GARISSA UNIVERSITY COLLEGE

(A Constituent College of Moi University)

UNIVERSITY EXAMINATION 2016/2017 ACADEMIC YEAR <u>ONE</u> <u>SECOND</u> SEMESTER EXAMINATION

<u>SUPPLEMENTARY/SPECIAL EXAMINATION</u>

SCHOOL OF INFORMATION SCIENCES

FOR THE DIPLOMA INFORMATION TECHNOLOGY

COURSE CODE: DIT 011

COURSE TITLE: SOFTWARE ENGINEERING

EXAMINATION DURATION: 3 HOURS

DATE: 29/09/17   TIME: 09.00-12.00 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**

QUESTION ONE (COMPULSORY)

(a) what's is software engineering   [**1 mark**]

(b) what is a software product   [**1 mark**]

(c) by giving examples differentiate between generic software and customized software [**4 marks**]

(d) What is requirements analysis   [**1 mark**]

(e) what are the Goals of requirement analysis   [**3 marks**]

(f) distinguish between functional requirements and non-functional requirement   [**2 marks**]

(g) describe 3 responsibilities of project manager   [**3 marks**]

(h) describe Four activities involved in Risk management process   [**4 marks**]

(i) what is requirement elicitation   [**1 mark**]

(j) state 2 techniques used in requirement elicitation   [**2 marks**]

(k) state problems with natural language during requirement specification   [**3 marks**]

QUESTION TWO

(a) describe waterfall model as used in software development   [**7 marks**]

(b) Why waterfall model is used in software development   [**4 marks**]

(c) describe the following design concepts in software engineering   [**4 marks**]

    i.   Abstraction

    ii.   Modularity

    iii.   Concurrency

    iv.   Refactoring

QUESTION THREE

(a) state problems with natural language during requirement specification   [**3 marks**]

(b) what are the roles of system analyst during Software Analysis Phase of SDLC   [**3 marks**]

(c) i. what is requirement engineering ?

    ii. Describe 4 steps in requirement engineering process   [**5 marks**]

(d) state disadvantages of waterfall model   [**4 marks**]

QUESTION FOUR

(a) what are the roles of system analyst during Software Analysis Phase of SDLC **[3 marks]**

(b) what is software design **[2 marks]**

(c) state any Eight principals of software design **[8 marks]**

(d) distinguish between coupling and cohesion **[2 marks]**

QUESTION FIVE

(a) what is modularization **[2 marks]**

(b) state six advantages of modularization **[6 marks]**

(c) Information hiding is of immense use when modifications are required during the testing and maintenance phase. State six advantages associated with information hiding **[6 marks]**

(d) What is meant by requirements validation **[1 mark]**

QUESTION SIX

(a) state 4 situations where the use of Waterfall model is most appropriate **[4 marks]**

(b) describe Four activities involved in Risk management process **[4 marks]**

(c) describe Evolutionary model as used in software development **[3 marks]**

(d) 4 advantages of evolutionary model **[4 marks]**