FIRST YEAR PHARMACY

PHARMACEUTICAL CHEMISTRY - I

(102)

Time : Three Hours ***Maximum Marks : 80***

Note : i) Attempt total *six* questions. Question No.**1** is compulsory. From the remaining questions attempt any *five*.

ii) Illustrate your answer with neat sketches wherever necessary.

1. Define any five of the following with examples. 10
   a) Astringents
   b) Antacids
   c) Intracellular electrolytes
   d) Buffers
   e) Expectorants
   f) pH

2. Solve any four of the following: 14
   a) Explain the Bronsted acid-base theory. What is Conjugate Acid? What is Conjugate base?
   b) What are Antioxidants? Give mechanism of action of antioxidants with examples.
   c) Give properties and uses of any two:
      i) Boric acid
      ii) Phosphoric acid
      iii) Sodium carbonate

d) Define and classify Buffers. Explain Buffer capacity.

e) Write the identification test of the following:
   i) Chloride ii) Strontium

3. Solve any four of the following: 14
   a) Explain Achlorhydria. Give properties and uses of agents used to treat Achlorhydria.
   b) Give properties and uses of the following:
      i) Magnesium hydroxide
      ii) Sodium bicarbonate
   c) Explain respiratory stimulants with examples. Write the properties and uses of ammonium carbonate.
   d) Explain the action of sodium nitrite as an antidote in cyanide poisoning.
   e) Explain the term saline cathartic. Give properties and uses Sodium Potassium Tartrate.

4. Solve any four of the following: 14
   a) Define Antimicrobials. Give properties and uses of Hydrogen peroxide.
   b) Give synonyms of the following :
      i) Magnesium oxide
      ii) Magnesium sulphate
      iii) Sodium chloride
      iv) Sodium hydroxide
   c) What are Protectives? Write the properties and uses of Calamine.

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d) Explain Anticaries and desensitising agents. Give the properties and uses of strontium chloride.

e) Write the properties and pharmaceutical uses of the following :
   i) Sublimed sulphur
   ii) Selenium sulphide

5. Solve any four of the following: 14

a) Explain physiological acid base balance is maintained in the body.

b) What are electrolyte replenishness? Give an account of :
   i) Sodium chloride and its preparation
   ii) Potassium chloride and its preparation as electrolyte replenisher.

c) Give the synonyms of the following :
   i) Nitrous oxide
   ii) Potassium chloride
   iii) Ammonium carbonate

d) Write the composition of following preparations:
   i) Ringer's solution
   ii) Sodium Chloride Hypertonic Injection

e) Mention the storage condition of the following:
   i) Potassium chloride
   ii) Sodium citrate

6. Solve any four of the following: 14

a) Enlist the various sources of impurities in pharmaceutical compounds.

b) Enlist the official compound of Iron.
c) Give preparation properties and uses of calcium gluconate.
d) Write the physico-chemical properties of following compounds.
   i) Boric Acid
   ii) Magnesium Oxide
   iii) Sodium Bisulfite
e) Write the principle of limit test for Iron (I.P.).

7. Solve any four of the following: 14
   a) Define radioactivity and explain the properties of α, β and γ radiations.
   b) Write the medicinal applications of radiopharmaceuticals.
   c) What do you understand by radio-opaque contrast media?
   d) Describe the various methods for measurement of radiations.
   e) What are the precautions taken during handling and storage of radiopharmaceuticals.

8. Write short note on any four of the following: 14
   a) Chlorinated Lime
   b) Respiratory stimulants
   c) Antimony Potassium Tartrate
   d) Iodine
   e) Principle for limit test for chloride