



MACHAKOS UNIVERSITY

University Examinations for 2020/2021 Academic Year

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF COMPUTING AND INFORMATION TECHNOLOGY

SECOND YEAR SPECIAL/SUPPLEMENTARY EXAMINATION FOR

BACHELOR OF SCIENCE (COMPUTER SCIENCE)

SCO 203: SOFTWARE TESTING

DATE: 22/3/2021

TIME: 8.30-10.30 AM

INSTRUCTION: Answer Question ONE and any other TWO Question

QUESTION ONE COMPULSORY (30 MARKS)

- a) Distinguish between the following concepts:
 - i. User Acceptance Testing (UAT) and System testing (2 marks)
 - ii. Verification and validation (2 marks)
 - iii. Software Testing Life Cycle (STLC) and Software Development Life Cycle (SDLC) (2 marks)
- b) Outline Four aspects to be considered in determining when to stop software testing (4 marks)
- c) Outline Three objectives of software testing (3 marks)
- d) Explain the steps that should be taken to resolve issues that may arise during testing (6 marks)
- e) Explain Four factors that contribute to low software performance (6 marks)

QUESTION TWO (20 MARKS)

- a) Explain Four types of functional testing that may be conducted on a software (8 marks)
- b) Alex intends to test a developed software using white box testing technique. Explain Four aspects that will be investigated using this technique (6 marks)
- c) Outline the steps involved in testing a software for functionality (6 marks)

QUESTION THREE (20 MARKS)

- a) You have been tasked to prepare a Test Plan for a testing team in a software project. Explain Four contents that you would include in the document (6 marks)
- b) As a team player in software project, explain Three principles that should be followed during the testing process (6 marks)
- c) Explain the importance of a Test scenario in software testing (2 marks)
- d) A team of software developers intends to use a Traceability Matrix document during the development process. Explain Three reasons for using this document (6 marks)

QUESTION FOUR (20 MARKS)

- a) Given the following code, Identify the test cases required for full testing. Justify your answer (6 marks)

```
Read p
Read q
IF p+q > 100
THEN Print "Large"
ENDIF
IF p > 50
THEN Print "p Large"
ENDIF
```

- b) An input field takes the year of birth between 1900 and 2004 what are the boundary values for testing this field. Explain your answer (3 marks)
- c) Describe Four techniques that can be used during the estimating of effort for testing (8 marks)
- d) Outline Three factors to be considered when automating software testing (3 marks)

QUESTION FIVE (20 MARKS)

- a) Your software project team members have been involved in a conflict over testing processes. Explain how you will handle the conflict amongst them (6 marks)

- b) Describe Three black box testing techniques (6 marks)
- c) Given the following fragment of code, Identify the number of tests required for 100% decision coverage. Justify your answer (5 marks)

```
if width > length
  thenbiggest_dimension = width
  if height > width
    thenbiggest_dimension = height
  end_if
elsebiggest_dimension = length
  if height > length
    thenbiggest_dimension = height
  end_if
end_if
```

- d) Explain Three disadvantages of grey box testing techniques (3 marks)