



**COLLEGE OF SOCIAL SCIENCES, THEOLOGY,
HUMANITIES & EDUCATION**

**HES322: ADVANCED STUDIES IN HYDROLOGY
AND BIOGEOGRAPHY**

END OF SECOND SEMESTER EXAMINATIONS

MAY/JUNE 2021

LECTURER: MS. B. BOLO

DURATION: 7 HRS

INSTRUCTIONS

Write your registration number on the answer sheet.

Answer (fully) any ONE question of your choice.

Each full question carries 100 marks.

Your full answer should be between 10- and 15-pages

Font: Times New Roman, Font size 12, Line space:2.0.

Credit is given for neat, well-written and lucid work.

Question One

- (a) Write and explain fully the Hydrologic Equation? **[10 Marks]**
- (b) Discuss the challenges in the processes of Hydrologic Cycle **[20 Marks]**
- (c) Geographical Information System is one of the advanced technologies used in management of hydrology and water resources assessment. Describe in greater detail the Geographical Information System illustrating how it is applied in hydrology **[30 marks]**
- (d) Discuss the 4 essential elements for habitat illustrating how and why a stable and reliable food source for animals is a key ingredient for habitat **[40 marks]**

Question Two

- (a) A part of the precipitation is obstructed by vegetation and temporarily remains there, explain its process. **[10 marks]**
- (b) Discuss the view that the number of species on an island at any given time is the result of a balance between extinction and colonisation **[20 marks]**
- (c) Describe a Catchment Area demonstrating the importance of studying it in institutions of higher education **[30 marks]**
- (d) Discuss anthropogenic and its impacts on agriculture. **[40 marks]**

Question Three

- (a) Use specific examples to distinguish between Climate and Climate change **[10 marks]**
- (b) Define the term Runoff and describe various units to express runoff. **[20 marks]**
- (c) Illustrate how you would help your community to understand the importance of Hydrology in land use planning **[30 Marks]**
- (d) Discuss island biogeography in details, give examples. **[40 marks]**