



MACHAKOS UNIVERSITY

University Examinations for 2020/2021 Academic Year

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF COMPUTING AND INFORMATION TECHNOLOGY

THIRD YEAR SPECIAL/SUPPLEMENTARY EXAMINATION FOR

BACHELOR OF SCIENCE (COMPUTER SCIENCE)

SCO 309: RESEARCH METHODS AND TECHNICAL WRITING

DATE: 24/3/2021

TIME: 8.30-10.30 AM

INSTRUCTION: Answer Question ONE and any other TWO Question

QUESTION ONE (30 MARKS) (COMPULSORY)

- a) Explain the term research. (2 marks)
- b) Discuss three categories of research methods (6 marks)
- c) State four properties of a research problem (4 marks)
- d) Outline the four functions of literature review in research (4 marks)
- e) Discuss THREE types of validity that a good research instrument can possess. (6 marks)
- f) Differentiate between the following terms in research
 - i. Research Methods and research methodology (4 marks)
 - ii. Research design and research problem (4 marks)

QUESTION TWO (20 MARKS)

- a) Briefly explain five characteristics of scientific research. (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. Identify and explain any four types of research designs. (10 marks)

QUESTION THREE (20 MARKS)

Develop a prototype research proposal on a topic of your own choice and state your title of the study, the background to the study, the research problem, three research objectives and a justification to the study.

QUESTION FOUR (20 MARKS)

- a) Define the term interview schedules and explain interviews as data collection method is preferred than questionnaire method (10 marks)
- b) Discuss five qualities of a good research instrument. (10 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 an effective title (2 marks)
- b) What would be the objectives of your study? (6 marks)
- c) Formulate research questions for the study (6 marks)
- d) Why is pilot study important? (4 marks)
- e) Specify the appropriate design to be adopted by the research. Why? (2 marks)