Chemical stoichiometry

1. How much of *NaOH* is required to neutralise 1500 cm^3 of 0.1 $NHCl$ (*Na* = 23)

   (a) 40 *g* (b) 4 *g*

   (c) 6 *g* (d) 60 *g*

2. How much water should be added to 200 c.c of semi normal solution of $NaOH$ to make it exactly deci normal

   (a) 200 *cc* (b) 400 *cc*

   (c) 800 *cc* (d) 600 *cc*

3. 2.76 *g* of silver carbonate on being strongly heated yield a residue weighing

   (a) 2.16 *g* (b) 2.48 *g*

   (c) 2.64 *g* (d) 2.32 *g*

4. In the reaction, $4NH_3(g) + 5O_2(g) \rightarrow 4NO(g) + 6H_2O(g)$, When 1 mole of ammonia and 1 mole of O_2 are made to react to completion

   (a) 1.0 mole of H_2O is produced

   (b) 1.0 mole of NO will be produced

   (c) All the oxygen will be consumed

   (d) All the ammonia will be consumed

5. Haemoglobin contains 0.33% of iron by weight. The molecular weight of haemoglobin is approximately 67200. The number of iron atoms (At. wt. of *Fe* = 56) present in one molecule of haemoglobin is

   (a) 6 (b) 1

   (c) 4 (d) 2

6. What quantity of ammonium sulphate is necessary for the production of NH_3 gas sufficient to neutralize a solution containing 292 *g* of HCl? [*HCl*=36.5; $(NH_4)_2SO_4$ =132; NH_3=17]

   (a) 272 *g* (b) 403 *g*

   (c) 528 *g* (d) 1056 *g*

7. The percentage of P_2O_5 in diammonium hydrogen phosphate $(NH_4)_2HPO_4$ is

   (a) 23.48 (b) 46.96

   (c) 53.78 (d) 71.00

8. If $1\frac{1}{2}$ moles of oxygen combine with *Al* to form Al_2O_3 the weight of *Al* used in the reaction is (*Al*=27)

   (a) 27 *g* (b) 54 *g*

(c) 49.5 *g* (d) 31 *g*

9. The percentage of *Se* in peroxidase anhydrous enzyme is 0.5% by weight (atomic weight=78.4). Then minimum molecular weight of peroxidase anhydrous enzyme is

(a) 1.568×10^4 (b) 1.568×10^3

(c) 15.68 (d) 3.136×10^4

10. H_2 evolved at STP on complete reaction of 27 *g* of Aluminium with excess of aqueous $NaOH$ would be

(a) 22.4 (b) 44.8

(c) 67.2 (d) 33.6 *litres*

11. What is the % of H_2O in $Fe(CNS)_3.3H_2O$

(a) 45 (b) 30

(c) 19 (d) 25

12. What weight of SO_2can be made by burning sulphur in 5.0 moles of oxygen

(a) 640 *grams* (b) 160 *grams*

(c) 80 *grams* (d) 320 *grams*

13. What is the normality of a 1 *M* solution of H_3PO_4

(a) 0.5 *N* (b) 1.0 *N*

(c) 2.0 *N* (d) 3.0 *N*

14. Normality of 2*M* sulphuric acid is

(a) 2*N* (b) 4*N*

(c) $\frac{N}{2}$ (d) $\frac{N}{4}$

15. How many *g* of a dibasic acid (Mol. wt. = 200) should be present in 100 *ml* of its aqueous solution to give decinormal strength

(a) 1 *g* (b) 2 *g*

(c) 10 *g* (d) 20 *g*

16. The solution of sulphuric acid contains 80% by weight H_2SO_4 . Specific gravity of this solution is 1.71. Its normality is about

(a) 18.0 (b) 27.9

(c) 1.0 (d) 10.0

17. Mohr's salt is dissolved in dil. H_2SO_4 instead of distilled water to

(a) Enhance the rate of dissolution

(b) Prevent cationic hydrolysis

(c) Increase the rate of ionisation

(d) Increase its reducing strength

18. Acidified potassium permanganate solution is decolourised by

(a) Bleaching powder

(b) White vitriol

(c) Mohr's salt

(d) Microcosmic salt

19. Approximate atomic weight of an element is 26.89. If its equivalent weight is 8.9, the exact atomic weight of element would be

(a) 26.89 (b) 8.9

(c) 17.8 (d) 26.7

20. Vapour density of a gas is 22. What is its molecular mass

(a) 33 (b) 22

(c) 44 (d) 11