



MASINDE MULIRO UNIVERSITY OF SCIENCE AND TECHNOLOGY

UNIVERSITY EXAMINATIONS 2021/2022 ACADEMIC YEAR

THIRD YEAR **SPECIAL/SUPPLEMENTARY** EXAMINATION

FOR THE DEGREE OF

**BACHELOR OF INDUSTRIAL CHEMISTRY**

COURSE CODE: SCI 366

COURSE TITLE: PLANT ECONOMICS AND INDUSTRIAL MANAGEMENT

DATE: FRIDAY, 5TH AUGUST 2022

TIME: 11.00 – 1.00PM

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**INSTRUCTIONS**

- Answer *ALL* Questions.
- Candidates are encouraged to provide chemical equations, relevant examples or illustrations (where necessary) for clarity of their answers.

MMUST observes ZERO tolerance to examination cheating

*This paper consists of 3 printed pages. Please turn over.*



**Q1.**

(a) Explain the meaning of each of the following terms as used in the manufacturing industry. [8]

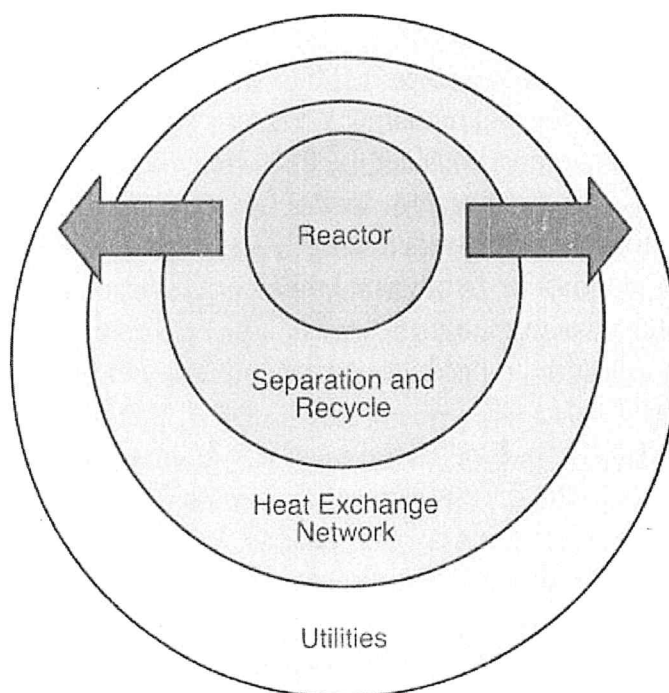
- (i) Plant
- (ii) Capital investment
- (iii) Industrial law
- (iv) Chemical patent
- (v) Process
- (vi) Tax
- (vii) Insurance
- (viii) Operating Costs

(b) What is meant by 'industrial safety and environmental conservation' and what key measures of the same are needed to be in place for any given plant. [6]

(c) What is unique about industrial chemists as compared to non-industrial chemists? [4]

**Q2.**

(a) Below is a sketch of an important model in chemical industry. Explain. [5]



(b) What do you understand by the term 'PROCESS' as used in the industry? [3]

(c) Outline two (2) examples of key unit processes most applied in manufacturing specifically pointing out the definition, principle and application of the process. [9]

Q3. (a) Compare and contrast between a Pre-Feasibility Study and a Feasibility Study. [4]

(b) Nairobi City County in the Republic of Kenya plans to establish a plastics recycling plant as a mitigation measure in the wake of the waste plastics menace to reduce pollution in Nairobi River. As an industrial chemist, theoretically carry out a feasibility study for this project and write a report for the City County management to consider in order to make a decision whether to go on with this project or not. [14]

Q4.

(a) Outline key five (5) different types of chemical industries found in Kenya. [10]

(b) Below is a flow sheet of a typical chemical process. Study the sketch and explain in your own words what is illustrated here in terms of starting materials, reaction processes & condition and final product(s). [7]

