

(g) Give example each of inorganic and organic scintillator.

(h) and are used in the treatment of cyanide poisoning.

2. Answer any six of the following : $3 \times 6 = 18$

(a) Briefly discuss the dehydration product of boric acid.

(b) How sodium hydroxide is prepared by the electrolysis process ?

(c) What do you mean by isotonic and hypotonic solutions ?

(d) Give the WHO recommended composition of oral rehydration salts (ORS) solutions.

(e) Give two important mechanisms by which antioxidant action may be achieved.

(f) Briefly discuss the biological effects of radiation.

(g) What is the importance of thioglycolic acid in the limit test of iron ?

(h) How expectorants act upon the respiratory tract ?

3. Answer any eight of the following questions :

$5 \times 8 = 40$

(a) What is buffer capacity ? Write down the preparation and properties of hydrochloric acid. $1+4=5$

(b) Discuss in brief the theory of redox reaction. Give the properties of hypophosphorous acid. $3+2=5$

(c) Derive the Henderson-Hasselbach equation of pH of an alkaline buffer. 5

(d) Write the preparation and uses of sodium bicarbonate. $3+2=5$

(e) What are the different classes of adsorbent-protective agents ? Give a method of preparation of potassium permanganate. $3+2=5$

(f) Give the difference between physiological, chemical and mechanical antidotes. What is the antidote used in mercury salts poisoning ? $4+1=5$

(g) Write a note on electrolyte imbalance and replacement therapy. 5

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(2)

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(h) What are the various uses of astringents ?
Give the use of strontium chloride. $4+1=5$

(i) Write a short note on sclerosing agents. 5

(j) Give the preparation and uses of potassium iodide. $2\frac{1}{2}+2\frac{1}{2}=5$

4. Answer any *three* of the following questions :

$10 \times 3 = 30$

(a) Discuss the preparation, properties and uses of ammonium chloride and sodium chloride.

$5+5=10$

(b) How physiological acid-base balance is maintained by renal and respiratory mechanism ? Write a note on clinical applications and dosage of inorganic radio-pharmaceuticals.

$5+5=10$

(c) What are the various detectors commonly used for radiation detection and measurements ? Describe the working principle of Geiger-Muller counter with diagrammatic representation.

$3+7=10$

(d) Describe the various sources of impurities in pharmaceutical chemicals. What do you mean by aqueous and weak iodine solutions as per B.P / I.P ?

$3+2=10$

