



(University of Choice)

MASINDE MULIRO UNIVERSITY OF SCIENCE AND TECHNOLOGY (MMUST)

(Main Campus)

UNIVERSITY EXAMINATIONS

2021/2022 ACADEMIC YEAR

EXAMINATION

THIRD YEAR, SEMESTER ONE EXAMINATIONS

FOR THE DEGREE OF

BACHELOR OF SCIENCE IN RENEWABLE ENERGY TECHNOLOGY

COURSE CODE: RET 352

COURSE TITLE: PLANT DESIGN AND LAYOUT

DATE: 25-04-2022

TIME: 12:00-14:00

Instructions to Candidates

- This paper contains FOUR (4) questions
- Answer ALL questions in Section A and ANY TWO in Section B

MMUST observes ZERO tolerance to examination cheating

This Paper Consists of 2 Printed Pages. Please Turn Over →

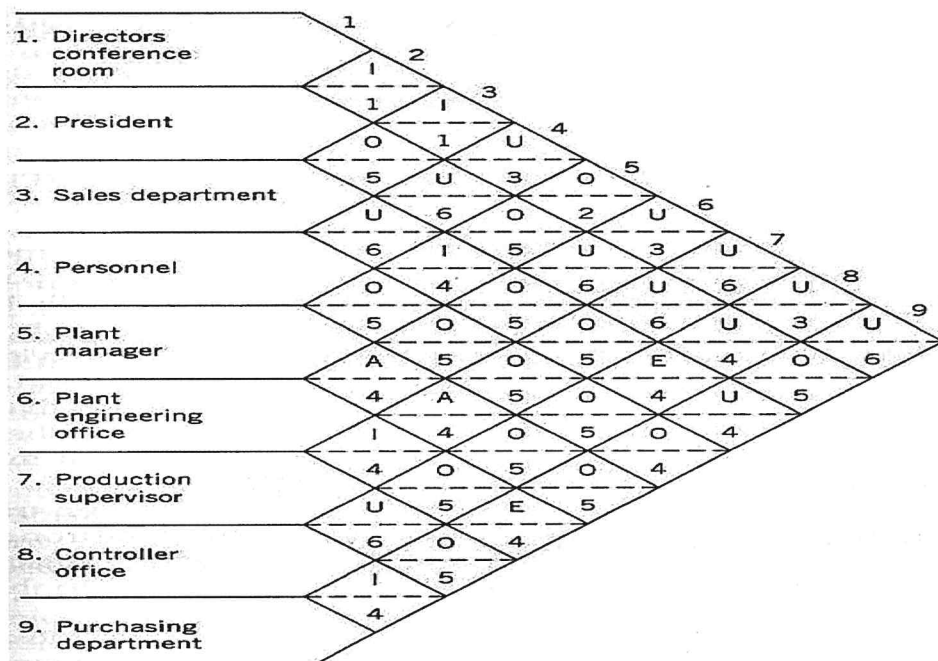
RET 352: PLANT DESIGN AND LAYOUT

SECTION A: Answer ALL questions [30 Marks]**Question ONE**

- a) Briefly describe the design process in plant layout [4 marks]
- b) Explain the process of Real-Time Layout of New Plant [4 Marks]
- c) Describe the importance of scale model tool in plant layout study [3 Marks]
- d) Briefly discuss the importance of plant pollution control [4 Marks]
- e) State the importance of scheduled maintenance of plant equipment [6 marks]
- f) State advantages of process/functional layout [6 Marks]
- g) State THREE disadvantages of using CRAFT algorithmic layout [3 Marks]

SECTION B: Answer ANY TWO questions [40 Marks]**Question TWO**

- a) Given the relationship chart below, design the layout of departments based on the CORELAP algorithm. Use closeness values of: A=4, E=3, I=2, O=1, U=0, X=-1 [10 Marks]



- b) State the design steps involved in both department selection and placement in Computerized Relationship LAYout Planning (CORELAP) [10 marks]

Question THREE

- a) State and describe the principles of plant layout [10 Marks]
- b) Explain the factors affecting plant layout [10 Marks]

Question FOUR

- a) Using a systematic layout planning diagram, describe all the components involved in the process [14 Marks]
- b) Describe Graph based method of plant layout design [6 Marks]

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