

## FINAL EXAMINATION

### INSTRUCTIONS: ANSWER ALL THE QUESTIONS

TIME: 3 HOURS

1. Discuss what you understand by the following terms **(20 Marks)**
  - a. Rectal drug administration
  - b. Sublingual drug administration
  - c. Intravenous (IV) drug administration
  - d. Intra-Muscular (IM) drug administration
  - e. Subcutaneous (SC) drug administration
  - f. Oral drug administration
  - g. Intra-arterial drug administration
  - h. Intra-dermal drug administration
  - i. Intra-articular drug administration
  - j. Inhalational drug administration
  
2. Controlled release drug forms are designed to reduce dosing frequency for drugs with a short elimination half-life and duration effect. Discuss. **(20 Marks)**
  
3. The extent of drug distribution into tissues depend on the degree of plasma protein and tissue binding. Discuss. **(20 Marks)**
  
4. Discuss the process of drug elimination from the human body. **(10 Marks)**
  
5. Discuss the term fermentation as is used in pharmaceutical bio-technology. **(10 Marks)**
  
6. In the manufacture of pharmaceutical, encapsulation refers to a range of techniques used to enclose medicines in a relatively stable shell known as a capsule. Discuss any other two different drug product forms and their development **(10 Marks)**

7. State two differences between prescription drugs and over the counter drugs **(5 Marks)**
  
8. Laxatives are substances that loosen stools and increase bowel movements. State any two uses of laxatives. **(5 Marks)**