GARISSA UNIVERSITY

UNIVERSITY EXAMINATION **2017/2018** ACADEMIC YEAR **TWO** **THIRD** SEMESTER EXAMINATION

SCHOOL OF BIOLOGICAL AND PHYSICAL SCIENCE

FOR THE DIPLOMA IN INFORMATION TECHNOLOGY

COURSE CODE: DIT 021

COURSE TITLE: APPLICATION DEVELOPMENT

EXAMINATION DURATION: 2 HOURS

DATE: 07/08/18   **TIME:9.00-11.00 AM**

INSTRUCTION TO CANDIDATES

- **The examination has SIX (6) questions**

- **Question ONE (1) is COMPULSORY**

- **Choose any other THREE (3) questions from the remaining FIVE (5) questions**

- **Use sketch diagrams to illustrate your answer whenever necessary**

- **Do not carry mobile phones or any other written materials in examination room**

- **Do not write on this paper**

This paper consists of THREE (3) printed pages   *please turn over*

QUESTION ONE (COMPULSORY)

a. Define the following terms

  i. Application development **[2 Marks]**

  ii. Prototyping **[2 Marks]**

  iii. Application Development Project **[2 Marks]**

b. Explain the Skills necessary for Application development **[3 Marks]**

c. Explain the characteristics of early software **[4 Marks]**

d. State THREE components of application development. **[3 Marks]**

e. An application development company is planning to introduce new application. The table below provides a list of the activities required to plan and control the project effectively.

	Activity	Preceding Activity	Expected Duration (days)
A	Problem Definition	-	6
B	Requirement Analysis	A	22
C	Feasibility Study	A	17
D	Analysis	C	3
E	Construction	B	9
F	Testing	C	12
G	Staff Testing	D, E	4
H	Install Software	F, G	22
I	Staff Training	B	15
J	Prototype Testing	H, I	17

  i. Draw a network to represent the various activities of the project. **[7 Marks]**

  ii. Determine the critical path and minimum project time. **[2 Marks]**

QUESTION TWO

f. Explain the Program Development Life Cycle (PDLC). **[8 Marks]**

g. "The biggest challenge most application developers have is the projects failure."

  i. State the causes of the failure. **[4 Marks]**

  ii. Explain five strategies applied to minimize the rate of failure

h. State SIX features of 4GL tools. **[3 Marks]**

QUESTION THREE

    i. "Change is inevitable".

        i. Explain FIVE sources of change in project management   **[5 Marks]**

    j. State Five disadvantages of prototyping.   **[5 Marks]**

    k. "The problem faced during the periods of software evolution has been described as a crisis in software development".

        i. Explain THREE core problems encountered during the software development.

        [5 Marks]

QUESTION FOUR

    l. State factors to consider in selecting programming language during application development.   **[7 Marks]**

    m. Explain FOUR major shortcomings that we might face if we use the classical waterfall model for developing all types of software products.   **[8 Marks]**

QUESTION FIVE

    n. **Use the information to answer the question that follows.**

    Hospital Reception subsystem or module supports some of the many job duties of a hospital receptionist. Receptionist schedules patient's appointment and admission to the hospital, collects information from the patient by phone and/or upon patient's arrival to the hospital.

    For the patient that will stay in the hospital ("inpatient") she or he should have a bed allotted in a ward. Receptionists might also receive patient's payments, record them in a database and provide receipts, file insurance claims and medical reports.

        i. Represent the functionality of the above system using Use Case diagram

        [15 Marks]

QUESTION SIX

    o. Explain FIVE characteristics of a good Programming Language   **[5 Marks]**

    p. Explain FIVE affecting application development project   **[10 Marks]**