



KIBABII UNIVERSITY

UNIVERSITY EXAMINATIONS
2021/2022 ACADEMIC YEAR

FIRST YEAR FIRST SEMESTER
MAIN EXAMINATIONS

FOR THE DEGREE OF BSC CHEMISTRY

COURSE CODE: SCH 113

COURSE TITLE: SAFETY AND LABORATORY MANAGEMENT

DATE: 4/02/2022

TIME: 8-10AM

INSTRUCTIONS TO CANDIDATES:

- Answer **Question ONE (Compulsory)** and any other **TWO (2)** questions
- Indicate answered questions on the front cover
- Start each question on a new page and make sure the question's number is written on each page

TIME: 2 Hours

This paper consists of **3** printed pages. Please Turn Over



KIBU observes ZERO tolerance to examination cheating

Question 1 [30 Marks]

- i. If you accidentally mix the wrong chemicals, you must: [1 Marks]
- A. immediately dispose of the mixture down the sink.
 - B. repeat the experiment one more time.
 - C. add an acid to neutralize it.
 - D. report it to the instructor.
 - E. share your neighbor's experimental results.
- ii. You should always hold containers that have chemicals: [1 Marks]
- A. with a pair of rubber gloves.
 - B. with a clean pair of tongs.
 - C. away from your body.
 - D. close to your chest and with a strong grip.
 - E. after rotating the lid in the counterclockwise direction
- iii. For your 'safety', before leaving the lab, you must [1 Marks]
- A. put hot objects away.
 - B. wash your hands and any other area of skin that has contacted lab equipment or lab benches.
 - C. get the instructor's initial on the lab report.
 - D. see that all equipment in the community drawer is complete and well organized.
 - E. mix all left over chemicals into one container.
- iv. Describe the best practice for smelling chemicals in the laboratory [3 Marks]
- v. Describe the correct procedure for diluting acid with water [3 Marks]
- vi. Describe the steps to take if you notice that an equipment is not working well in the lab [3 Marks]
- vii. Describe how flammable substances should be handled and dispensed [3 Marks]
- viii. Describe the steps you would place to place a glass tubing into a rubber stopper [3 Marks]
- ix. Describe the proper precautions to take after dispensing a chemical from a container [2 Marks]
- x. Discuss why pipetting by mouth is prohibited in the laboratory [2 Marks]

xi. Describe the type of hazard indicated by the sign below

[2 Marks]



xii. Discuss three effects of COVID-19 on safety in the chemical laboratory

[6 Marks]

Question 2 [20 Marks]

In reference to the following items used in the chemical laboratory, describe the appropriate measures one would take to ensure safety under the RAMP acronym

- i. Bunsen burner
- ii. Gas cylinder
- iii. Chemical waste
- iv. Oven
- v. Glass ware

Question 3 [20 Marks]

- i. Explain the principles and practices of first aid
- ii. List the 16 sections of a safety data sheet

[4 Marks]

[16 Marks]

Question 4 [20 Marks]

- i. Differentiate between an accident and an incident
- ii. Highlight 5 possible dangers of a messy lab
- iii. Describe the proper labelling of chemical waste containers

[2 Marks]

[10 Marks]

[8 Marks]

Question 5 [20 Marks]

- i. Highlight the main considerations before disposing chemical waste
- ii. Highlight 5 guidelines to be for disposing chemical waste
- iii. Explain the importance of labeling waste containers in the laboratory

[6 Marks]

[10 Marks]

[4 Marks]