TECHNICAL UNIVERISTY OF MOMBASA

Faculty of Engineering & Technology

UNIVERSITY EXAMINATION FOR:
BACHELOR OF TECHNOLOGY IN INFORMATION TECHNOLOGY
(BTIT 13M/BTIT 12J)

EIT 4302: SOFTWARE ENGINEERING

END OF SEMESTER EXAMINATION
SERIES: APRIL 2014
TIME: 2 HOURS

Instructions to Candidates:
You should have the following for this examination
- *Answer Booklet*

This paper consists of **FIVE** questions.
Attempt question **ONE (COMPULSORY)** and any other **TWO** questions
Maximum marks for each part of a question are as shown
This paper consists of **TWO** printed pages

Question One (Compulsory)

a) State any FOUR characteristics of software development lifecycles. **(4 marks)**

b) Briefly describe the following software development lifecycles models. **(16 marks)**
- **(i)** Waterfall model
- **(ii)** Spiral model

(iii) Incremental model
(iv) Prototyping model

Question Two

a) Define the term "software Development Lifecycle" **(2 marks)**

b) Explain any FOUR fundamental activities in all software development processes. **(8 marks)**

c) Briefly distinguish between the following as used in software engineering: **(4 marks)**
(i) Verification and validation
(ii) Coupling and cohesion

d) Explain any THREE types of software modularity. **(6 marks)**

Question Three

a) Define the term "Software Engineering" **(2 marks)**

b) Explain any FOUR key challenges facing modern software engineering. **(8 marks)**

c) Briefly explain any FOUR professional and ethical responsibilities of software engineers **(8 marks)**

d) Distinguish between software engineering and computer science. **(2 marks)**

Question Four

a) Define the term "software" as used in software engineering. **(2 marks)**

b) Briefly explain any FOUR attributes of good software. **(8 marks)**

c) Briefly describe the software engineering framework for software development. **(8 marks)**

d) Explain the meaning of the term "software crisis" **(2 marks)**

Question Five

a) Define the term "Requirement" as used in software engineering. **(2 marks)**

b) Distinguish the following types of requirements and provide an example for each.
(i) Software requirements
(ii) Systems requirements
(iii) User requirements
(iv) Functional requirements
(v) Non-functional requirements **(10 marks)**

c) Describe the software testing stages. **(8 marks)**