



GARISSA UNIVERSITY COLLEGE

(A Constituent College of Moi University)

**UNIVERSITY EXAMINATION 2016/2017 ACADEMIC YEAR ONE
SECOND SEMESTER EXAMINATION**

SUPPLEMENTARY/SPECIAL EXAMINATION

SCHOOL OF INFORMATION SCIENCE

FOR THE DIPLOMA INFORMATION TECHNOLOGY

COURSE CODE: DIT 021

COURSE TITLE: APPLICATION DEVELOPMENT

EXAMINATION DURATION: 3 HOURS

DATE: 26/09/17

TIME: 02.00-05.00 PM

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

Supplementary / special exam_

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please turn over

Good Luck – Exams Office



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

- (a) Explain the Program Development Life Cycle (PDLC). [8 Marks]
- (b) “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
- (c) State SIX features of 4GL tools. [3 Marks]

QUESTION THREE

- (a) “Change is inevitable”.
- i. Explain FIVE sources of change in project management [5 Marks]
- (b) State Five disadvantages of prototyping. [5 Marks]
- (c) “The problem faced during the periods of software evolution has been described as a crisis in software development”.
- iii. Explain THREE core problems encountered during the software development. [5 Marks]



QUESTION FOUR

- (a) State factors to consider in selecting programming language during application development. [7 Marks]
- (b) 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

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.

Represent the functionality of the above system using Use Case diagram

[15 Marks]

QUESTION SIX

- (a) Explain FIVE characteristics of a good Programming Language [5 Marks]
- (b) Explain FIVE affecting application development project [10 Marks]

