INTO 9TH CBSE/ICSE

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

Mathematics

1. The multiplicative identity element for natural numbers _____
   1. 0 2. 1 3. -1 4. Does not exist

2. If $x+\frac{1}{x}=2$ then $x^{2017}+\frac{1}{x^{2017}}=$_____
   1. 2 2. 2^8 3. 8^2 4. 2×8^2

3. Two supplementary angles differ by 34. The smallest angle is _____
   1. 180^0 2. 90^0 3. 73^0 4. 107^0

4. If $5(x+2)-2(3-4x)=3(x+5)-4(4-x)$ then the value of x is
   1. $-\frac{5}{6}$ 2. $\frac{5}{6}$ 3. $-\frac{6}{5}$ 4. $\frac{6}{5}$

5. The numerator of a fraction is 6 less than the denominator. If 3 is added to the numerator, the fraction is equal to $\frac{2}{3}$, the original fraction is _____
   1. $\frac{3}{9}$ 2. $\frac{8}{2}$ 3. $\frac{9}{5}$ 4. $\frac{5}{9}$

6. The number of independent measurements are required to draw a unique quadrilateral is _____
   1. 2 2. 3 3. 4 4. 5

7. Which of the following is the exponential form of 0.00000302
   1. 3.02×10^{-6} 2. 3.20×10^{-6} 3. 2.30×10^{6} 4. 2.03×10^{6}

8. The value of 'x' such that $\frac{1}{49}\times 7^{2x}=7^8$
   1. 4 2. 5 3. 6 4. 3

9. The marked price of a ceiling fan is ` 1600 and the shop keeper allows a discount of 6% on it. Then its selling price is _____
   1. ` 1405 2. ` 1540 3. ` 1504 4. ` 5104

10. The cost of a pair of shoes is ` 450. The sales tax charged was 6%. The bill amount is _____

1. ` 774 2. ` 747 3. ` 477 4. ` 474

11. If there are no common factors other than '1' among a, b, c then the triplet (a, b, c) is called _____

1. Pythagorean triplets 2. Prime triplets 3. Rational triplets 4. Primitive triplets

12. The value of $\sqrt{64} + \sqrt[3]{27} + \sqrt[4]{16}$ =_____

1. 13 2. 12 3. 1 4. -2

13. The cube root of 4096 is _____

1. 4 2. 7 3. 16 4. 18

14. The boundaries are also called _____

1. Lesser limits 2. Greater limits 3. False class limits 4. True class limits

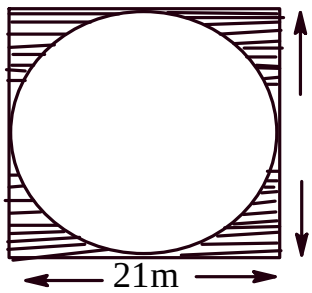
15. The method of drawing enlarged or reduced similar figures is called _____

1. Monilation 2. Megmentation 3. Dilation 4. Diptation

16. The circumference of a circle is 22cm. Then the area of its semicircle is _____

1. $\frac{1925}{100}$ 2. $\frac{1295}{10}$ 3. 12.95 4. 15.29

17. From the Adjacent figure, the area of the shaded region is _____ (in m^2)



1. 59.4 2. 49.5 3. 95.4 4. 94.5

18. Area of a circular path is _____

1. $\pi\left(R^2 + r^2\right)$ 2. $2\pi\left(R - r\right)$ 3. $2\pi\left(R^2 - r^2\right)$ 4. $\frac{2\pi\left(R^2 - r^2\right)}{2}$

19. The cost of 20m of a cloth is ` 1600, then what will be the cost of 24.5m of that cloth is _____(in `)

1. 1096 2. 1960 3. 2690 4. 1690

20. 300km is _____ cm

1. 3×10^9 2. 3×10^8 3. 3×10^7 4. 3×10^6

21. Workers and days are in _____ proportion (at a constant work)

1. Direct 2. Inverse 3. Compound 4. Simple

22. 12 painters can paint a wall of 180m long in 3 days. Then the number of painters required to paint 200m long wall in 5 days is _____

1. 2 2. 4 3. 6 4. 8

23. If A = xy, B = y^2z; C = x^2z^2 , then ABC =_____

1. $(xyz)^{-3}$ 2. $(xyz)^3$ 3. $(xyz)^{\frac{1}{2}}$ 4. $(xyz)^2$

24. In the multiplying a binomial by a monomial, which of the following law is used _____

1. Closure 2. Associative 3. Distributive 4. Inverse

25. If m=2 and n = -4 then $m^n + n^m$ =_____

1. $\frac{257}{16}$ 2. $\frac{265}{16}$ 3. $\frac{625}{16}$ 4. $\frac{652}{16}$

26. One of the factor of $x^2 + 2xy + y^2 - 4z^2$ is _____

1. $(x - y - z)$ 2. $(2x + 2y + 3z)$ 3. $x + y + 2z$ 4. $(x + y + z)$

27. The value of '*m*' for which $x^2 + 3xy + x + my - m$ has two linear factors in *x* and *y* with integer coefficients is _____

1. -12 2. 0 3. -6 4. 6

28. Number of Edges in a cube is _____

1. 6 2. 8 3. 12 4. 14

29. Number of vertices in a cuboid is _____

1. $\frac{14}{2}$ 2. $\frac{16}{2}$ 3. $\frac{18}{2}$ 4. $\frac{20}{2}$

30. Which of the following is Euler's relation

1. $K + V = C + 2$ 2. $F + V = F + 2$ 3. $C + V = E + 2$ 4. $F + V = 2 + E$

31. Find the perimeter of a sector of a circle if the angle and radius of it are 30^0 and 10.5cm respectively.

1. 26. 5cm 2. 21.5 cm 3. 23cm 4. 8cm

32. Three cubes of sides 3cm, 4cm and 5cm respectively are melted and formed into a larger cube. Then the side of the cube formed_____

1. 7cm 2. 6 cm 3. 5 cm 4. 4 cm

33. The sum of the length, breadth and the height of a cubiod is 20cm and the length of its diagonal is 12cm. Find the total surface area of the cuboid.

1. 156 cm^2 2. 169cm^2 3. 256 cm^2 4. 269cm^2

34. The mean of first *n* natural numbers is $\frac{5n}{9}$. Find *n*.

1. 5 2. 4 3. 9 4. $\frac{n(n+1)}{2n}$

35. The median of 21 observations is 18. If two observations 15 and 24 are included to the observations, then the median of new series is

1. 15 2. 18 3. 24 4. 16

36. The upper class limit of inclusive type class interval 10-20 is

1. 10.5 2. 20 3. 20.5 4. 17.5

37. Find the mode of the following discrete series

x	1	3	5	6	12	15
f	5	7	3	8	6	5

1. 3 2. 12 3. 8 4. 6

38. If $x=2$ *and* $y=4$, *then* $\left(\frac{x}{y}\right)^{x-y}+\left(\frac{y}{x}\right)^{y-x}=$

1. 4 2. 8 3. 12 4. 2

39. If $p=3$ *and* $q=2$, *then* $(3p-4q)^{q-p}\div(4p-3q)^{2q-p}=$_____

1. 1 2. 6 3. $\frac{1}{6}$ 4. $\frac{2}{3}$

40. $\sqrt{11\sqrt{11\sqrt{11.....4terms}}}=$

1. $\sqrt[16]{11^5}$ 2. $\sqrt[16]{11}$ 3. $\sqrt[16]{11^{14}}$ 4. $\sqrt[16]{11^{15}}$

41. In an office 60% of the employees are women. 30% of the women employees have children and 20% of the men employees have children. The percentage of the employees have children is _____

1. 28% 2. 26% 3. 30% 4. 32%

42. Ajay sold two motorbikes for Rs 40000each. He sold one at 20% profit and the other at 20% loss. The profit or loss percentage in the whole transaction_____

1. 2% profit 2. 3% loss 3. 4% loss 4. No profit, no loss

43. A shopkeeper sells an article, whose cost price is Rs 500, for Rs 616 including a sales tax @x% and for a profit of Rs 50. Find x .

1. 8% 2. 10% 3. 12% 4. 90%

44. Vikram purchased a TV for Rs 13500 including sales tax. If the rate of sale tax is 8%, then the list price of the TV is _____(in Rs)

1. 13100 2. 12800 3. 12500 4. 11950

45. A sum of money at simple interest amounts to Rs 800 in 2 years and to Rs 1200 in 6 years. The sum is

1. Rs 600 2. Rs 1000 3. Rs 400 4. Rs 500

46. A sum of money invested at compound interest doubles itself in six years. The number of years will it become 64 times itself at the same rate of compound interest_____

1. 30 2. 36 3. 42 4. 48

47. If the compound interest on a certain sum of money for 2 years is Rs 3280. What would the corresponding simple interest be, given the rate of interest is 5% p.a.?

1. Rs 3150 2. Rs3200 3. Rs3100 4. Rs 3050

48. If $a:b=5:4$ *and* $b:c=16:25$, then $a:b:c$ is _____

1. 20 : 25 : 16 2. 25 : 20 : 16 3. 25 : 16 : 20 4. 20 : 16 : 25

49. If $qr:pr:pq=1:4:7$, then $\frac{p}{qr}:\frac{q}{pr}$ is _____

1. 4 : 1 2. 1 : 4 3. 1 : 16 4. 16 : 1

50. If $p:q:r:s=3:4:7:8$ *and* $p+s=55$, then $q+r$ is _____

1. 33 2. 55 3. 44 4. 66

51. If $a+b+c=0$ then $a^3+b^3+c^3=$_____

1. *abc* 2. 2abc 3. 3 abc 4. 4 abc

52. The remainder of x^2-4 when it divided by $x-2$

1. $x+2$ 2. $x-1$ 3. x 4. $2x$

53. If $2x+3y=10$ *and* $3x+2y=5$, then the value of $x+y$ is _____

1. 3 2. 4 3. 5 4. 6

54. If $\frac{1}{x+y}=\frac{1}{2}$ *and* $\frac{1}{x-y}=\frac{1}{3}$, then x = _____ and y =_____

1. $\frac{5}{2},-\frac{1}{2}$ 2. $\frac{1}{2},\frac{5}{2}$ 3. $\frac{2}{5},1$ 4. $\frac{1}{2},\frac{1}{2}$

55. Range of the scores 27, 35, 47, 36, 25 and *x* where *x* < 25 is 23, then *x* is _____

1. 23 2. 24 3. 25 4. 36

56. Mode of the scores 2, 3, 2, 4, 3, 2, 4, 6 is _____

1. 2 2. 3 3. 4 4. 6

57. If median of the scores $\frac{x}{2},\frac{x}{3},\frac{x}{4},\frac{x}{5}$ *and* $\frac{x}{6}$ (where *x* > 0) is 6 then $\frac{x}{6}$ is _____

1. 2 2. 4 3. 6 4. 8

58. If $p+q$ and p –q are the sides of a rectangle, then its diagonal is _____units

1. $\sqrt{2\left(p^2+q^2\right)}$ 2. $\sqrt{2\left(p^2-q^2\right)}$ 3. pq 4. $p+q$

59. If $x+5=8$ then *x* =_____

1. 3 2. 2 3. 1 4. 0

60. The radii of two spheres are 2 cm and 3 cm respectively. The ratio of their surface areas is _____

1. 4 :3 2. 9 : 4 3. 4 : 9 4. 3 : 2

PHYSICS

61. A coin is placed at the bottom of a swimming pool. To obtain a vertical shift of 20 cm of the image of the coin. The required height of the water column is_____.

$\left(\mu_{water}=\frac{4}{3}\right)$

1. 20 cm 2. 2 m 3. 80 m 4. 80 cm

62. Under which of the following conditions will a convex mirror of focal length '*f*' produce an image that is erect, diminished and virtual.

1. Only when $2f$ > u > f
2. Only u = f
3. Only when u < f
4. always

63. A concave lens of focal length '***f***' produces an image $\frac{1}{3}$ of the size of the object the distance of the object from the lens is

1. $2f$ 2. $\frac{3f}{2}$ 3. $4f$ 4. $\frac{2f}{3}$

64. Maximum density of H_2O is at the temperature

1. 32^0F 2. 39.2^0F 3. 42^0F 4. 4^0F

65. Then densities of two substances are in ratio 5: 6 and their specific heats are in the ratio 3: 5 then ratio of thermal capacities per unit volume is

1. 1: 2 2. 2: 1 3. 1: 4 4. 4: 1

66. The coolant used in car radiator is

1. Ethanol 2. Glycol 3. Water 4. Oil

67. A spherical ball of density 'ρ' is gently released in a liquid of density σ $(\rho > \sigma)$ the initial acceleration of the free fall of the ball will be

1. $\left(\frac{\rho+\sigma}{\rho}\right)g$ 2. $\left(\frac{\rho-\sigma}{\sigma}\right)g$ 3. $\left(\frac{\rho-\sigma}{\rho}\right)g$ 4. g

68. Assertion (A): Two bodies at different temperatures, if brought in thermal contact do not necessarily settle to the mean temperature.
Reason (R): The two bodies may have different thermal capacities.
1. Both A and R are the true and R is the correct explanation of 'A'.
2. Both A and R true but R is not correct explanation of 'A'.
3. A is true but R is false.
4. A is false but R is true.

69. All gases deviate from gas laws at
1. High pressures and low temperatures
2. Low temperatures and high temperatures
3. High pressures and high temperatures
4. Low pressures and low temperatures

70. A disc of paper of diameter'd' is floating on the surface of water of surface tension 'T'. Then the force of surface tension on the disc will be

1. $T\frac{\pi d}{2}$ 2. Tπd 3. T 2πd 4. $\frac{T}{\pi d}$

71. Match the following

List-I	**List-II**
a. Electron volt	e. 746 W
b. Kilowatt hour	f. 10^{-15} m
c. Horse power	g. 36×10^{6} J
d. Fermi	h. 1.6×10^{-19}J

1. a-h, b-g, c-e, d-f 2. a-h, b-f, c-g, d-e 3. a-g, b-h, c-e, d-f 4. a-h, b-g, c-e, d-h

72. A ball of mass 0.5 kg is dropped from certain height. As it falls through 2 m the kinetic energy acquired by it is

1. 9.8 J 2. $\sqrt{9.8}\,J$ 3. 1 J 4. 4.9 J

73. A force of 1 N acts on a body of mass 10 kg initially at rest for one minute. The amount of work done by that force is

1. 45 J 2. 90 J 3. 120 J 4. 180 J

74. Two charged particles having charges 10 μC and 50 μ***C*** are separated by a distance of 10 cm. The ratio of forces on them is

1. 1: 5 2. 5: 1 3. 1: 1 4. 1: 4

75. Two charges 8 μ***C*** and 2 μ***C*** are placed 10 cm apart. The intensity of electric field is zero at a point

1. 10 cm from - 2 μ***C*** on other side
2. 10 cm from 8 μ***C*** on other side
3. 5 cm from both charges
4. None

76. Electric potential at some point in space is zero. Then at that point

1. Electric intensity is necessarily zero
2. Electric intensity is necessarily non zero
3. Electric intensity is may or may not be zero
4. Electric intensity is necessarily infinite.

77. The current of LR circuit is reduced to half. What will be energy stored in it?

1. Four times 2. Two times 3. Half 4. One-fourth

78. A step down transformer the input voltage is 22 kV and the output voltage is 550 V the ratio of number of turns in the secondary to that in the primary is

1. 1: 20 2. 20 :1 3. 1: 40 4. 40: 1

79. A closely wound solenoid of 800 turns and area of cross section 2.5×10^{-4} m^2 carries a current of 3A. Magnetic moment associated with it is

1. 0.5 JT^{-1} 2. 0.3 JT^{-1} 3. 0.6 JT^{-1} 4. 0.8 JT^{-1}

80. The field inside a solenoid is

1. Directly proportional to its length
2. Directly proportional to current
3. Inversely proportional to the no. of turns
4. Inversely proportional to the current

CHEMISTRY

81. Which of the following is a noble gas?

1. Carbon 2. Neon 3. Hydrogen 4. Nitrogen

82. _____is generally used as a coolant in nuclear reactors

1. D_2O 2. H_2O_2 3. H_2O 4. D_2O_2

83.

Set–I	Set–II
1. negatively charge particle	a. neutron
2. neutral particle	b. electron
3. positively charged particle	c. electrically neutral
4. gamma rays	d. proton

1. 1–d,2–a,3–b,4–c 2. 1–b,2–a,3–d,4–c 3. 1–b,2–d,3–a,4–c 4. 1–c,2–d,3–a,4–b

84. Which of the following metals reacts with cold water to liberate hydrogen gas?

1. Aluminium 2. Zinc 3. Magnesium 4. Potassium

85. _____flame is used for cutting and welding metals

1. Oxy–nitrogen 2. Oxy–hydrogen 3. Oxygen 4. None of these

86. Removal of oxygen from a compound is called_____

1. Reduction 2. Oxidation 3. Redoxreaction 4. Dehydrogenation

87. The allotrope of carbon used for cutting hard objects is_____

1. Charcoal 2. Graphite 3. Diamond 4. Lampblack

88. When diamond is heated above 1500^{o}C in the absence of oxygen, it changes into

1. Graphite 2. Charcoal 3. Lamp black 4. Carbon dioxide

89. The shape of ____looks like a soccer ball.

1. Graphite 2. Diamond 3. Fullerence 4. charcoal

90. The froth floatation process is used for the concentration of

1. Oxide ores 2. Sulphide ores 3. Carbonate ores 4. Chloride ores

91. The metal present in amalgam is

1. Copper 2. Silver 3. Mercury 4. Gold

92. When 3gr of mg reacts with excess of dil HCl the weight of H_2 liberated is (atomic weight of Mg=24)

1. 1gr 2. 0.4gr 3. 0.25gr 4. 0.5gr

93. $\underset{(X)}{CuSO_4} + Zn \rightarrow ZnSO_4 + \underset{(Y)}{Cu}$ the color of X,Y respectively are

1. Red, blue 2. Blue, red 3. Green, black 4. Orange, red

94. A pure solvent can be obtained from its solution by

1. Boiling 2. Sedimentation 3. Distillation 4. None of these

95. Identify the pair which is a isotope?

1. ${}_1H^1$ and ${}_1H^2$ 2. ${}_{15}P^{32}$ and ${}_{16}S^{32}$ 3. ${}^{14}_{6}C, {}^{14}_{7}N$ 4. ${}^{31}_{15}P, {}^{32}_{16}S$

96. Which of the following is correct pair

1. ${}_{24}Cr - 4\,\text{unpaired electrons}$ 2. ${}_{15}P - 3\,\text{unpaired electrons}$

3. ${}_{16}Fe - 7\,\text{unpaired electrons}$ 4. ${}_{14}Si - 4\,\text{unpaired electrons}$

97. A mixture of carbon monoxide and nitrogen is called

1. Coal gas 2. Water gas 3. Producer gas 4. None of these

98. The____zone is the zone of no combustion of a candle flame

1. Blue zone 2. Yellow zone 3. Dark zone 4. Outer most zone

99. Fire produced by oil can be controlled by

1. Water 2. Nitrogen dioxide 3. Carbon dioxide 4. Sulphur dioxide

100. Arrange the following in the decreasing order of calorific value(KJ/Kg).[CNG,LPG,petrol, H_2]

1. H_2>CNG>petrol>LPG 2. H_2>LPG>CNG>petrol

3. LPG>CNG>petrol>H_2 4. CNG>LPG>Petrol>H_2

THE END