



DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY
UNIVERSITY EXAMINATIONS 2021/2022 ACADEMIC YEAR
STAGE TWO SPECIAL/SUPPLEMENTARY EXAMINATION FOR THE DIPLOMA IN
COFFEE TECHNOLOGY AND CUPPING

FFT 0207 COFFEE CHEMISTRY AND QUALITY

DATE: 6/12/2021

TIME: 11.00 A.M.-01.00 P.M.

INSTRUCTIONS: Answer all questions in section A and any other two in section B

SECTION A - [30 MARKS]

Question One

- a) State the origin of lactones in roasted coffee (2marks)
- b) Compare the chemical composition of green coffee beans for *C. arabica* and *C canephora* (8marks)

Question Two

- a) State the physical test done for green and roasted coffee (6marks)
- b) For each of the following groups, State any FOUR minerals in coffee;
 - i. Major minerals (2marks)
 - ii. Trace minerals (2marks)

Question Three

State the volatile compounds obtained after heat degradation of the following chemicals

- i. Proteins (2marks)
- ii. Carbohydrates (2marks)
- iii. Trigonelline (2marks)
- iv. Chlorogenic acid (2marks)
- v. Lipids (2marks)

SECTION B - [30 MARKS]

Question Four

- a) Outline FOUR factors influencing the flavour of coffee beverage (8marks)
- b) Outline at least SEVEN different chemical classes of coffee aroma compounds (7marks)

Question Five

- a) Describe the type of acids found in coffee beans (6marks)
- b) Discuss THREE non-volatile compounds of coffee (9marks)

Question Six

Explain the mechanisms producing coffee aroma compounds in roasted coffee (15marks)