



MACHAKOS UNIVERSITY

University Examinations for 2019/2020 Academic Year
DEPARTMENT OF COMPUTING AND INFORMATION TECHNOLOGY
SUPPLEMENTARY EXAMINATION

DIT206: PRINCIPLES OF SOFTWARE ENGINEERING

MARCH 2021

TIME: 2 HOURS

Instructions

Attempt Question One compulsory and any other two questions from Section

SECTION A

Question one

- a. Differentiate between computer software and computer program. (4 marks)
- b. Define the terms as used in software development.
 - i. Concurrency (2 marks)
 - ii. Software engineering. (2 marks)
- c. Explain any three characteristics of good software. (6 marks)
- d. Outline the procedures involved in waterfall model. (6 marks)
- e. Outline any four factors that can be used in estimating the cost of any software project. (4 marks)
- f. Explain two software project estimation techniques available in the software engineering field today. (4 marks)
- g. Define the term software scope as used in software development. (2 marks)

SECTION B

Question Two

- a. Explain three key challenges facing software engineering in the I.C.T sector today. (6 marks)
- b. Explain two types of software maintenance measures. (4 marks)
- c. Differentiate between quality assurance and quality control as used in software engineering. (4 marks)
- d. Discuss three change-over techniques as used in project implementation. (6 marks)

Question Three

- a. Define top-down and bottom-up design models as used in software engineering. (4 marks)
- b. Explain the following terms as used in software engineering.
 - i. Validation; (2 marks)

- ii. Verification; (2 marks)
- iii. Concurrency. (2 marks)
- c. Outline four skills that a software developer must possess. (4 marks)
- d. Outline four project management tools (4 marks)
- e. Define the term system engineering. (2 marks)

Question Four

- a. Explain two ways that can be used to determine the size of software product. (4 marks)
- b. Define the term software project management. (2 marks)
- c. Discuss four ways of ensuring software quality. (8 marks)
- d. Explain the following types of models as used in Software Development Life Cycle.
 - i. Big bang model (2 marks)
 - ii. Waterfall model (2 marks)
 - iii. Iterative model (2 marks)

Question Five

- a. Explain four types of software maintenance measures carried out on a software product. (8 marks)
- b. Define the term critical path as used in software project management. (2 marks)
- c. Discuss the following activities as used in Software Management Activities.
 - i. Project Planning (2 marks)
 - ii. Scope Management (2 marks)
 - iii. Project Estimation (2 marks)
- d. Explain the following types of tests as used in system testing.
 - i. performance test, (2 marks)
 - ii. acceptance test, (2 marks)

Ends