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KIBABII UNIVERSITY

2017/2018 ACADEMIC YEAR

FOURTH YEAR SECOND SEMESTER

MAIN EXAMINATIONS

**FOR THE DEGREE OF BACHELOR OF SCIENCE IN RENEWABLE ENERGY AND
BIOFUELS TECHNOLOGY**

COURSE CODE: IPT 434

COURSE TITLE: DISTILLERY OPERATIONS AND MAINTENANCE EXAMINATION

DATE: 10/8/2018 TIME: 9-11AM

INSTRUCTIONS TO CANDIDATES

Answer question ONE and any other two questions

This paper consists of 4 printed pages. Please Turn over

INSTRUCTIONS

Answer question 1 and any other two (2) questions

Time: 2 hours

QUESTION 1 (30 marks)

- a. Differentiate between distillation and fermentation (4 marks).
- b. Explain any three (3) types of fermentation processes (6 marks).
- c. Explain any five (5) requirements of a fermenter (10 marks).
- d. Explain any five (5) Distillation operating parameters (10 marks).

QUESTION 2 (20 marks)

Discuss how the boiling chamber, the pre-filter, the reservoir and the cooling/condensing coil of a Dol-fyn Distiller are maintained.

QUESTION 3 (20 marks)

Identify any five (5) troubleshooting problems in EVAPCO heat transfer products and services and state their possible causes and remedies.

QUESTION 4 (20 marks)

- a. With the aid of production flow chart, describe the process of production of ethanol (10 marks).
- b. Describe any five (5) processes involved in the production of Gasoline (10 marks).

QUESTION 5 (20 marks)

- a. State the Distillery Statutory requirements in terms of Licences, Records of Daily production, dispatches, excise formalities and safety requirements (10 marks).
- b. Discuss the labour and general administration in a distillery (10 marks).sss