

**W1-2-60-1-6**

JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY

# **UNIVERSITY EXAMINATIONS 2018/2019**

EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN LAND RESOURCE PLANNING AND MANAGEMENT

**ALP 2305/EBW 2104 : AGRO METEOROLOGY AND CLIMATE CHANGE**

DATE: APRIL 2019 TIME: 2 HOURS

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**INSTRUCTIONS:**

**ANSWER QUESTION ONE COMPULSORY AND ANY OTHER TWO**

**QUESTIONS**

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**QUESTION ONE [30 MARKS]**

1. Use a sketch to explain the standard layout of an agro meteorological station. [5 marks]
2. Outline the role of Agro-meteorology in achieving food security in Kenya. 5 marks]
3. (i) Differentiate between potential evaporation and potential transpiration [2 marks]

(ii) Explain the factors which affect evaporation [5 marks]

1. (i) Discuss the energy balance of the earth’s system [4 marks]

(ii) Explain the effect of solar radiation on crop production. [4 marks]

**QUESTION TWO [20 MARKS]**

1. Define precipitation [1 mark]
2. (i) Discuss the formation of precipitation [3 marks]

(ii) using a sketch explain the forces which act on a raindrop in the atmosphere. [5 marks]

1. Discuss the impact of rainfall in crop production. [5 marks]

**QUESTION THREE [20 MARKS]**

1. Differentiate between saturation vapour pressure and vapour pressure. [2 marks]
2. At a climate station, air pressure is measured as 80KPa, air temperature as 200C and wet bulb temperature as 140C. Calculate : -
3. Vapour pressure [3 marks]
4. Relative humidity [3 marks]
5. Specific humidity [2 marks]
6. Discuss the effect of relate humidity on crop production. [5 marks]

**QUESTION FOUR [20 MARKS]**

1. Discuss the following types of drought
2. Agriculture [2 marks]
3. Hydrological [2 marks]