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) Antimicrobials
   b) Extracellular electrolytes
   c) pH
   d) Emetics
   e) Antacids
   f) Anticarries agents

2. Solve any four of the following 14
   a) Define acids-bases as per Bronsted and lowry theory. Give two examples of each.
   b) Define antioxidants. Give criteria for selection of antioxidants
   c) Give properties and uses of any two.
      i) Strong ammoniumhydroxide
      ii) Hypophosphorous acid
      iii) Nitrogen
   d) What do you understand by physiological buffers? Describe the mechanism of maintaining pH of blood.
   e) Write the identification test of the following :
      i) Bicarbonate
      ii) Strontium

3. Solve any four of the following: 14
   a) List of the gastrointestinal agents with examples.
   b) Give properties and uses of the following.
      i) Boric Acid
      ii) Calcium hydroxide
   c) What are protective and adsorbents? Write the properties and uses of Bismuth subcarbonate.
   d) What is Poison? Discuss antidotes used in cyanide poisoning.
   e) Explain the term saline cathartic. Give properties and uses of magnesium sulphate.

4. Solve any four of the following: 14
   a) What are astringents? How are they useful topically? List the compounds of aluminium as astringent.
   b) Define Inhalants. State the storage condition for oxygen and nitrous oxide.
   c) List the important preparation of calomine and zinc oxide and mention their uses.
   d) Explain anticarries and desensitising agents. Give properties and uses strontium chloride.
   e) Give properties and uses of the following :
      i) Potassium permanganate
      ii) Hydrogen peroxide

5. Solve any four of the following: 14
   a) How the acibbase balance of the body is maintained?
   b) What is meant by oral rehydration therapy?
   c) Write the chemical formulae of the following.
      i) Potassium citrate
      ii) Sodium acetate
   d) What is the composition of ORS recommended by UNICEF?
   e) Mention the storage condition of the following.
      i) Sodium citrate
      ii) Ammonium chloride

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6. Solve any four of the following: 14
   a) Discuss the sources of impurities in pharmaceutical substances.
   b) Give the properties and uses of calcium gluconate.
   c) Write the principle for limit test for Arsenic.
   d) Enlist the official compounds of calcium as per I.P. 1996.
   e) Why is the solution made alkaline with ammonia in the limit for Iron?

7. Solve any four of the following: 14
   a) What are the biological effects? radiations?
   b) Explain the principle and working of scintillation counter.
   c) Explain the role of Iron in the body.
   d) Write only the names of four radionuclides with its uses.
   e) What are radio-opaque compound? Give method of preparation and uses of barium sulphate.

8. Write short note on any four of the following: 14
   a) Iodine
   b) Respiratory Stimulants
   c) Sodium potassium Tartrate
   d) Dental products
   e) Significant Errors