



MACHAKOS UNIVERSITY

University Examinations for 2021/2022

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF COMPUTING AND INFORMATION TECHNOLOGY

THIRD YEAR SECOND SEMESTER EXAMINATION FOR

BACHELOR OF SCIENCE (COMPUTER SCIENCE)

SCO 309: RESEARCH METHODS AND TECHNICAL WRITING

DATE: 6/12/2021

TIME: 11.00-1.00 PM

INSTRUCTIONS: Answer Question ONE and other TWO Questions

QUESTION ONE (COMPULSORY) (30 MARKS)

- a) Define research. (2 marks)
- b) Explain three categories of research methods (6 marks)
- c) Justify the method that can be used to collect data from 100 students from CIT department to help in testing a system under development. (4 marks)
- d) Literature review is an important component of research that needs to be done systematically and keenly to enhance research quality. Discuss. (6 marks)
- e) Explain two methods that can be used to evaluate results in research. (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 four challenges that students face when doing their end of course research projects. (8 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. Identify and explain any four types of research designs. (8 marks)
- c) Discuss APA referencing style. (4 marks)

QUESTION THREE (20 MARKS)

Develop a prototype research proposal on a topic of your own choice and give the details as below. State:

- a) The title of your study. (3 marks)
- b) The research problem. (6 marks)
- c) The overall objective of your research. (2 marks)
- d) Three SMART objectives of your study. (6 marks)
- e) Explain a methodology you can use for your study. (3 marks)

QUESTION FOUR (20 MARKS)

- a) Explain four factors that can be considered when choosing a topic for research in computer science. (8 marks)
- b) Explain three qualities of a good research instrument. (6 marks)
- c) Explain three methods that can be used to select the set of people to be used for in a given research or project. (6 marks)

QUESTION FIVE (20 MARKS)

CASE STUDY

Most organizations value employee job performance. Kenya police service is no different from other security agencies worldwide in terms of striving for performance in order to attain global excellence. The Kenyan situation, however, is incredibly complex as many police officers do not undertake their duties effectively due to various factors including bureaucratic hierarchies mixed with modern approaches to management

Required

- a) From the above statement of the problem, formulate a suitable title (2 marks)
- b) Explain three reasons why it would be important to review related literature for this research. (6 marks)
- c) Formulate three research questions for the study (6 marks)
- d) Explain three methods that can be used to implement the recommendations from this study. (6 marks)