

Library



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Faculty of Health Sciences

BSc (Hons) Biomedical Science

BSM 1243 Foundation of Chemistry

1st year 2nd semester

Batch - 05

Mid Semester Examination

INDEX NUMBER:

Date : 29th November 2021
Time : 09.00 a.m. – 10.00 a.m. (One hour)

INSTRUCTIONS TO CANDIDATES

- This question paper consists of **TWO** questions.
- Answer **ALL** the questions.
- You should write the answers in provided sheets legibly in black or blue ink.

MATERIALS REQUIRED

- You may use a scientific calculator. This must not be programmable and may be inspected during the examination. Programmable calculators, PDAs and mobile phones are not permitted in the examinations.

01**(100 marks)**

- 1.1. Briefly describe how Bohr model differs from Rutherford model. Illustrate your answer using appropriate diagram/s. (15 marks)
- 1.2. Comment on the wave nature of electron based on the Heisenberg Uncertainty Principle. (15 marks)
- 1.3. Briefly describe how isotopes affect to the mass of an atom to obtain with decimals. (15 marks)
- 1.4. Draw the quantum mechanical model for the atom calcium. (20 marks)
- 1.5. Alkali metals are highly reacted with halides. Justify this statement. (35 marks)

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Faculty of Health Sciences

BSc (Hons) Industrial Pharmaceutical Science

BSM 1243 Foundation of Chemistry

1st year 2nd semester

Batch - 05

Mid Semester Examination

INDEX NUMBER:

Date : 29th November 2021
Time : 09.00 a.m. – 10.00 a.m. (One hour)

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01

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Faculty of Health Sciences
Bachelor of Science Honours in Biomedical Sciences
BSM 1243– Foundation of Chemistry
Batch - 03
1st year 2nd Semester
End Semester SEQ Examination

INDEX NUMBER:

Date : 25th January 2021
Time : 09.00 am – 11.00 am (Two Hours)

INSTRUCTIONS TO CANDIDATES

- This question paper consists of **FOUR** questions.
- Answer **ALL** questions.
- You should write legibly in black or blue ink.
- You are not allowed to take out the examination papers.

01

(100 marks)

- 1.1. Briefly describe the hydrolysis process using SiCl_4 as the example. (15 marks)
- 1.2. Complex formation is a common feature of d block elements. Most of the d block elements are known as transition metals. Most transition metal ions are bind with six ligand atoms to form complex compounds.
- 1.2.1. Define the term "Complex compound". (10 marks)
- 1.2.2. State an example for a hexadentate ligand. (10 marks)
- 1.2.3. Catalyst activity is another characteristic property of transition elements. Describe. (20 marks)
- 1.3. Concentrated nitric acid renders aluminium passive. Briefly describe this phenomena. (15 marks)
- 1.4. Alkali Metals are highly reacted with halides. Justify this statement. (30 marks)

02

(100 marks)

- 2.1. Aspirin has the formula $\text{C}_9\text{H}_8\text{O}_4$.
- 2.1.1. Calculate the molar mass of aspirin. (C=12.01 g, H=1.008 g, O=16.00 g) (10 marks)
- 2.1.2. Calculate how many moles of aspirin are in a tablet weighing 500 mg? (10 marks)
- 2.1.3. Aspirin is prepared by reaction of salicylic acid ($\text{C}_7\text{H}_6\text{O}_3$) with acetic anhydride ($\text{C}_4\text{H}_6\text{O}_3$) according to the following equation. (20 marks)



Assuming molecular weights of salicylic acid and acetic anhydride are $138.121 \text{ gmol}^{-1}$ and 102.09 gmol^{-1} respectively, calculate how many grams of acetic anhydride are needed to react with 4.50 g of salicylic acid? How many grams of aspirin will result?

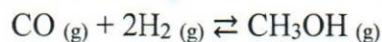
2.2.

- 2.2.1. Potassium chlorate (KClO_3) reacts with table sugar (sucrose, $\text{C}_{12}\text{H}_{22}\text{O}_{11}$) and forms potassium chloride, carbon dioxide and water. Write down the balanced chemical equation. (10 marks)
- 2.2. 2. Potassium chlorate (KClO_3) decomposes when heated to yield potassium chloride and oxygen, a reaction used to provide oxygen for the emergency breathing masks in airlines. Write down the balanced chemical equation. (10 marks)
- 2.2. 3. Aqueous solutions of sodium hypochlorite (NaOCl) are prepared by reaction of sodium hydroxide with chlorine. Calculate how many grams of sodium hydroxide are needed to react with 25.0 g of chlorine? (20 marks)
- 2.3. Which element is oxidized and which is reduced in each of the following reactions?
- 2.3.1. $\text{Ca}_{(s)} + \text{Sn}^{2+}_{(aq)} \longrightarrow \text{Ca}^{2+}_{(aq)} + \text{Sn}_{(s)}$ (10 marks)
- 2.3.2. Assign oxidation number to Mn element in MnO_4^{2-} . (10 marks)

03

(100 marks)

- 3.1. What are London dispersion forces? (10 marks)
- 3.2. Differentiate between the molecular geometries of SnCl_2 , BeH_2 and H_3O^+ . (15 marks)
- 3.3. Methanol is produced according to the following equation:



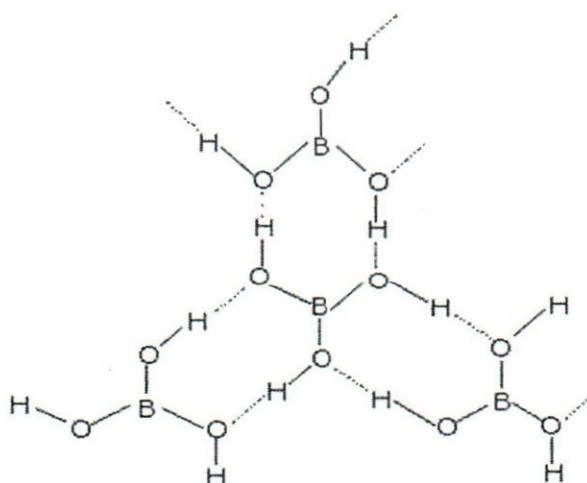
In an experiment, 2.00 moles each of CO and H_2 could react in a sealed 20.0 dm^3 reaction vessel at 500 K. When the equilibrium was established, the mixture was found to contain 0.8 moles of CH_3OH . ($R = 8.314 \text{ J mol}^{-1} \text{ K}^{-1}$)

- 3.3.1. What are the equilibrium concentrations of CO , H_2 and CH_3OH ? (25 marks)
- 3.3.2. Calculate the equilibrium constant (K_c) for this reaction? (25 marks)
- 3.3.3. Calculate the equilibrium constant (K_p) for this reaction? (25 marks)

04

(100 marks)

- 4.1. X is an element in the periodic table which has a 40.08 gmol^{-1} atomic mass.
- 4.1.1. State **04** (Four) industrially important compounds of the element X. (10 marks)
- 4.1.2. Draw the quantum mechanical model for the atom X. (20 marks)
- 4.1.3. XCO_3 is one of the commercially important compounds which can be occurred in nature in several forms. State **02** (Two) methods of preparing XCO_3 in commercially by providing balanced chemical equations. (20 marks)
- 4.2. The compound shown below is a white crystalline solid, with soapy touch. It is highly soluble in hot water.



- 4.2.1. Identify the compound. (10 marks)
- 4.2.2. State the structural features of this compound. (10 marks)
- 4.3. Outline the production process of $\text{K}_2\text{Cr}_2\text{O}_7$ from chromite ore ($\text{Fe}_4\text{Cr}_2\text{O}_4$). (30 marks)

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Faculty of Health Sciences
Bachelor of Science Honours in Biomedical Sciences

BSM1233-General Psychology

Batch 05

1st year 2nd Semester

Mid Semester SEQ Examination

INDEX NUMBER:

Date: 02/12/2021 (Thursday)

Time: 9.00 am – 10.00am

INSTRUCTIONS TO CANDIDATES

- This question paper consists of **TWO** questions.
- Answer **all** questions.
- You should write legibly in black or blue ink.
- You are not allowed to take out the examination papers.

Question 01.

- 1.1.Name five (5) main approaches in Psychology. (25 marks)
- 1.2.Name and define any five (5) branches in psychology. (25 marks)
- 1.3.Giving examples, describe classical conditioning and operant conditioning theories. (50 marks)

Question 02.

- 2.1.Name the main stages of
- 2.1.1. Piaget's Cognitive Development theory
 - 2.1.2. Erikson's psychosocial development theory (25 marks)
- 2.2.What is personality? Describe the big five model of personality (25 marks)
- 2.3.Define the below terms/concepts. Give ONE example each.
- 2.3.1. Fundamental attribution error
 - 2.3.2. Foot in the door technique
 - 2.3.3. Social facilitation
 - 2.3.4. Group think
 - 2.3.5. In-group bias (50 marks)

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Faculty of Health Sciences
Bachelor of Science Honours in Industrial Pharmaceutical Sciences

BSM1233-General Psychology

Batch 05

1st year 2nd Semester

Mid Semester SEQ Examination

INDEX NUMBER:

Date: 02/12/2021 (Thursday)

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Faculty of Health Sciences
Bachelor of Science Honours in Cosmetic Science

BSM1233-General Psychology
Batch 05
1st year 2nd Semester
Mid Semester SEQ Examination

INDEX NUMBER:

Date: 02/12/2021 (Thursday)

Time: 9.00 am – 10.00am

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Faculty of Health Sciences
Bachelor of Science Honours in Biomedical Sciences
BSM 1223– Professional English
1st Year 2nd Semester
Batch 05
Mid Semester SEQ Examination

INDEX NUMBER:

Date : 1st of December 2021
Time : 09.00 am – 10.00 am (One Hour)

INSTRUCTIONS TO CANDIDATES

- This question paper consists of **TWO** questions.
- Answer **ALL** questions.
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II. “There is little agreement on the effect of advertising on children, though it is undoubtedly a concern, especially for parents. When Sweden banned children’s TV adverts in 1991, 88% of the population supported the decision (Willows, 2009), while in the UK, over a third of adults thought advertising could damage their children” (Sidle, 2011).

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III. In the 1920s, an American academic, Elton Mayo, researched the effects of the physical environment on the productivity of workers. The result, known as the Hawthorne Studies, named after the electric company where it took place, showed that workers could be motivated to work harder by making small changes to the workplace, such as altering the lighting or the layout of a room.

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QUESTION 02 **(100 marks)**

Write an essay on one of the following topics. (175 – 200 words)

- a) Is a highly competitive environment good or bad for studying or working? Use specific reasons and examples to support your opinion.
- b) Will paper money be substituted by electronic money? Use specific reasons and examples to support your choice.



Faculty of Health Sciences
Bachelor of Science Honours in Industrial Pharmaceutical Sciences
BSM 1223– Professional English
1st Year 2nd Semester
Batch 05
Mid Semester SEQ Examination

INDEX NUMBER:

Date : 1st of December 2021
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QUESTION 02

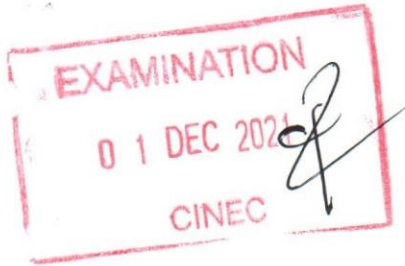
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Library

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Faculty of Health Sciences
Bachelor of Science Honours in Cosmetic Science
BSM 1223– Professional English
1st Year 2nd Semester
Batch 05
Mid Semester SEQ Examination

INDEX NUMBER:

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