Instructions –

(1) All Questions are **Compulsory**.
(2) Answer each next main Question on a new page.
(3) Illustrate your answers with neat sketches wherever necessary.
(4) Figures to the right indicate full marks.
(5) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. **Answer any FIVE of the following:** 20

   a) Give synonyms and molecular formula for:
      
      (i) Boric acid
      
      (ii) Calcium hydroxide

   b) Define and classify GI agents with example.

   c) Explain Lewis acid-base theory with examples.

   d) Define different terminologies as antimicrobial agents.

   e) Discuss importance of Radioisotopes in pharmacy.

   f) Enlist four official antioxidants.

   g) Define buffer. Explain importance of Pharmaceutical buffer.

   h) Why glycerin is used in assay of boric acid? Explain with reactions.
2. **Answer any THREE of the following:**

   a) Define and classify antidotes.

   b) Give mechanism of action of antioxidants and mention the properties and uses of sodium thiosulphate.

   c) Explain the reaction and principle behind limit test for chloride.

   d) Discuss Arrhenius acid-base theory with example and list limitations for it.

   e) Explain the role of sodium ions as major extra cellular electrolyte.

3. **Answer any THREE of the following:**

   a) “Andtacids are preffered in combination therapy” Why?

   b) Define achlorhydria. Explain acidifying agent with its formula and uses.

   c) Enlist four official compounds of Iron.

   d) Discuss any four different sources of Impurities in Pharmaceuticals.


4. **Answer any THREE of the following:**

   a) Name and draw well-labelled diagram of apparatus used in limit test for Arsenic.

   b) Define cathartics and mention different types of cathartics with examples.

   c) Define topical agents. Discuss mechanism of action of topical antimicrobials.

   d) Give properties and uses of:

      (i) Sodium nitrite

      (ii) Aluminium hydroxide gel

   e) Give chemical formula for (any two)

      (i) Hypophosphorus acid

      (ii) Calcium carbonate

      (iii) Sodium hydroxide

      (iv) Nitrous oxide
5. **Answer any THREE of the following:**

a) What is oral rehydration salt (ORS)? Give details of formulations of it.

b) Give storage and labeling of:
   (i) Oxygen
   (ii) Carbon dioxide

c) Explain the following term with examples:
   (i) Anticaries agents
   (ii) Desensitizing agents

d) Discuss the applications of Astringents. Give properties of alum.

e) Explain the reaction and principle involved in the assay of Hydrogen Peroxide.

6. **Answer any THREE of the following:**

a) Explain Physiological acid base balance.

b) Define expectorant. Give properties and uses of ammonium chloride.

c) Give properties and uses of calcium hydroxide and ferrous sulphate.

d) Explain the principle and reaction involved in Iron limit test I.P.

e) Give two identification tests for (any two)
   (i) Chloride ion
   (ii) Calcium ion
   (iii) Sodium ion
   (iv) Acetate ion