



MACHAKOS UNIVERSITY

University Examinations for 2022/2023

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF COMPUTING AND INFORMATION TECHNOLOGY

THIRD YEAR FIRST SEMESTER EXAMINATIONS FOR

BACHELOR OF SCIENCE (INFORMATION TECHNOLOGY)

BACHELOR OF SCIENCE (COMPUTER SCIENCE)

SCO309: RESEARCH METHODOLOGY AND TECHNICAL WRITING

SIT395: RESEARCH METHODOLOGY

DATE:

TIME:

INSTRUCTIONS:

Answer Question ONE and any other TWO Questions

QUESTION ONE (30 Marks) [Compulsory]

- a) Define research problem. (2 marks)
- b) Explain three reasons why Google undertakes research (6 marks)
- c) Kyula wants to collect data from 1000 students of Machakos University to assist him in testing a system that he is currently developing. Justify the method that he can use. (4 marks)
- d) Explain the process of developing a hypothesis for IT research (6 marks)
- e) Explain two Styles that can be used to reference journals (4 marks)
- f) Differentiate between the following terms in research
 - i. Project proposal and Project report (4 marks)
 - ii. Research design and research problem (4 marks)

QUESTION TWO (20 MARKS)

- a) Explain two process models that can be used as part of system development methodologies. (10 marks)
- b) Research design can be thought of as the structure of research. It is the “glue” that holds all of the elements in a research project together. Discuss two types of research designs. (4 marks)
- c) Explain three methods that can be used to select a set of employees from the total number available for research purposes. (6 marks)

QUESTION THREE (20 MARKS)

- a) Literature review forms an important part of research. Analyze three sources of literature that are suitable for IT research. (9 marks)
- b) Discuss citation of various literature sources in academic research. (6 marks)
- c) State five reasons why it is important to undertake literature review in research. (5 marks)

QUESTION FOUR (20 MARKS)

- a) Explain four factors that can be considered when choosing a topic for research in computer science. (8 marks)
- a) Explain three ways in which research in computing can be used to mitigate the spread of Ebola. (9 marks)
- b) Distinguish between a research method and a research methodology (3 marks)

QUESTION FIVE (20 MARKS)

CASE STUDY

Hate speech has been propagated during election campaigns both in developed and developing countries. This has been done mostly through social media platforms, for instance, facebook and twitter. Some countries normally go to the extent of shutting down social media in an attempt to mitigate it. This sometimes escalates the situation instead of normalizing. This research aims at coming up with a system for detecting and monitoring hate speech through social media with the aim of controlling it.

Required:

- i. From the above statement of the problem, formulate a suitable title (2 marks)
- ii. Draft three SMART specific objectives from the description. (6 marks)
- iii. Analyze the problem and draw a well labeled conceptual model for the solution to the problem. (6 marks)
- iv. Explain three challenges that would be faced when doing this research. (6 marks)