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(Knowledge for development)
KIBABII UNIVERSITY

UNIVERSITY EXAMINATIONS

2017/2018 ACADEMIC YEAR

MAIN EXAMINATION

FOURTH YEAR FIRST SEMESTER

FOR THE DEGREE OF BACHELOR OF EDUCATION (ARTS)

COURSE CODE: GEO 421

COURSE TITLE: CLIMATOLOGY

DATE: 22ND DECEMBER 2017

TIME: 8:00-10:00AM

INSTRUCTIONS TO CANDIDATES

1. Answer Question ONE (Q1) Compulsory
2. Answer any other TWO (2) Questions
3. Use illustration where appropriate

This paper consists of 2 printed pages. Please Turn Over.

QUESTION 1

- a. Outline any four functions of atmospheric air (4 marks)
- b. Explain the following terms as applied in Climate Studies:
- i. Buoyancy (3 marks)
 - ii. Vertical mixing (3 marks)
 - iii. Environmental lapse rate (3 marks)
 - iv. Global warming (3 marks)
- c. Citing examples, discuss sinking air masses as contributors to aridity (6 marks)
- d. Highlight any four ways in which greenhouse effect is important (4 marks)
- e. Explain two methods involved in climate classification (4 marks)

QUESTION 2

- a. Describe any four mechanisms responsible for cloud formation (12 marks)
- b. Explain the influence of Coriolis force, land masses and oceans distribution in controlling the position of the Inter-Tropical Convergence Zone (ITCZ). (8 marks)

QUESTION 3

Describe the energy interactions between the following spheres in the context of climate systems:

- i.- The hydrosphere and the atmosphere (7 marks)
- ii. The cryosphere and the atmosphere (5 marks)
- iii. The biosphere and the atmosphere (8 marks)

QUESTION 4

Discuss the potential impacts of climate change on: EITHER

Human health in Africa (20 marks)

OR

Crops and livestock production in Africa (20 marks)

QUESTION 5

Describe the three main global latitudinal circulation cells. (20 marks)