III. Short answers (Answer seven out of nine questions)

5x7=35

1. Define antacid. What are the qualities of an ideal antacid? Discuss various combinations of antacid.
   1+2+2 = 5

2. What do you mean by antidote? Discuss the role of sodium nitrite and sodium thiosulphate as antidote.
   1+4 = 5

3. Write the principle and procedure involved in limit test for arsenic.
   3+2 = 5

4. What is expectorant? Explain mechanism of action of expectorants in details.
   1+4 = 5

5. Define astringent? How astringents form protective layer on skin? Give some examples of astringent with their method of preparation.
   1+2+2 = 5

6. What is half-life of a radioisotope? Explain the diagnostic and therapeutic applications of radioisotopes in details.
   1+(2+2) = 5

7. What are haematinics? Discuss the properties, method of preparation and pharmaceutical applications of ferrous gluconate.
   1+(1+2+1) = 5

8. Explain various types and sources of impurities in pharmaceutical preparations.
   2+3=5

9. Discuss how the physiological acid-base balance is regulated inside our body.
   5

★★★

UG Odd Semester (CBCS) Examination, March 2023

PHARMACEUTICAL SCIENCES

(1st Semester)

Course No: BP 104T

(Pharmaceutical Inorganic Chemistry-Theory)

Full Marks: 75

Time: 3 Hours

The figures in the margin indicate full marks for the questions

I (A). Multiple choice questions   1x10=10

1. Constipation is associated with which of the following antacid preparation?
   a) Calcium containing antacid
   b) Aluminium containing antacid
   c) Both (a) and (b)
   d) Magnesium containing antacid

2. According to Bronsted-Lowry concept, an acid is-
   a) Proton donor
   b) Electron donor
   c) Proton acceptor
   d) Electron acceptor

3. In ointments and creams which of the following buffer is used?
   a) Borate
   b) Phosphate
   c) Chlorate
   d) Citric acid

4. Hypocalcemia is a condition in which there is
   a) Decreased calcium level in the body
   b) Increased calcium level in the body
   c) Decreased potassium level in the body
   d) Decreased chlorine level in the body

5. Peppermint is used in dentifrices as
   a) Sweetening agents
   b) Colouring agents
   c) Flavouring agents
   d) Therapeutic agents

6. Which of the following buffer system plays a crucial role in maintaining physiological acid–base balance?
   a) Phosphate buffer system
   b) Bicarbonate buffer system
   c) Protein buffer system
   d) None of the above

7. _____ helps in preventing dental carries. Fill in the blank with the following-
   a) Magnesium
   b) Chloride
   c) Fluoride
   d) None of the above

8. Which of the following is also known as universal antidote?
   a) Activated charcoal
   b) Sodium nitrite
   c) Sodium thiosulphate
   d) Disulfiram

9. In limit test of sulphate, small quantity of potassium sulphate is used for-
   a) Super saturation
   b) Increasing sensitivity

   c) Precipitation
   d) Acidification

10. Porphyrin is the core scaffold of which of the following structure?
   a) Heme
   b) Globin
   c) Ferrous sulphate
   d) Ferrous gluconate

I (B). Objective type (Answer the following in brief)

2x5=10

1. What are the therapeutic uses of astringents?
2. Differentiate between cathartics and purgatives.
3. Why emetics are used in poisoning?
4. Classify poison.
5. Write the structure of heme.

II. Long answers (Answer two out of three questions)

10x2=20

1. What are antimicrobial agents? Explain in details about the classification and mechanism of action of various inorganic antimicrobial agents. 2+(2+6) = 10

2. Define dentifrice and write in details about the composition of dentifrices. Explain the role of fluoride in prevention of dental caries.   (1+4)+5 = 10

3. Explain the mechanism of buffer activity of acidic and alkaline buffer. Deduce the Henderson-Hasselbalch equation for calculation of pH for acidic and alkaline buffer solutions.
   (2.5+2.5)+(2.5+2.5) = 10