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 (MATHEMATICS AND COMPUTER SCIENCE)

BACHELOR OF SCIENCE (COMPUTER SCIENCE)

SCO 203: SOFTWARE TESTING

DATE: 25/11/2020 **TIME: 8.30-10.30 AM**

INSTRUCTIONS

Answer question ONE and any other TWO questions.

QUESTION ONE (COMPULSORY) (30 MARKS)

a) Define the following terms as used in software testing: (5 marks)

i. Testing

ii. Quality control

iii. Audit

iv. Test Cases

v. Risk

b) Distinguish between the following concepts:

i. Software Testing Life Cycle (STLC) and Software Development Life Cycle (SDLC) (2 marks)

ii. User Acceptance Testing (UAT) and System testing (2 marks)

iii. Verification and validation (2 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) Outline Four aspects to be considered in determining when to stop software testing (4 marks)

f) Explain Four factors that contribute to low software performance (6 marks)

QUESTION TWO (20 MARKS)

a) Alex intents to test a developed software using white box testing technique. Explain Four aspects that will be investigated using this technique (6 marks)

b) Explain Four types of functional testing that may be conducted on a software (8 marks)

c) 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)

QUESTION THREE (20 MARKS)

a) Outline the steps involved in testing a software for functionality (6 marks)

b) As a team player in software project, explain Three principles that should be followed during the testing process (6 marks)

c) 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
```

d) Explain the importance of a Test scenario in software testing (2 marks)

QUESTION FOUR (20 MARKS)

a) 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)

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)