



MACHAKOS UNIVERSITY

University Examinations for 2019/2020 Academic Year

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF COMPUTING AND INFORMATION TECHNOLOGY

SECOND YEAR SECOND SEMESTER EXAMINATION FOR

BACHELOR OF SCIENCE (INFORMATION TECHNOLOGY)

SIT 207: SOFTWARE ENGINEERING

DATE: 25/11/2020

TIME: 2.00-4.00 PM

INSTRUCTIONS

Answer question ONE and any other TWO questions.

QUESTION ONE (30 MARKS) [COMPULSORY]

- a) Differentiate between the following
 - i. Software Engineering and Computer Science (4 marks)
 - ii. Validation and verification (4 marks)
- b) The cost of maintaining software is often higher than the cost of development according to a number of case studies. Justify this statement. (4 marks)
- c) Software engineering process is normally supported by various case tools and platforms from requirements analysis, design and implementation. Discuss any three development platforms available for this task. (6 marks)
- d) Differentiate between the following software process models using well labelled diagrams
 - i). Rapid Application Development
 - ii). Waterfall Model (8 marks)
- e) When installing system software, you have choices of methods. Under what circumstances or situations would you consider a pilot method to be preferred over a parallel method? (4 marks)

QUESTION TWO (20 MARKS)

- a) Define a software requirements specification document. (2 marks)
- b) Discuss the role of SRS in the process of software development. (8 marks)
- c) Before implementation, Jacob is required to test the software he has developed using acceptable techniques. Justify how bypassing the testing stage may impact negatively on the application. (10 marks)

QUESTION THREE (20 MARKS)

- a) Discuss the composition of software reviews and inspection team. (8 marks)
- b) Briefly explain four measurable qualities of a good quality software system. (8 marks)
- c) Explain two types of prototypes (4 marks)

QUESTION FOUR (20 MARKS)

- a) Discuss software engineering in the context of project management (4 marks)
- b) Project planning is one of the main tasks carried out by software management and involves a number of activities. Give a brief explanation of project planning activities. (8 marks)
- c) Explain four activities that can be carried out to ensure software quality assurance. (8 marks)

QUESTION FIVE (20 MARKS)

- a) Distinguish between requirements re-engineering and reverse re-engineering. (4 marks)
- b) Discuss three configuration items that can be used as the basis of configuration management. (6 marks)
- c) Risk Management is an important concept in software engineering. Explain the methods that can be used to manage risks in projects. (10 marks)