



Faculty of Health Sciences
B.Sc. (Hons) Medical & Health Product Management
7th Batch
MHPM 2243 – Inorganic Chemistry
End Semester Examination
2nd Year 2nd Semester –Assignment

Date: 20th of August 2025

Time: 1.30 am– 2.30 pm - One Hour

INSTRUCTIONS TO CANDIDATES

- This question paper consists of **Two** questions.
- Answer **ALL** questions.
- You should write legibly in black or blue ink.

QUESTION 01

(100 marks)

‘A’ is a water sample collected near Kegalle area contains carbonate ions (CO_3^{2-}) and bicarbonate ions (HCO_3^-). ‘B’ is a standard solution of 0.1 mol dm^{-3} HCl.

1.1 Solution A (10.00 cm^3) titrated with 0.1 mol dm^{-3} HCl from the burette by using phenolphthalein and methyl orange as the indicator and the results are as follows.

Experiment	Indicator	Initial Burette Reading (cm^3)	Final Burette Reading (cm^3)	Volume Consumed (cm^3)
1	Phenolphthalein	0.00	8.50	8.50
	Methyl Orange	8.50	27.70	19.20
2	Phenolphthalein	0.00	8.50	8.50
	Methyl Orange	8.50	27.90	19.40
3	Phenolphthalein	0.00	8.40	8.40
	Methyl Orange	8.40	28.00	19.60

- 1.1.1 Write the reactions when the water sample is titrated with HCl. (20 marks)
- 1.1.2 Calculate the total carbonate concentration of solution A. (30 marks)
- 1.1.3 Calculate the total bicarbonate concentration of solution A. (30 marks)
- 1.1.4 Sketch the titration curve for the experiment. (20 marks)

QUESTION 02**(100 marks)**

'X' is an unknown concentration of Potassium permanganate (KMnO_4) solution and 'Y' is a standard solution of 0.05 mol dm^{-3} Sodium oxalate ($\text{Na}_2\text{C}_2\text{O}_4$).

2.1 Solution Y (25.00 cm^3) titrated in an acidic medium with KMnO_4 from the burette and the results are as follows.

(The result of the blank titration is 0.05 mL)

Experiment	Initial Burette Reading (cm^3)	Final Burette Reading (cm^3)
1	0.00	25.57
2	0.00	25.50
3	0.00	25.50

2.1.1 What is the purpose of conducting a blank titration?

(20 marks)

2.1.2 What is the purpose of warming the titration flask before the experiment?

(20 marks)

2.1.3 Write the redox reaction between solution X & Y.

(30 marks)

2.1.4 Calculate the concentration of solution X.

(30 marks)



Faculty of Health Sciences
Bachelor of Science Honors in Medical and Health Product Management
MHPM 2233 Pharmaceuticals I
Batch 02
2nd Year 2nd Semester
End Semester Examination - Assignment

Date : 18th of August 2025

Time : 1.30 p.m. - 2.30 p.m. (One hour)

INSTRUCTIONS TO CANDIDATES

- This question paper consists of **ONE** question.
- Answer **ALL** the questions.
- Final answers should be given legibly in black or blue ink.

Question 01

(100 marks)

1.1 Master formula for Vicks ointment is given below.

<u>Ingredients</u>	<u>Quantities</u>
Camphor	0.48 g
Menthol	0.26 g
Eucalyptus oil	0.12 g
White soft paraffin	1.20 g
Hydrophilic ointment q.s.	10.0 g

- 1.1.1 List the methods available to prepare this formulation. (10 marks)
- 1.1.2 Briefly describe **one (01)** of the methods you listed in 2.1.1 above. (25 marks)
- 1.1.3 How would you pack and store this medication after the preparation? (25 marks)
- 1.2 The preparation of oral rehydration salts (ORS) involves mixing of specific ratios of electrolytes for rapid absorption. Prepare a **manufacturing label** for an ORS product. (40 marks)



Faculty of Health Sciences
Bachelor of Science Honours in Medical and Health Product Management
MHPM 2223 – Biochemistry II
Batch – 07
2nd Year 2nd Semester
End semester Assignment Examination

Date : 13th of August 2025
Time : 01.30 p.m. – 02.30 p.m (Two Hours)

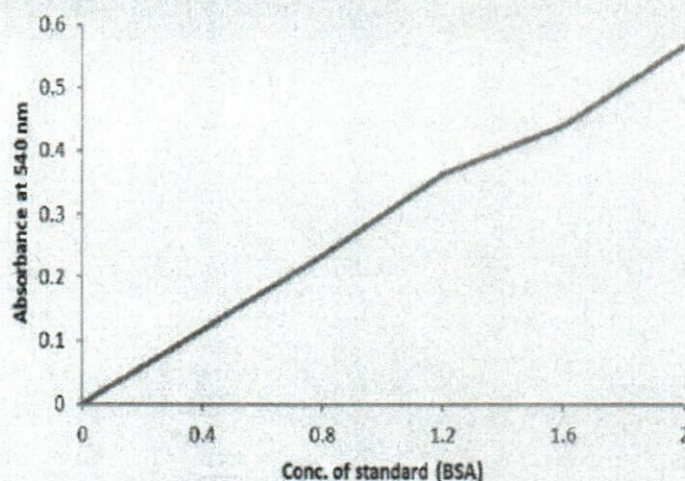
INSTRUCTIONS TO CANDIDATES

- This question paper consists of **TWO** questions.
- Answer **ALL** questions.
- You should write legibly in black or blue ink.
- You are allowed to use a scientific calculator for the examination.

QUESTION 02

(100 marks)

1.1.A researcher carried out an experiment to determine the concentration of an unknown protein sample using biuret protein assay. The obtained standard curve for the concentration of Bovine Serum Albumin against absorbance is given below.



- 1.1.1. Identify the concentration of the unknown protein sample, if the obtained absorbance for the unknown sample is 0.3. (10 marks)
- 1.1.2. Draw a flow chart to denote the procedure of conducting the above biuret assay. (20 marks)
- 1.2. Outline the role of the stomach, pancreas, and small intestine in protein digestion. (35 marks)
- 1.3. Illustrate the transamination and deamination reactions of amino acids with relevant enzymes and cofactors. (35 marks)

QUESTION 02**(100 marks)**

- 2.1. Discuss the importance of the quaternary structures of proteins in determining their biological activity. (40 marks)
- 2.2. Differentiate between globular and fibrous proteins with examples. (30 marks)
- 2.3. Describe how defects in protein degradation pathways, such as the ubiquitin-proteasome system, can contribute to disease development. (30 marks)