



# The Co-operative University of Kenya

**SUPPLEMENTARY / SPECIAL EXAMINATION AUGUST- 2019**

**EXAMINATION FOR THE DIPLOMA IN AGRIBUSINESS MANAGEMENT**

**UNIT CODE: DAFS 2117**

**UNIT TITLE: NATURAL PRODUCTS PROCESSING TECHNOLOGY**

**DATE: 26<sup>TH</sup> AUGUST, 2019**

**TIME: 2:30 PM – 4:30 PM**

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## **INSTRUCTIONS:**

- Answer question **ONE (compulsory)** and any other **TWO** questions

## **QUESTION ONE**

- a) Define the following terms:
- i) Natural product (1 mark)
  - ii) Functional foods (1 mark)
  - iii) Nutraceuticals (1 mark)
  - iv) Fortification (1 mark)
- b) Outline **FOUR** classes of natural products (4 marks)
- c) Discuss **THREE** main major classes of carbohydrates (6 marks)
- d) State **THREE** causes of protein denaturation (3 marks)
- e) List any **THREE** essential and three non-essential amino acids (6 marks)
- f) Outline **FOUR** functions of lipids (4 marks)
- g) Briefly discuss dietary fiber (3 marks)

## **QUESTION TWO**

- a) Discuss **FIVE** functions of carbohydrates (10 marks)
- b) Briefly explain five roles of proteins (10 marks)

## **QUESTION THREE**

- a) i. List **FOUR** principal characteristics of gums (4 marks)
- b) ii. Outline **FOUR** characteristics of resins (4 marks)
- c) Discuss Bore hole extraction of Resin and its advantages (12marks)

## **QUESTION FOUR**

- a) The Kenyan government has controlled the trade in the specimens of Aloe species.  
Explain the guiding principles (8 marks)
- b) Discuss challenges affecting Gun Arabic and Resin development in Kenya (12 marks)

## **QUESTION FIVE**

- a) Discuss high performance liquid chromatography (8 marks)
- b) Discuss **THREE** methods used in extraction and separation of natural products (12 marks)