



# KIBABII UNIVERSITY

UNIVERSITY EXAMINATIONS  
2019/2020 ACADEMIC YEAR

FOURTH YEAR SECOND SEMESTER  
SPECIAL/SUPPLEMENTARY EXAMINATIONS  
FOR THE DEGREE OF B.SC (RENEWABLE ENERGY AND BIOFUELS  
TECHNOLOGY)

**COURSE CODE:** IPT434

**COURSE TITLE:** DISTILLERY OPERATIONS AND  
MAINTENANCE

**DATE:** 29/01/21 **TIME:** 2-4 Pm

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## INSTRUCTIONS TO CANDIDATES

TIME: 2 Hours

Answer question ONE and any TWO of the remaining

KIBU observes ZERO tolerance to examination cheating  
Question One (Compulsory)

- a) What does distillery industry entail? (3 marks)
- b) Differentiate between distillation and fermentation process in a distillery industry. (4 marks)
- c) Describe the distillation process. (5 marks)
- d) Name the types of distillation processes. (3 marks)
- e) Highlight the challenges caused by contamination in the fermentation process. (5 marks)
- f) Identify FIVE reasons necessitating the need for the maintenance of distillery equipment. (5 marks)
- g) State the reasons for undertaking quality control in a distillery. (5 marks)

**Question Two**

- a) Explain the FOUR types of fermentation. (8 marks)
- b) Discuss any SIX types of fermenters. (12 marks)

**Question Three**

- a) Discuss the processes and productions in a distillery industry. (10 marks)
- b) With the aid of production flow chart, describe the process of ethanol production. (10 marks)

**Question Four**

- a) Discuss how the boiling chamber, the pre-filter, the reservoir and the cooling/condensing coil of a filter are maintained. (20 marks)

**Question Five**

- a) State the distillery statutory requirements in terms of licenses, records of daily production and dispatches, excise formalities and safety requirements. (10 marks)
- b) Describe the quality control checks in a distillery with respect to the raw materials to the final product. (10 marks)