



MACHAKOS UNIVERSITY

University Examinations for 2020/2021 Academic Year

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF COMPUTING AND INFORMATION TECHNOLOGY

SECOND YEAR FIRST SEMESTER EXAMINATION FOR

DIPLOMA IN INFORMATION COMMUNICATION TECHNOLOGY

RESEARCH METHODOLOGY

DATE: 6/9/2021

TIME: 8:30 – 11:30 AM

INSTRUCTIONS

Answer any five questions

QUESTION ONE (20 marks)

- (a) Explain the following terms in the context of research methodology.
- i. Research (2 marks)
 - ii. Sampling (2 marks)
 - iii. Sample size (2 marks)
- (b) State the significance of research. (2 marks)
- (c) List four qualities of a good research title. (4 marks)
- (d) Identify two challenges faced by researchers during the research process. (4 marks)
- (e) Describe two types of research. (4 marks)

QUESTION TWO (20 MARKS)

- (a) Describe the meaning of the following terms in the context of research methodology.
- i. Research proposal (4 marks)
 - ii. Statement of the problem (3 marks)
 - iii. Literature review (4 marks)
- (b) Outline the steps in a research process. (6 marks)
- (c) Explain three methods of sampling during the data collection stage in the research process. (3 marks)

QUESTION THREE (20 MARKS)

- (a) Describe the following terms in the context of research methodology.
- i. Research Design (2 marks)
 - ii. Hypothesis (2 marks)
 - iii. Data (2 mark)
 - iv. Data analysis (2 marks)
 - v. Hypothesis (2 marks)
- (b) State two sources of literature during the research process. (2 marks)
- (c) Explain the importance of literature review in research. (4 marks)
- (d) Describe two types of research designs. (4 marks)

QUESTION FOUR (20 MARKS)

- (a) Contrast the following pairs of research methodology terms.
- i. Sample size and target population (4 marks)
 - ii. Null hypothesis and alternate hypothesis (4 marks)
 - iii. Validity and reliability (4 marks)
- (b) Describe three data collection instruments. (6 marks)
- (c) Name two data analysis tools. (2 marks)

QUESTION FIVE (20 MARKS)

- (a) Identify four sources of data during data collection in the research process. (4 marks)
- (b) Compare and contrast the following pairs of research methodology terms.
- i. Interview and Questionnaire (4 marks)
 - ii. Case study research and survey research (4 marks)
 - iii. Stratified sampling and snowball sampling (4 marks)
 - iv. Qualitative data and quantitative data (4 marks)

QUESTION SIX (20 MARKS)

- (a) Explain the significance of research questions in a research proposal. (2 marks)
- (b) Enumerate the main components of a research proposal. (8 marks)
- (c) Explain two methods of sampling during the data collection stage in the research process. (4 marks)
- (d) Describe three methods of data collection. (6 marks)

QUESTION SEVEN (20 MARKS)

- (a) Distinguish between the following pairs of research methodology terms.
- i. Primary data and secondary data (4 marks)
 - ii. Cluster sampling and snowball sampling (4 marks)
 - iii. Case study and pilot study (4 marks)
- (b) Identify the differences between a research proposal and a research report. (4 marks)
- (c) Citing two reasons, explain the need for sampling during research. (4 marks)