UNIVERSITY OF EMBU

2016/2017 ACADEMIC YEAR

SECOND SEMESTER EXAMINATION

SECOND YEAR EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE, BACHELOR OF SCIENCE (COMPUTER SCIENCE)

CSC 224: SOFTWARE ENGINEERING

DATE: APRIL 13, 2017   TIME:11:00 AM- 1:00PM

INSTRUCTIONS:

Answer Question ONE and ANY other two Questions

QUESTION ONE (30 MARKS)

a) Define the following terms as used in software engineering.   (5 Marks)

    i) Software process.

    ii) Agility.

    iii) Unit testing.

    iv) Cardinality

    v) Reverse engineering

b) List the three activities of risk assessment.   (3 Marks)

c) Explain the different phases involved in waterfall life cycle model.   (4 Marks)

d) Explain the Software Quality Assurance (SQA) Plan.   (4 Marks)

e) Describe Software Development Life Cycle (SDLC)   (4 Marks)

f) Briefly describe the five levels of Capability Maturity Model (CMM)   (5 Marks)

g) Define software testing. Explain the principles of testing.   (5 Marks)

QUESTION TWO (20 MARKS)

a) Describe some of the challenges faced during maintenance of software. (6 Marks)

b) List and briefly explain the Software Metrics (6 Marks)

c) Discuss the TWELVE principles of Agile Process Model. (8 Marks)

QUESTION THREE (20 MARKS)

a) Describe the advantage of using prototype software development model instead of waterfall model? (4 Marks)

b) Discuss the following:

         (i)   Reverse Engineering. (4 Marks)

         (ii)   Re-Engineering. (4 Marks)

c) Explain the Evolutionary process Models. (8 Marks)

QUESTION FOUR (20 MARKS)

a) With the help of a diagram, Explain the bath tub curve of hardware reliability (4 Marks)

b) Explain the RAD Model. (8 Marks)

c) The company you work for is considering instituting a company-wide software process modelling effort, and plans to set up a Software Engineering Process Group to take responsibility for this effort. What advice would you give to this group to help ensure its success? (8 Marks)

QUESTION FIVE (20 MARKS)

a) Describe the various types of software restructuring techniques (4 Marks)

b) Describe in details the different phases of Spiral Model. (8 Marks)

c) Define black box and white box testing. What are the advantages of each approach? Why are both necessary? (8 Marks)

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