ALUPE UNIVERSITY

OFFICE OF THE DEPUTY VICE CHANCELLOR
ACADEMICS, RESEARCH AND STUDENT AFFAIRS

UNIVERSITY EXAMINATIONS

2024/2025 ACADEMIC YEAR

FOURTH YEAR FIRST SEMESTER REGULAR MAIN EXAMINATION

FOR THE DEGREE OF BACHELOR OF EDUCATION

COURSE CODE: **GEO 416**

COURSE TITLE: **HYDROLOGY AND WATHERSHED MANAGEMENT**

DATE: 9TH JANUARY, 2025 **TIME: 8.00AM – 11.00AM**

INSTRUCTION TO CANDIDATES

- **SEE INSIDE**

THIS PAPER CONSISTS OF 3 PRINTED PAGES **PLEASE TURN OVER**

GEO 416: HYDROLOGY AND WATHERSHED MANAGEMENT

STREAM: BED (Arts) **DURATION: 3 Hours**

INSTRUCTIONS TO CANDIDATES

i. *Answer Question **ONE** and any other **TWO** questions.*

ii. *Maps, sketches and diagrams should be used whenever they serve to illustrate an answer.*

iii. *Do not write on the question paper.*

Question One

a) Describe the hydrological cycle (7 Marks)

b) Discuss the influence of human activities on hydrological cycle (5 Marks)

c) Elucidate the challenges in water resource management in Kenya (6 Marks)

d) Discuss the implications of world water budget on water management (6 Marks)

e) Discuss the significance of ground water resources (6 Marks)

Question Two

a) Explain the types of precipitation commonly observed in East Africa (8 Marks)

b) Discuss the significance of water interception and storage in watershed management strategies (12 Marks)

Question Three

a) Discuss the principles of river basin analysis in understanding watershed characteristics (10 Marks)

b) Examine the effects of river basin management on local communities and ecosystem sustainability in East Africa (10 Marks)

Question Four

a) Using illustrations where possible, describe the types of erosion that affect watershed and catchment areas (10 Marks)

b) Explain how erosion control and sediment management practices contribute to sustainable watershed and catchment management (10 Marks)

Question Five

a) Analyze the factors influencing groundwater development and utilization in East Africa (10 Marks)

b) Describe strategies that can be implemented to maintain or improve water quality in catchment areas (10 Marks)

****