



# Technical University of Mombasa

Faculty of Applied and Health Sciences

## DEPARTMENT OF PURE AND APPLIED SCIENCES

UNIVERSITY EXAMINATION FOR THE DEGREE OF BACHELOR OF  
TECHNOLOGY IN APPLIED CHEMISTRY (ANALYTICAL OPTION)  
BTAC11M<sub>2</sub>

## ACH 4405: INDUSTRIAL PHARMACEUTICS

SEMESTER EXAMINATION

DECEMBER 2013 SERIES

2 HOURS

Instructions to candidates:

This paper consist of **FIVE** questions

Answer question **ONE** (compulsory) and any other **TWO** questions

### QUESTION ONE

- a) Outline different reasons of formulating pharmaceutical dosage forms as suspensions **(3 marks)**
- b) Using stokes equation, explain how rate of sedimentation can be reduced **(3 marks)**
- c) Define:-
- (i) Mechanism of emulsifying agent **(4 marks)**
  - (ii) Mechanism of granule moistening **(3 marks)**
  - (iii) Suppositories **(2 marks)**
- d) Explain the mode of action of moist and dry heat as sterilizing agent. **(3 marks)**
- e) Differentiate between :-
- (i) Hard and soft capsules **(3 marks)**
  - (ii) Pseudo-plastic and Dilatant fluid **(3 marks)**

- f) Explain the following terms
- (i) Tyndallisation
  - (ii) Protracted disintegration

**(6 marks)**

## **QUESTION TWO**

- a) Define mechanism of wetting Agents **(3 marks)**
- b) Differentiate between o/w and w/o emulsions **(4 marks)**
- c) Outline different reasons for coating tablets **(4 marks)**
- d) Explain Autoclave process as sterilization method **(5 marks)**
- e) Describe different types of parenterals **(4 marks)**

## **QUESTION THREE**

- a) Differentiate between Disinfection and sterilization process **(4 marks)**
- b) Explain how you will determine the following quality control test
  - (i) Dilution of Emulsion
  - (ii) Rate of sedimentation
  - (iii) Rate of tablet disintegration

**(8 marks)**

- c) Define the following terms
  - (i) Elixirs
  - (ii) Hypertonic solution
  - (iii) Semisolids **(4 marks)**
- d) Discuss the applications and limitations of Hydrophilic-lipophilic balance (HLB) **(4 marks)**

## **QUESTION FOUR**

- a) Define the following
  - (i) Fluid thioxitropy
  - (ii) Drugs bioavailability **(4 marks)**

- b) Outline different reason of formulating pharmaceutical dosage form as Emulsion **(3 marks)**
- c) Explain the :
- (i) Importance of zeta potential **(4 marks)**
  - (ii) Qualities of injectables **(3 marks)**
- d) Define and give reasons for formulating drugs as enteric coated tablets **(3 marks)**
- e) Explain briefly how you will determine rate of tablet dissolution **(3 marks)**

### QUESTION FIVE

- a) Differentiate between
- (i) Emulsion and suspension **(3 marks)**
  - (ii) Sublingual and Buccal **(4 marks)**
- b) Outline different causes of creaming in pharmaceutical suspension **(3 marks)**
- c) Outline different factors affecting
- (i) Intergranule bond strength **(3 marks)**
  - (ii) Rate of disintegration **(3 marks)**
- d) Define viscosity **(2 marks)**
- e) State disadvantages of injectables **(2marks)**