



TECHNICAL UNIVERSITY OF MOMBASA

SCHOOL OF APPLIED AND HEALTH SCIENCES

DEPARTMENT OF PURE & APPLIED SCIENCES

UNIVERSITY EXAMINATION FOR

DIPLOMA IN SCIENCE LABORATORY

DIPLOMA IN ANALYTICAL CHEMISTRY

ACH 2103 LABORATORY PRACTICE (DSL T 2024S/DAC2024S)

END OF SEMESTER EXAMINATION (Ordinary)

SERIES:DEC 2024

TIME:2HOURS

DATE : / /2024

Instructions to Candidates

You should have the following for this examination

Answer Booklet, examination pass and student ID

This paper consists of **FIVE** questions. Attempt question ONE (Compulsory) and any other TWO questions.

Do not write on the question paper.

Question ONE

- | | |
|--|---------|
| a) (i) Name THREE main laboratory hazards | 2 marks |
| (ii) State TWO safety rules when handling glassware | 2 marks |
| b) (i) Explain TWO precautions to observe when boiling solution with a glassware | 2 marks |
| (ii) List different types of balances | 2 marks |
| c) (i) Explain the storage of chlorinated solvent | 2 marks |
| (ii) List TWO disadvantages of stills | 2 marks |
| d) Describe the mode of disposal of the following chemicals: | |
| (i) Formaldehyde | 2 marks |
| (ii) Hydrogen peroxide | 2 marks |
| e) (i) Explain the location of fume hood in laboratory | 2 marks |
| (ii) Outline the procedure to remove organic contaminant on glassware | 2 marks |
| f) (i) Name different types of Natural stones used for flooring in laboratory | 2 marks |
| (ii) State the advantages of steel furniture in the laboratory | 2 marks |
| g) (i) Name mode of exposure to chemicals in the laboratory | 2 marks |
| (ii) State TWO disadvantages of Canada balsam mounting media | 2 marks |
| h) Explain the meaning of selective media | 2 marks |

Question TWO

- (a) Explain the preparation of chemical solution 5 marks
- (b) Discuss safety procedures to be observe in the laboratory when handling glassware 5 marks
- (c) Explain basic principles of chemical storage 5 marks

Question THREE

- (a) Describe the working principle of a Galvanometer 5 marks
- (b) Outline the procedure for drying of wet glassware 5 marks
- (c) Outline substances removed by the process of distillation 5 marks

Question FOUR

- (a) Describe the operation of Ion Exchange Resin 5 marks
- (b) Discuss the role of differential medium 5 marks
- (c) Describe the function of essential parts of a spectrophotometer 5 marks

Question FIVE

- (a) Explain the procedure of removing metal compound contaminant on glass ware 5 marks
- (b) Explain the procedure for hematoxylin and Eosin stain 5 marks
- (c) Discuss the benefit of natural ventilation 5 marks