(Knowledge for Development)

KIBABII UNIVERSITY

(KIBU)

UNIVERSITY EXAMINATIONS
2020/2021 ACADEMIC YEAR

MAIN EXAMINATIONS
YEAR TWO SEMESTER ONE EXAMINATIONS

FOR THE DEGREE OF
BACHELORS OF SCIENCE
(COMPUTER SCIENCE)

COURSE CODE: CSC 215

COURSE TITLE: SYSTEMS ANALYSIS AND DESIGN

DATE: 14/06/2021   TIME: 02.00 P.M – 04.00 P.M

INSTRUCTIONS TO CANDIDATES

ANSWER QUESTION ONE AND ANY OTHER TWO QUESTIONS

QUESTION ONE [COMPULSORY][30 MARKS]

a. A System is defined as an integrated set of interoperable elements, each with explicitly specified and bounded capabilities, working synergistically to perform value-added processing to enable a User to satisfy mission-oriented operational needs in a prescribed operating environment with a specified outcome and probability of success. From this definition, explain the meaning of the following phrases. **[4 marks]**

    i)   Integrated set

    ii)   Interoperable elements

b. A system analyst is a person responsible for the development of software and hardware solution to the efficient working of the organization. Identify any four qualifications he/she should possess. **[4 marks]**

c. There are different types of systems. Discuss any three. **[6 marks]**

d. There are three categories of information related to managerial levels and the decision managers make. Discuss. **[6 marks]**

e. Using a well labeled diagram, explain the five elements of a well-designed system.

[10 marks]

QUESTION TWO [20 MARKS]

a. Explain how system designers and system builders tend to view knowledge in a system.

[5 marks]

b. "It important to identify system architecture". Discuss. **[5 marks]**

c. Describe the three technological perspectives of information systems that system designers and builders tend to focus on. **[6 marks]**

d. Leah intends to use functional decomposition to analyze an information system for a client. Explain two benefits he would realize when using the tool. **[4 marks]**

QUESTION THREE [20 MARKS]

a. Describe the motivation for a system development process in terms of the Capability Maturity Model (CMM) for quality management. **[4 marks]**

b. Understanding business functions is essential in the process building block of an information system. Describe six high-level business functions typical of many organizations.

[6 marks]

c. Describe 10 basic principles of system development. **[10 marks]**

QUESTION FOUR [20 MARKS]

a. Briefly explain any potential disadvantages of prototyping in information systems development. **[5 marks]**

b. Explain the purpose of a Requirements Definition and when in the system development life cycle it should be produced. **[5 marks]**

c. Briefly describe the waterfall method of systems development and briefly explain why this method is less popular now than it used to be. **[5 marks]**

d. Briefly discuss the difference between a functional and non-functional requirement.

[5 marks]

QUESTION FIVE [20 MARKS]

a. Valley-Crest Ltd. intends to carry out a routine maintenance despite of any report issue with the system.

    i. Identify the most appropriate type of maintenance it could use justifying your answer. **[2 marks]**

    ii. Explain two advantages that could be experienced with the type of maintenance identified in (i). **[4 marks]**

b. The table below shows activities and duration for an information system project. Use it to answer the questions that follow.

Activity		Predecessor	Duration
A	Select prototype		5
B	Develop prototype		6
C	Testing		6
D	Review		15
E	Walkthrough		7
F	Final testing		5
G	Review		5

      i.   Draw a network diagram to represent the project activities. **[8 marks]**

      ii.   Show the critical path of the project. **[2 marks]**

c. Differentiates between black box and white box testing methods. **[4 marks]**