

**CHUKA**



**UNIVERSITY**

**UNIVERSITY EXAMINATIONS  
EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF SCIENCE IN  
HORTICULTURE**

**HORT 434: HERBS AND SPICES**

**STREAMS: BSC HORT**

**TIME: 2 HOURS**

**DAY/DATE: FRIDAY 17/04/2020**

**2.30 P.M. – 4.30 P.M.**

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**INSTRUCTIONS:**

• **SECTION A - ANSWER ALL QUESTIONS (30 MARKS)**

1. Explain how genetic engineering and recombinant DNA can be used to generate spice flavors. (5 marks)
2. Describe propagation procedure in cardamom. (6 marks)
3. Describe soil conditions for ginger production. (6 marks)
4. (a) Explain any six uses of cumin. (6 marks)  
(b) Describe turmeric harvesting procedure. (7 marks)

**SECTION B: ANSWER ANY TWO QUESTIONS (40 MARKS)**

5. (a) Explain how acid insoluble ash (AIA) and volatile oils are used to determine spice quality. (10 marks)  
(b) Giving examples,
  - (i) Describe condiments (2 marks)
  - (ii) Explain any eight factors that may influence the microbial population in dehydrated products. (8 marks)
6. (a) Describe essential oils and explain six major disadvantages of their use. (8 marks)

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- (b) Briefly describe the cinnamon plant on; pruning, harvesting procedure and aroma. (12 marks)
7. (a) Describe garlic's botany and process for odor release. (8 marks)
- (b) Describe the propagation procedure for the vanilla plant. (12 marks)
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