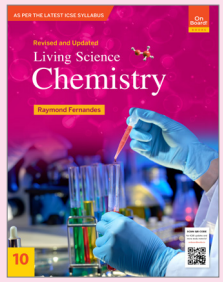
ICSE Living Science CHEMISTRY

Class 10



Multiple-Choice Questions

CHAPTER 11: STUDY OF COMPOUNDS – SULPHURIC ACID

1. Sulphuric acid is called the oil of vitriol because it was first prepared by the dry distillation of
   (a) green vitriol ($FeSO_4 \cdot 7H_2O$).
   (b) green vitriol ($FeSO_4 \cdot 6H_2O$).
   (c) green vitriol ($FeSO_4 \cdot 5H_2O$).
   (d) green vitriol ($FeSO_4 \cdot 4H_2O$).
   Ans: a

2. In the combined form, sulphuric acid is present as metallic sulphates like
   (a) barytes (barium sulphate, $BaSO_4$).
   (b) gypsum ($CaSO_4 \cdot 2H_2O$).
   (c) aluminium sulphate [$Al_2(SO_4)_3$].
   (d) all of these.
   Ans: d

3. In which of the following methods, sulphur dioxide cannot be converted to sulphuric acid?
   (a) Oxidizing moist sulphur dioxide
   (b) Passing sulphur dioxide through chlorine water or bromine water
   (c) Oxidizing non-metal sulphates
   (d) Reaction of sulphur trioxide with water
   Ans: c

4. Industrially, the main method for the preparation of sulphuric acid is ..... process.
   (a) Haber-Bosch
   (b) Ostwald
   (c) Hoope's
   (d) Contact
   Ans: d

5. Most of the fly ash and dust particles present in the gaseous mixture of O_2 and SO_2 can be removed by
   (a) scrubber.
   (b) electrostatic precipitator.
   (c) drying chamber.
   (d) washing tower.
   Ans: b

6. V_2O_5 is preferred over platinum as a catalyst in the Contact process because
   (a) it is easily available.
   (b) it is high in efficiency.
   (c) it is less susceptible to poisoning by impurities like arsenic.
   (d) it cannot be denatured.
   Ans: c

7. The formula of oleum is

(a) $H_2S_2O_7$ (b) $H_3S_2O_7$

(c) $H_2S_3O_7$ (d) $H_2S_2O_8$

Ans: a

8. Oleum is diluted by adding a calculated amount of ..... to H_2SO_4 to get the desired strength of acid.

(a) hydrogen (b) nitrogen

(c) sulphur (d) water

Ans: d

9. The temperature for the catalytic conversion of sulphur dioxide (SO_2) to sulphur trioxide (SO_3) should be maintained between

(a) 350 °C and 400 °C. (b) 450 °C and 500 °C.

(c) 250 °C and 300 °C. (d) 150 °C and 200 °C.

Ans: b

10. Presence of excess amounts of ..... increases the production of sulphur trioxide.

(a) sulphur (b) nitrogen

(c) oxygen (d) hydrogen

Ans: c

11. As sulphuric acid forms a constant ....., it cannot be concentrated by boiling or distillation beyond a certain concentration.

(a) boiling mixture (b) melting mixture

(c) condensing mixture (d) vaporising mixture

Ans: a

12. Pure sulphuric acid does not ....., and hence, does not show any acidic properties.

(a) dissociate (b) condense

(c) melt (d) ionize

Ans: d

13. Sulphuric acid is a ..... acid.

(a) monobasic (b) dibasic

(c) tribasic (d) tetrabasic

Ans: b

14. Sulphuric acid ..... oxides and hydroxides of metals to form their corresponding salts and water.

(a) neutralizes (b) oxidizes

(c) reduces (d) ionizes

Ans: a

15. Sulphuric acid forms the acid salt when there is ..... alkali.

(a) sufficient (b) excess

(c) insufficient (d) less

Ans: c

16. Sulphuric acid reacts with soluble salts of lead, barium and calcium to form their insoluble .....

(a) sulphides. (b) sulphites.

(c) chlorides. (d) sulphates.

Ans: d

17. Concentrated sulphuric acid is a powerful ..... agent.

(a) dehydrating
(b) hydrating
(c) hydrogenating
(d) dehydrogenating

Ans: a

18. $Cu + 2H_2SO_4 \rightarrow CuSO_4 + 2H_2O +$ .....

(a) S
(b) SO_2
(c) SO_3
(d) H_2S

Ans: b

19. Dilute sulphuric acid can be distinguished from dilute hydrochloric acid and dilute nitric acid through ..... solution.

(a) calcium chloride
(b) cuprous chloride
(c) sodium chloride
(d) barium chloride

Ans: d

20. Cleaning of metal surfaces by the removal of metallic impurities (oxides and carbonates) before electroplating is called .....

(a) seeding.
(b) galvanizing.
(c) pickling.
(d) purifying.

Ans: c