



JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY
SCHOOL OF INFORMATICS AND INNOVATIVE SYSTEMS
UNIVERSITY EXAMINATION FOR THE DEGREE OF BACHELOR OF
INFORMATION COMMUNICATION AND TECHNOLOGY
1st YEAR 2nd SEMESTER 2017/2018 ACADEMIC YEAR
MAIN CAMPUS

COURSE CODE : ICT 3124

COURSE TITLE : SYSTEM THEORY

EXAM VENUE : STREAM :

DATE : April, 2017 EXAM SESSION :

TIME: 2.00 HOURS

INSTRUCTIONS:

- 1. Answer Question 1 (Compulsory) and ANY other two questions**
- 2. Candidates are advised not to write on the question paper**
- 3. Candidates must hand in their answer booklets to the invigilator while in the examination room**

QUESTION ONE 30 MARKS

- a) Describe the following terms as used in System Theory
 - i) System (2 marks)
 - ii) Subsystems (2 marks)
 - iii) Super systems (2 marks)
 - iv) Homeostasis (2 marks)
 - v) Environment (2 marks)
 - vi) Cybernetics (2 marks)
 - vii) Theory (2 marks)
- b) What is system thinking (2 marks)
- c) The open systems approach in system theory comes from biology. Who proposed it in the 1940's? (2 marks)
- d) What is the function of systems in the field of Information Communication and Technology (2 marks)
- e) Discuss the advantages and disadvantages of a system theory (10 marks)

QUESTION TWO 20 MARKS

- a) Systems differ from each other related to degree of self-sufficiency, complexity, and adaptability. You are required to describe with relevant examples two major types of systems that you know (10 marks)
- b) With the aid of a diagram, describe the basic elements of any system (10 marks)

QUESTION THREE 20MARKS.

- a) Describe properties of a system (10 marks)
- b) In order to survive in a changing environment the system must be adaptable. Describe the three types of structural change that a system goes through. (6 marks)
- c) Differentiate between interdependence and dependence in system theory (4 marks)

QUESTION FOUR 20MARKS

- a) What is system theory (2 marks)
- b) Explain the characteristics/features of the systems theory (10 marks)
- c) Boundaries separate the system from the environment. Describe four types of boundaries you know. (8 marks)

QUESTION FIVE 20 MARKS

- a) What is management control in system theory? **(2 marks)**
- b) Systems theory and systems thinking can be applied in management. Describe ways in which system theory is used in modern organization. **(8 marks)**
- c) There are several important implications of applying the General System Theory view to the field of management control systems. Describe FIVE important implications in the field of management control systems. **(10 marks)**