X - CHEMISTRY LN - 1 ATOMS AND MOLECULES PART –II TEST – 2

1. Which of the following correctly represent 360g of water?
   i) 2 moles of H₂O
   ii) 6.022 x 10²³ molecules of water
   a) I
   b) I and ii
   c) ii and iii
   d) ii and iv

2. Total number of atoms in 44g of CO₂ is
   a) 6.02x10²³
   b) 6.02x10²⁴
   c) 1.806x10²⁴
   d) 18.06x10²²

3. The number of particles present in one mole of any substance is equal to
   a) 6.022x10²³
   b) 6.022x10²³
   c) 6.022x10²⁴
   d) 6.022x10²²

4. Find the mass percentage of hydrogen in the composition of methane (CH₄)
   a) 20%
   b) 25%
   c) 30%
   d) 45%

5. Avogadro’s hypothesis is related to
   a) Volume & temperature
   b) temperature & pressure
   c) Volume & molecule
   d) volume & mass

6. The value of gram molar volume is
   a) 22.4 litre
   b) 11.2 litre
   c) 22400 cm³
   d) both a & c

7. Calculate the mass of sucrose (C₁₂H₂₂O₁₁)
   a) 108g
   b) 227g
   c) 342g
   d) 242g

8. Calculate the gram molecular mass of Ca(PO₄)₂
   a) 230g
   b) 342g
   c) 180g
   d) 530g

9. What is the mass of carbon dioxide will contain 3.011x10²³ molecules?
   a) 22g
   b) 44g
   c) 22.4 litre
   d) 42g

10. Mass of 3 moles of NaOH in grams
    a) 40g
    b) 140g
    c) 120g
    d) 80g

11. The atomic mass of sodium is 23. The numbers of moles in 46g of sodium are.
    a) 2 mole
    b) 1 mole
    c) 0.5 mole
    d) 3 mole

12. One mole of any substance contains 6.023 x 10²³ particles. If 3.0115 x 10²³ particles are present in CO₂, find the number of moles.
    a) 0.25 mole
    b) 0.5 mole
    c) 1 mole
    d) 2 mole

13. Calculate the number of moles in 27.95g of iron
    a) 0.5 mole
    b) 0.25 mole
    c) 1 mole
    d) 2 mole

14. Calculate the number of water molecules present in one drop of water which weighs 0.18 g.
    a) 6.023 x 10²³ molecules
    b) 6.023 x 10²¹ molecules
    c) 6.023 x 10²³ molecules
    d) 6.023 x 10²³ atoms

15. How many grams are there in 5 moles of Glucose
    a) 180g
    b) 342g
    c) 780g
    d) 900g

16. Calculate the percentage composition of sulphur in H₂SO₄
    a) 68.35%
    b) 32.65%
    c) 50%
    d) 11.11%

17. Calculate the number of molecules in 54g of H₂O
    a) 6.023 x 10²³
    b) 18.069 x 10²³
    c) 24.092 x 10²³
    d) 3.0115 x 10²³

18. Calculate the number of molecules in 67.2 litre of CO₂ at S.T.P
    a) 6.023 x 10²³
    b) 3.011 x 10²³
    c) 24.092 x 10²³
    d) 18.069 x 10²³

19. Find the mass of aluminium in 0.3 mole (atomic mass of Al = 27)
    a) 81g
    b) 8.1g
    c) 27g
    d) 2.7g

20. Pick out the relationship between vapour density and relative molecular mass.
    a) Vapour density = relative molecular mass
    b) V.D = ½ relative molecular mass
21. List – i  list – ii
a) 0.25 mole oxygen - i) $6.022 \times 10^{23}$ molecules
b) 18g of water - ii) $1.505 \times 10^{23}$ molecules
c) 46g of Na atom - iii) $6.022 \times 10^{23}$ atoms
d) 1 mole C atom - iv) $12.046 \times 10^{23}$ atoms

22. List – i  list – ii
a) $K_2CO_3$ - i) 762u
b) $Na_2O$ - ii) 138u
c) $HNO_3$ - iii) 64u
d) $SO_2$ - iv) 63u

23. The number of moles of water present in 180g of water will be
a) 5 moles  b) 10 moles  c) 2 moles  d) 1 mole

24. The atomicity of $K_2Cr_2O_7$ is
a) 9  b) 11  c) 10  d) 12

25. All noble gas molecules are
a) Monoatomic  b) Diatomic  c) Triatomic  d) Both I and II

26. The formula of ethanol is $C_2H_5 – OH$. What will be its molecular mass?
a) 42 u  b) 34 u  c) 34 g  d) 46 g

27. Number of moles present in 28g of nitrogen atoms are
a) 1 mole  b) 2.3 moles  c) 0.5 mole  d) 2 moles

28. The molecular mass of X is 106. X can be
a) $CaCO_3$  b) $SO_3$  c) $Na_2CO_3$  d) $NaCl$

29. Which among the following is not a postulate of Dalton’s atomic theory?
   a) Atoms cannot be created or destroyed
   b) Atoms of different elements have different sizes, masses and chemical properties
   c) Atoms of same elements can combine in only one ratio to produce more than any one Compound
   d) Atoms are very tiny particles which cannot be further divided

30. Which of the following is a wrong Combination?
   a) $6.022 \times 10^{23}$ molecules of oxygen = 32g of oxygen
   b) $6.022 \times 10^{23}$ ionic sodium = 23g of sodium
   c) $6.022 \times 10^{23}$ atoms of C = 24g of carbon
   d) $6.022 \times 10^{23}$ atoms of H = 1g of hydrogen atoms

31. To determine mass of other compound by comparing it with mass of carbon-12 atoms is
   a) relative molecular mass  b) relative atomic mass
   c) relative molecular radius  d) relative atomic radius

32. A(r) is symbol given for
   a) relative molecular mass  b) relative atomic mass
   c) relative atomic radius  d) both A and B

33. 6.023x10^{23} atoms of Sulphur contains
   a) 2 moles  b) 3 moles  c) 4 moles  d) 1 mole

34. 1 mole of substance refers to
   a) proton mass  b) atomic mass  c) electron mass  d) neutron mass
Answer key

1. D 10. B 21. A) ii b) i c) iv d) iii
2. A 11. A 22. a) ii b) i c) iv d) iii
5. C 14. B 25. a
7. C 16. B 27. d
8. A 17. B 28. c
9. A 18. D 29. c
11. A 20. D 31. a
12. B 21. A) ii b) i c) iv d) iii 32. c
13. A 22. a) ii b) i c) iv d) iii 33. d
15. D 27. d
23. b
24. b
25. a
26. d
27. d
28. c
29. c
30. c
31. a
32. c
33. d
34. b

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