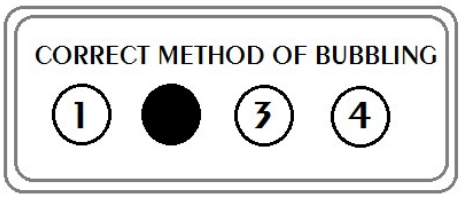
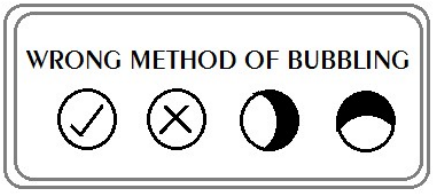
INSTRUCTIONS **NUMBER OF QUESTIONS : 100** **TIME : 2 Hrs**

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.





INTO 9TH CLASS ICSE

MATHEMATICS

1. Which of the following is not a rational number

   1) $1.\overline{3}$ 2) $\frac{5}{7}$ 3) $\sqrt{27}$ 4) $\sqrt{49}$

2. Inverse ratio of $\frac{1}{a}:\frac{1}{b}=$ _____

   1) $a:b$ 2) $b:a$ 3) $ab:1$ 4) $1:ab$

3. The product of $(x+2)(x-3)$ is _____

   1) x^2-5x-6 2) x^2-x-6 3) x^2+x-6 4) x^2+5x-6

4. Decimal form of $\frac{87}{32}$ is _____

   1) 2.7125 2) 2.71875 3) 2.18725 4) 2.77815

5. Which of the following is divisible by both 2 and 3 is _____

   1) 9604 2) 1764 3) 4096 4) 537

6. If $x > y$ *then* $\frac{1}{x}\square\frac{1}{y}$

   1) $>$ 2) $<$ 3) $=$ 4) $\geq$

7. If $(16)^x=\frac{1}{(128)^y}$ *then* $4x+7y+1=$ _____

   1) 0 2) 2 3) 1 4) 3

8. There are 100 students in a hostel. Food provision for them is 20days. How long will these provisions last, if 25 more students join the group is _____

1) 20 days 2) 18 days 3) 24 days 4) 16 days

9. If $A \cup B = \{1,2,3,4,5,6,7,8\}$ *and* $A \cap B = \{3,5,7\}$ then the maximum number of elements in the set B is _____

1) 3 2) 5 3) 8 4) Infinite

10. If $\frac{3x}{4} - 1 = \frac{x}{2} + 4$ then $x =$

1) 21 2) 20 3) 18 4) 22

11. In the parallelogram ABCD, if the internal bisectors of the consecutive angles A and B intersect at P then $\angle APB =$_____

1) 60 2) 80^0 3) 90^0 4) Can't say

12. If $P = \frac{4^x}{4^x + 2}$ then sum of the values of P when $x = \frac{1}{7}, \frac{6}{7}, \frac{1}{4}$ *and* $\frac{3}{4}$ *is* _____

1) 1 2) 2 3) $\frac{23}{4}$ 4) $\frac{43}{4}$

13. Radhika sold an article at a profit of 10%. If the cost price of it is ₹250 then selling price is _____

1) ₹225 2) ₹300 3) ₹275 4) ₹265

14. What is the smallest number that must be multiplied by 392 become perfect cube is _____

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

15. $\left(\frac{1}{2}\right)^{-2} + (2)^{-1} =$ _____

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

16. Certain sum is lent on interest compounded quarterly for $2\frac{1}{2}$ years then number of conversion periods is _____

1) 5 2) 7 3) 12 4) 10

17. Euler's formula is _____

1) $E + F - V = 2$ 2) $F + V = E - 2$ 3) $F + V = E + 2$ 4) $E + V = F + 2$

18. Factorise : $a - x + 1 - ax$

1) $(a-1)(1-x)$ 2) $(a+1)(1+x)$ 3) $(a+1)(1-x)$ 4) $(a-1)(x+1)$

19. $\sqrt{9604}$ =_____

1) 92 2) 88

3) 98 4) 9604 is not perfect square

20. If $A=\{2,4,6,8\}$ *and* $B=\{1,3,5,7\}$ then the sets A and B are called _____

1) Infinite sets 2) Empty sets 3)Disjoint sets 4) Overlapping sets

21. If $3:5=24:x$ then $x-5$ = _____

1) 40 2) 35 3)0 4) 10

22. $\frac{3}{15}$ is a _____decimal

1) Terminating 2) Non – terminating non repeating

3) Non-terminating repeating 4) Both 2 and 3

23. $\sqrt[3]{21+\sqrt{25+\sqrt{108+\sqrt{154+\sqrt{225}}}}}$ = _____

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

24. If M.P is ₹625 and S.P is ₹562.50 then the discount percentage is _____

1) 5% 2) ₹15% 3)20% 4) 10%

25. $\left(x+\frac{1}{x}\right)^2-4$ =_____

1) $x^2+\frac{1}{x^2}$ 2) $\left(x+\frac{1}{x}\right)^2$ 3) $\left(x-\frac{1}{x}\right)^2$ 4) $x^2-\frac{1}{x^2}$

26. 8100 is divisible by _____

1) Only 5 2) Only 3 3)2, 3 and 5 4) Only 2

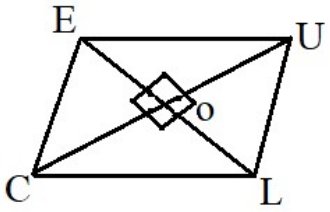
27. A train is moving at a uniform speed of 75km/hour then the distance travelled by it in 20minute is

1) 75km 2) 20km 3)25km 4) Data insufficient

28. If $2=x+\cfrac{1}{1+\cfrac{1}{3+\frac{1}{4}}}$ *then* x = _____

1) $\frac{12}{17}$ 2) $1\frac{4}{17}$ 3) $\frac{13}{17}$ 4) $1\frac{1}{17}$

29. CLUE is a rhombus. If OE = 4cm and CU is 5cm more than LE then OC is _____



1) 7cm 2) 6cm 3) 7.5cm 4) 6.5cm

30. The region bounded by an arc and two radii of a circle is called _____

1) Chord 2) Segment 3) Sector 4) Major arc

31. The perimeter of a triangle whose sides are $2y+3z, z-y$ *and* $4y-2z$ is _____

1) $4y+6z$ 2) $3y+2z$ 3) $5y-2z$ 4) $5y+2z$

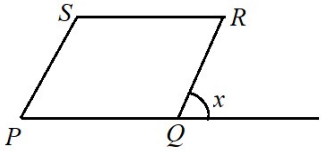
32. Subtract $5a-3b+2c$ *from* 4a-b-2c

1) $a+2b+4c$ 2) $-a+2b-4c$ 3) $a-2b-4c$ 4) $a-2b+4c$

33. Which of the following is not a rational number in between $\frac{2}{3}$ *and* $\frac{3}{4}$

1) $\frac{81}{120}$ 2) $\frac{11}{15}$ 3) $\frac{43}{60}$ 4) $\frac{13}{15}$

34. In the adjacent parallelogram PQRS, if $\angle S = 93^0$ *then* $x =$ _____



1) 93^0 2) 67^0 3) 87^0 4) 83^0

35. The simple interest on ₹1500 at the rate 10% (p.a) for 3 years is _____

1) ₹450 2) ₹550 3) ₹650 4) ₹350

36. If $a^2+b^2+c^2=2abc$ *then* $\left[2^{\frac{1}{ab}}\right]^c \times \left[2^{\frac{1}{bc}}\right]^a \times \left[2^{\frac{1}{ac}}\right]^b =$ _____

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

37. If $2-x \le 4$ then

1) $x \ge -6$ 2) $x \le -2$ 3) $x \ge 2$ 4) $x \ge -2$

38. If $A=\{2,3,4\}$ & $B=\{2,4,6\}$ then $A \cup B =$ _____

1) $\{2,3,4,5,6\}$ 2) $\{2\}$ 3) $\{3,5\}$ 4) $\{3,4,2,6\}$

39. Which of the following has factorisation $\left(a^2+\frac{1}{4}\right)\left(a+\frac{1}{2}\right)\left(a-\frac{1}{2}\right)=$ _____

1) $\left(a-\frac{1}{4}\right)^2$ 2) $a^8+\frac{1}{4}$ 3) $a^4-\frac{1}{16}$ 4) $a^4+\frac{1}{4}$

40. Which of the following is not a perfect square

1) 1225 2) 1024 3)676 4) 2028

41. If $1^2+2^2+2^2=3^2,\ 2^2+3^2+6^2=7^2, 3^2+4^2+12^2=13^2$ ….. then $6^2+7^2+42^2=$ ____

1) 41^2 2) 39^2 3) 43^2 4) 40^2

42. Which of the following is false

1) All rhombuses are kites 2) All rectangles are trapeziums

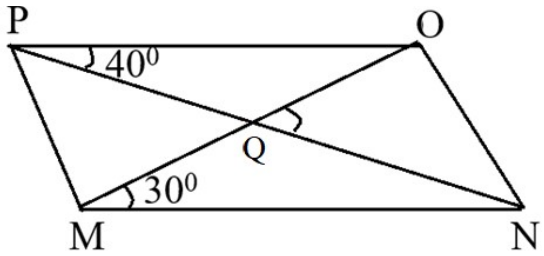
3) All square are rhombuses 4) All rhombuses are rectangles

43. Which quadrilateral has diagonals are perpendicular to each other

1) Square 2) Rhombus 3)Kite 4) All the above

44. MNOP is a parallelogram, diagonals MO and PN intersect at Q.

$\angle OPQ=40^0$ *and* $\angle OMN=30^0$ *then* $\angle OQN$ is _____



1) 110^0 2) 70^0 3)90^0 4) 120^0

45. Number of edges in a square pyramid is _____

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

46. $\left(\frac{2}{3}a^2b^2c^2-\frac{4}{3}ab^2c^2\right)\div\frac{1}{3}abc=$_____

1) $2(abc-2bc)$ 2) $2bc(a-2)$ 3) $abc-4bc$ 4) Both 1 and 2

47. Which of the following is correct , "if A is a set of prime numbers less than 10"

1) $A=\{1,2,3,4.....10\}$ 2) $A=\{2,3,5,7,9,10\}$

3) $A=\{2,3,5,7\}$ 4) $A=\{1,3,5,7,9\}$

48. In $\Delta ABC, \angle B=90^0$. If ΔABC is rotated about the side AB then the figure obtained is _____

1) Triangle 2) Circle 3)Pyramid 4) Cone

49. If 36 men can do a work in 25 days, in how many days will 15 men do it _____

1) 51 days 2) 72 days 3) 60 days 4) 48 days

50. A and B can do a piece of work in 12 days; B and C in 15 days; C and A in 20 days. In how many days will they finish it together is _____

1) 12 days 2) 10 days 3) 15 days 4) 8 days

ARITHMETIC AND LOGICAL REASONING QUESTIONS:

51. A is B's sister. C is B's mother. D is C's father. E is D's mother. Then, how is A related to D?

1) Grandmother 2) Grandfather 3) Daughter 4) Grand daughter

52. 1, 2, 2, 3, 3, 3, 4, 4, 4, 4,……. Then 149^{th} term is _____

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

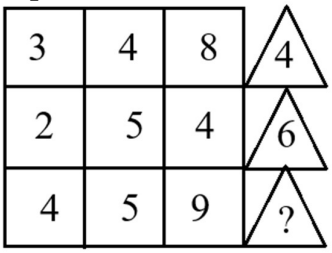
53. The average of first 100 natural numbers is _____

1) 50.5 2) 45.5 3) 40.5 4) 100

54. In the series 4, 7, 12, 19, 28, ? the next term is _____

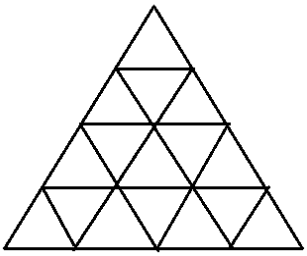
1) 30 2) 36 3) 39 4) 49

55. Choose the correct answer in the question mark?



1) 8 2) 9 3) 10 4) 11

56. Maximum number of triangles can possible in the adjacent figure



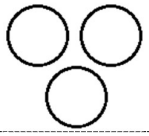
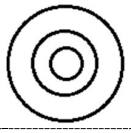
1) 22 2) 32 3) 27 4) 29

57. Choose the correct relation.

"Food : Stomach : : Fuel : _____?

1) Car 2) Engine 3) Train 4) Bike

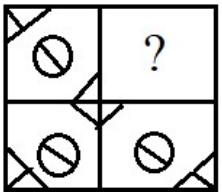
58. Which of the following figures represents parrots, birds and cats?

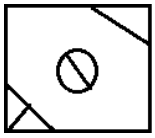
1)  2)  3)  4) 

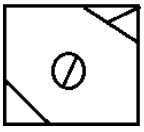
59. If actual time in clock is 08hours 26 minutes then what is the time shown in mirror is _____

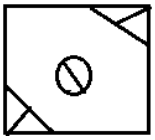
1) 6hrs 34 min 2) 3hrs 34min 3) 1hrs 34min 4) 3hrs 36min

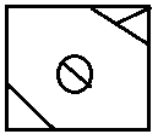
60. Complete the figure from the given below



1) 

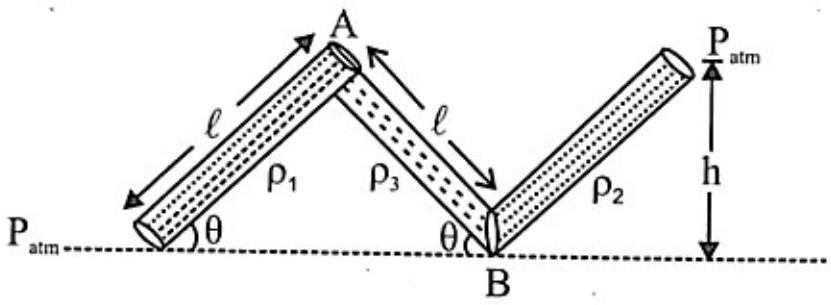
2) 

3) 

4) 

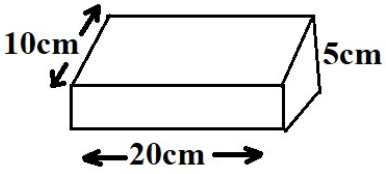
PHYSICS

61. Find out sin θ

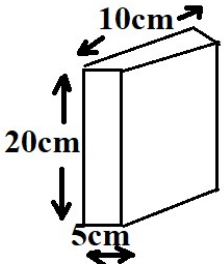


1) $\frac{\rho_2 h}{(\rho_3-\rho_1)\ell}$ 2) $\frac{\rho_1 h}{(\rho_3-\rho_2)\ell}$ 3) $\frac{\rho_3 h}{(\rho_2-\rho_1)\ell}$ 4) $\frac{\rho_2 h}{(\rho_1-\rho_3)\ell}$

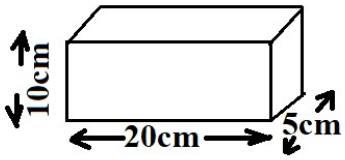
62. If we rank pressures in ascending order, which of them will have second ranking



(a)



(b)



(c)

1) b 2) a 3) c 4) a and b

63. An object is placed in a medium with a higher refractive index than the surrounding medium. What happens to the speed of light when it enters the denser medium?

1) Increases 2) Decreases

3) Remains the same 4) Depends on the wavelength

64. Which of the following factors does not affect the refractive index of a medium?

1) Density 2) Temperature

3) Colour of the light 4) None

65. In the experiment of refraction through a parallel glass slab

1) Incident ray and emergent ray are in same line

2) Incident ray and emergent rays has 180^0 deviation

3) The speed of both these rays may be different

4) Incident ray and emergent ray are parallel

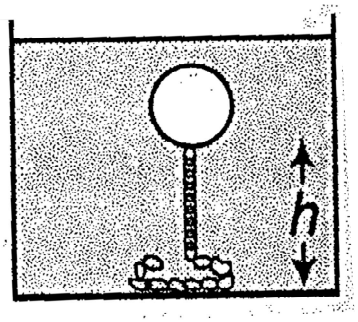
66. During dispersion in prism when light enters prism speed of _____

1) All colours is same

2) Some colours increase & some colours decrease

3) All colours decreases 4) None

67. One end of a long iron chain of linear mass density λ is fixed to a sphere of mass m and specific density 1/3 while the other end is free. The sphere along with the chain is immersed in a deep lake. If specific density of iron is 7, the height h above the bed of the lake at which the sphere will float in equilibrium is (Assume that the part of the chain lying on the bottom of the lake exerts negligible force on the upper part of the chain)



1) $\frac{16}{7}\frac{m}{\lambda}$ 2) $\frac{7m}{3\lambda}$ 3) $\frac{5m}{2\lambda}$ 4) $\frac{8m}{3\lambda}$

68. During sun rise & sun set, sun appears to be _____ in colour

1) Blue due to dispersion 2) Red due to dispersion

3) Red due to refraction 4) Red due to scattering

69. If the brick changes its position $(10cm \times 5cm \times 2.5cm)$ least area of contact to highest area of contact

1) Weight increases, pressure decreases 2) Weight decreases, pressure increases

3) Weight remains constant, pressure remains constant

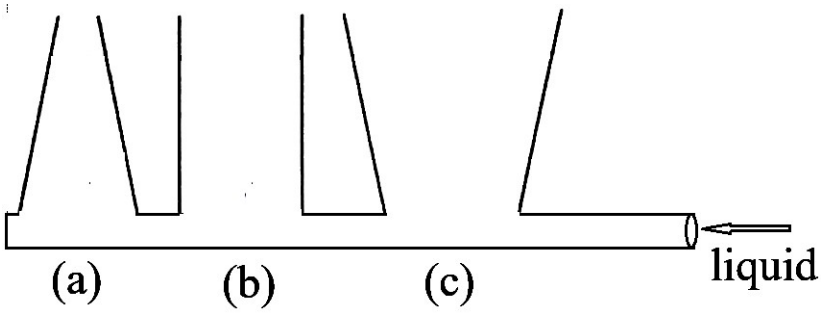
4) Weight remains constant and pressure decreases

70. Mano-meter is used to _____

1) Find pressure of gas 2) Difference of height of liquid

3) Only (a) is true 4) May be (a) and (b)

71. A, B, C are three vessels & liquid enters as shown in figure; than level of liquid rise in vessels

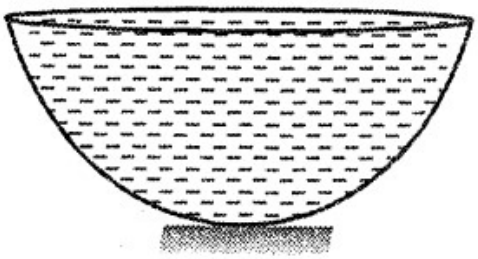


1) $A > B > C$ 2) $A = B > C$ 3) $A = B = C$ 4) $B > C > A$

72. In the application of Pascal's law on Hydraulic machine we _____

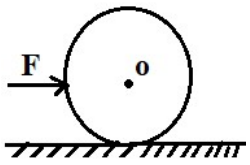
1) Increase the pressure by increasing area of piston
2) Increase force by increasing area of piston
3) Decrease pressure by decreasing area of piston
4) None

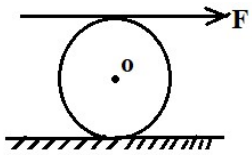
73. A bowl full of water has a bottom area $4cm^2$, and height 20cm. the volume of water in it is one litre. the force exerted by the sides of bowl on water is

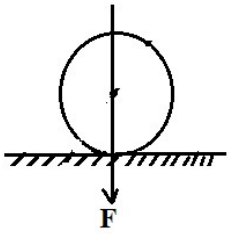


1)10N 2) 8N 3) 2N 4) 4N

74. Pick the diagram which creates turning effect

1) 

2) 

3) 

4) (1) or (3)

75. Conventionally, if the effect on the body is to turn it clock wise, moment of force is _____

1) Clockwise moment and taken in negative
2) Anticlockwise moment and taken positive
3) Clockwise moment and taken in positive
4) Anticlockwise moment and taken negative

76. To obtain a given moment of force for turning a body, the force needed can be decreased by:

1) applying the force at the pivoted point

2) applying the force very closed to the pivoted point

3) applying the force farthest from the pivoted point

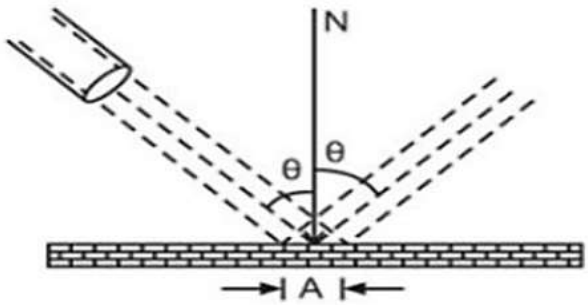
4) All the above.

77. Relation between kinetic and potential energies? (law of conservation)

1) K.E = PE 2) Increase in K.E = potential energy

3) Decreasing P.E = decreasing K.E 4) Decreasing P.E = Increase in K.E

78. 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) $2nmv^2\sin^2\theta$

79. Find the increase in kinetic energy of a body of mass 500 g, when its speed increases from 2 m s^{-1} to 4 m s^{-1}

1) 1J 2) 2J 3)3J 4) 6J

80. An electric heater of power 3 kW is used for 1 minute. Find the energy supplied by the heater

1) 160000J 2) 180000J 3)170000J 4) 150000J

CHEMISTRY

81. Which of the following statement is false with respect to the law of conservation of mass

1) Matter is neither created nor destroyed during a chemical reaction

2) There is no change in mass during a Chemical reaction

3) The mass of products equals the mass of the reactants in a chemical reaction

4) There is a change in mass during a chemical reaction

82. The reaction is which energy is evolved is called _____

1) Exothermic reaction 2) Endothermic reaction

3) Decomposation reaction 4) Displacement reaction

83. A mixture of sand and Ammonium chloride separated by

1) Filtration 2) Distillation 3) Sublimation 4) Crystallization

84. Which of the following technique is used to separate carbon tetrachloride and water

1) Evaporation 2) Filtration 3) Separating funnel 4) Distillation

85. The sum of number of protons and number of neutrons present in the nucleus of an atom is called its

1) Mass number 2) Atomic number

3) Number of electrons 4) Number of neutrons

86. If the atomic number of an atom is 17 and mass number is 35, the number of neutrons will be

1) 35 2) 17 3) 18 4) 52

87. What is the chemical formula of Baking soda

1) Na_2CO_3 2) $NaHCO_3$ 3) HNO_3 4) $BaSO_4$

88. Two compounds exchange their positive and negative radicals respectively. This type of reaction called

1) Combination reaction 2) Decomposation reaction

3) Displacement reaction 4) Double displacement reaction

89. Which of the following is a chemical change

1) Burning of magnesium ribbon in air 2) Freezing of water

3) Evaporation of water 4) Tearing of paper

90. What did Rutherford conclude from his alpha particle scattering experiment

1) The mass of the atom is evenly distributed

2) The size of the nucleus is larger than that of the atom

3) Most of the space inside the atom is empty

4) Electrons are located in the nucleus

91. What is the chemical formula of calcium phosphate

1) $Ca(PO_4)_2$ 2) $Ca_3(PO_4)_2$ 3) Ca_3PO_4 4) $Ca_2(PO_4)_3$

92. Boiling point of liquid A is 25^0C and that of Liquid B is 40^0 which technique will you use to separate these miscible liquids.

1) Simple distillation 2) using a separating funnel

3) Centrifugation 4) Fractional distillation

93. The catalyst and promotor respectively used in the Haber process of industrial synthesis of ammonia

1) Mo, V_2O_5 2) V_2O_5, Fe 3) Fe, Mo 4) Mo, Fe

94. (i) Copper does not displace zinc from zinc sulphate

(ii)Zinc can displace copper from copper sulphate

What do you notice from the above two sentences

1) High reactive metals can displace less reactive metals from its compound

2) High reactive metals cannot displace less reactive metals from its compound

3) Displacement takes place when reactivity of both the metals are equal

4) Less reactive metals can displace high reactive metals from its compound

95. According to the law of conservation of mass, 3gm of carbon burnt in 8gm of oxygen forms 11gm of carbon dioxide. Now that will be the mass of carbondioxide produced when 3gm of carbon is burnt in 50gm of oxygen

1) 45gm 2) 47gm 3) 53gm 4) 50gm

96. Rutherford experiment which established the nuclear model of the atom a beam of

1) $\beta-$ particle which impinged on a metal foil and get absorbed

2) γ - rays which impinged on a metal foil and ejected electrons

3) Helium atoms which impinged on a metal ejected got scattered

4) Helium nuclei which impinged on a metal foil and got scattered

97. The valence in third row elements

1) Gradually increase from Na to Ar 2) Gradually decreases Na to Ar

3) Gradually increases from Na to Si and then decreases from Si to Ar

4) Remains constant

98. An enzyme which changes cane sugar into glucose and fructose is known as

1) Zymase 2) Maltase 3) Invertase 4) Diastase

99. What is the amount of CO_2 formed when 10gms of $CaCO_3$ is strongly heated.

1) 2.2gm 2) 4.4gm 3) 6.6gm 4) 8gm

100. Boron has two stable isotopes, $^{10}B(19\%)$ and $^{11}B(81\%)$. Average atomic weight for Boron in the periodic table is

1) 10.8 2) 10.1 3) 11.2 4) 10.5

THE END