





1.4 Name three (03) theories which are used to explain the dissolution. (06 marks)

- I).....
- II).....
- III).....

02. Answer **All** Parts

2.1 What is thixotropy? (01 marks)

.....  
.....  
.....

2.2 Write three (03) main criteria which are used to categorized suspensions. (03 marks)

- I).....
- II).....
- III).....

2.3 Briefly explain Hydrogen bonded complexes. (08 marks)

.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....

2.4 Write the radioactive decay equation and define the terms.

(03 marks)

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

## Part C (40 marks)

01. Answer **All** Parts

- 1.1 Write four (04) main pathways in chemical decomposition of drugs. (02 marks)
- 1.2 To overcome the chemical degradation by one of these pathways, one IV single dose ampoule manufacturer uses opaque box to store ampoules. Name and briefly explain this pathway. (02 marks)
- 1.3 What is an elementary reaction? (02 marks)
- 1.4 An unexposed co-amoxicillin suspension undergoes chemical degradation due to atmospheric water. This degradation obeys zero order reaction kinetics rule. Give the equation which can be used to calculate the time taken to reduce its concentration by half of its initial concentration ( $A_0$ ). (02 marks)
- 1.5 When the  $t = 0$ , the drug container had co-amoxicillin 99.90 mg/mL and after 60 minutes it had only 38.90 mg/mL of co-amoxicillin. Calculate the time that take to reduce its concentration by half of its initial concentration. (04 marks)
- 1.6 What will be the time if the degradation follows first order reaction kinetics? (08 marks)

02. Answer **All** Parts

- 2.1 What is complexation? (02 marks)
- 2.2 Chemical complexes can be divided into classes. Write two (02) main classes. (02 marks)
- 2.3 What are the purposes of analyzing chemical complexes? (02 marks)
- 2.4 Write two (02) methods which are used to analyses chemical complexes. (02 marks)
- 2.5 Briefly explain three (03) experimental methods which are used to determine protein binding with drugs. (08 marks)
- 2.6 Briefly explain protein binding mechanism. (04 marks)

00033