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) Antacids
   b) Antioxidants
   c) Emetics
   d) Intra cellular electrolytes
   e) pH
   f) Astringents

2. Solve any four of the following. 14
   a) Define Acids-Bases as per Bronsted-Lowry Concept. Give two examples of each.
   b) Define Antioxidants. Give criteria for selection of antioxidants.

c) Give properties and uses of any two:
   i) Boric Acid
   ii) Sodium nitrite
   iii) Sodium thiosulfate

d) Define Buffers. Mention the criteria for selection of buffer system.

e) Write the identification test of the following.
   i) Aluminium ii) Chloride

3. Solve any four of the following. 14

a) Explain Achlorhydria. Give properties and uses of agent used to treat Achlorhydria.

b) Give properties and uses of the following.
   i) Sodium bicarbonate
   ii) Magnesium Carbonate

c) What are protectives and adsorbents? Write the properties and uses of Bismuth subcarbonate.

d) Explain inhalants with examples, write the properties and uses of carbon dioxide.

e) Define antidotes. Explain the types of antidotes with examples. Give properties and uses of sodium nitrite.

4. Solve any four of the following : 14

a) Define Antimicrobials. Give properties and uses of Potassium permanganate.

b) Give synonyms of the following.
   i) Magnesium oxide ii) Magnesium sulfate
   iii) Sodium bicarbonate iv) Sodium Chloride

c) Explain the mechanism of antimicrobial agents. Give properties and uses of povidone iodine.

d) Write the storage condition of the following.
   i) Chlorinated Lime ii) Iodine

e) Explain allotropic forms of sulphur. Give properties and uses of selenium sulphide.

5. Solve any <u>four</u> of the following. 14

a) Explain Intra and Extra cellular electrolytes. Give examples.

b) Describe the properties of electrolytes used for replacement therapy.

c) Write the chemical formulae of the following:
   i) Common salt
   ii) Sodium acetate
   iii) Potassium citrate

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

e) Write the formula of ORS according to WHO.

6. Solve any four of the following. 14
   a) Explain four sources of impurities in pharmaceuticals.
   b) Explain the principle involved in the limit test for Arsenic with reaction.
   c) Enlist the official compounds of Iron
   d) Give properties and uses of calcium gluconate.
   e) Explain why alcohol is added in "Barium Sulfate Reagent" used for limit test of sulfate.

7. Solve any four of the following. 14
   a) Define radioactivity and explain the properties of α, β, and γ radiations.
   b) Draw a neat sketch labeled diagram and explain the working of G.M. Counter.
   c) Write the medicinal applications of radiopharmaceuticals.
   d) Explain the role of Iron in the body.
   e) What are the precautions taken during handling and storage of radiopharmaceuticals.

8. Write short notes on any four of the following: 14
   a) Dental products
   b) Radio - opaque contrast media
   c) Respiratory Stimulants
   d) Iodine
   e) Principle for limit test of lead?