and 5kg, respectively, are connected with a string passingover a frictionless pulley fixed at the corner of a table as shown. The coefficient of static friction between A and the table is 0.2. The minimum mass C that should be placed on A to prevent it from moving is equal to



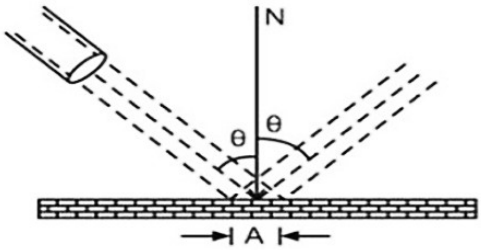
1) 12kg 2) 5kg 3) 10kg 4) 15kg

71. In the given waves, which one has more frequency?

1)  2) 

3)  4) 

72. A nozzle throws a stream of gas against a wall with a velocity v much larger than the thermal agitation of the molecules. After collision of the molecules with wall the magnitude of their velocity remains same. Also assume that the force exerted on the wall by the molecules is perpendicular to wall. (This is not strictly true for a rough wall.) Find the pressure exerted on the wall. (n = number of molecules per unit volume, m = mass of a gas molecule)



1) $2nmv^2\cos^2\theta$ 2) $3nmv^2\cos^2\theta$ 3) $nmv^2\cos^2\theta$ 4) $2nmv^2\sin^2\theta$

73. **P:** Intensity of sound depends on amplitude

Q: Pitch of the sound depends on Frequency

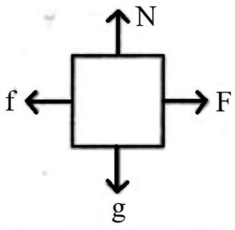
1) P, Q both are false 2) P is true, Q is false

3) P is false, Q is true 4) P, Q both are true

74. The process of depositing a layer of any desired metal on another material by means of electricity is called

1) Electroplating 2) Electrolysis 3) Photoelectric 4) Electromagnetism

75. From the given diagram, you may noticed that F pair of forces acting in opposite directions are



a) Normal force and frictional force b) Normal force and gravitational force

c) Frictional force and external force d) Normal force and external force

e) Frictional force and gravitational force

1) a, b 2) b, c 3) c, d 4) d, e

76. Read and study the given actions carefully and answer correctly to "Where the friction is useful"……

I) Striking a match stick II) Writing with a pencil

III) Pushing a cupboard from one room to another

IV) Sharpening a knife

1) I and II only 2) I and III only 3) I, II and IV only 4) All of the above

77. What will happen if a compass placed near a bar magnet?

1) Compass needle moves by muscular force

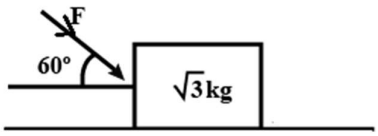
2) Compass needle moves by gravitational force

3) Compass needle moves by frictional force

4) Compass needle moves by magnetic force

78. The maximum value of F so that block does not move is?

(coefficient of friction $\mu = \frac{1}{2\sqrt{3}}$)



1) 20 N 2) 10 N 3) 12 N 4) 15 N

79. Which of the following is a correct statement?

1) A car is in rest, no forces acting on it

2) A car is in rest, net force acting on it is zero

3) A car is in non-uniform motion, net force acting on it is zero

4) None

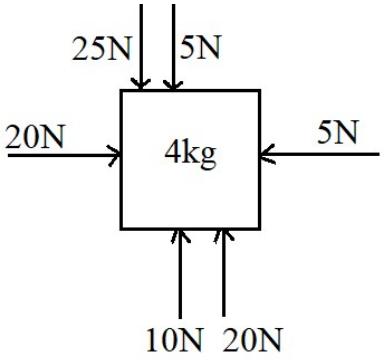
80. Match it

a) Changes the speed of an object	i) hitting a ball projected by a bowler
b) Changes the shape of an object	ii) making a ship with a paper
c) Changes the direction of an object	iii) applying brakes for a moving car

1) a – iii, b – ii, c – i 2) a – i, b – ii, c - iii

3) a – iii, b – i, c – ii 4) a – ii, b – i, c - iii

81. Find the net force acting on the body for the following diagram.



1) 15N towards right side 2) 15N towards left side

3) 25N towards right side 4) 30N towards upwards

82. A swimmer is at a depth of 2m from the surface of water. Then pressure exerted by the water on him

1) 0.2atm 2) 1.2atm 3) $200\,N/m^2$ 4) $2000\,N/m^2$

83. Static friction, kinetic frication, rolling friction arrange the forces

(f_s) (f_k) (f_r)

in decreasing order

1) Static, kinetic, rolling friction ($f_s > f_k > f_r$)

2) Kinetic, rolling, static friction ($f_k > f_r > f_s$)

3) Rolling, kinetic, static friction ($f_r > f_k > f_s$)

4) Static, rolling, kinetic friction ($f_s > f_r > f_k$)

84. A pendulum oscillates 40 times in 4 seconds. Then time period and frequency of pendulum

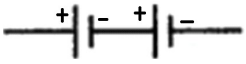
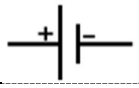
1) 10seconds, 0.1Hz 2) 0.1seconds, 10Hz

3) 4seconds, 10Hz 4) 1second, 10Hz

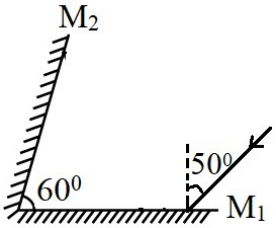
85. Sound can travel through

1) Gases only 2) Liquids only 3) Solids only 4) Slide, liquids, gases

86. Which of the following symbol represents battery

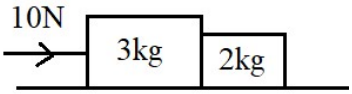
1)  2)  3)  4) 

87. Find the angle of deviation of light ray after '2' reflection



1) 240^0 clockwise 2) 120^0 clockwise
3) 240^0 anticlockwise 4) 200^0 anticlockwise

88. Find the contact force between 2kg block and 3kg block



1) 6N 2) 4N 3) 12N 4) 5N

89. Speed of sound on earth at normal temperature is 330m/s. The speed of sound on moon at same temperature is

1) 330m/s 2) 3×10^8 m/s 3) Zero 4) 2×10^8m/s

90. Phenomenon of splitting of light into different colour's is known as

1) Scattering 2) Total internal reflection
3) Dispersion 4) Diviation

CHEMISTRY

91. From the deposits of petroleum and natural gas the layer of petroleum oil is _____ layer of water and _____ layer of natural gas

1) Above, below 2) Equal, below 3) Below, above 4) Above, equal

92. Which of the following gas is obtained from Natural gas, used in the production of fertilisers (urea)

1) Nitrogen 2) Hydrogen 3) Oxygen 4) Carbondioxide

93. Which of the following is the pure form of carbon

1) Coke 2) Coal gas 3) Coal tar 4) Bitumen

94. Which of the following is an exhaustible natural resources?

1) Sun light 2) Air 3) Coal 4) Sea water

95. PCRA means

1) Petroleum consuming research association
2) Petrol consumers registered association
3) Petroleum conservation research association
4) Petroleum conservation registered association

96. Which of the following is NOT a constituent of petroleum?

1) Diesel 2) Plastic 3) Paraffin wax 4) Lubricating

97. Which gas is obtained from natural gas and used to make fertilizers?

1) Hydrogen 2) Carbon dioxide 3) Nitrogen 4) Oxygen

98. Which of the following is not a free state of carbon

1) Petrol 2) Coke 3) Diamond 4) All of above

99. How much percentage of carbon is present in bituminous?

1) 20 – 25% 2) 65 – 85% 3) 25 – 35% 4) 98%

100. Paheli is writing about the advantages of LPG. Which of the following statements are incorrect

1) LPG does not leave behind any solid residue on burning

2) LPG produce many poisonous gases on burning

3) LPG burns with a smokeless flame and does not cause pollution

4) LPG has high calorific value and produce lots of heat

THE END