



# MACHAKOS UNIVERSITY

University Examinations for 2020/2021 Academic Year

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF COMPUTING AND INFORMATION TECHNOLOGY

SECOND YEAR SECOND TERM EXAMINATION FOR

DIPLOMA IN INFORMATION COMMUNICATION TECHNOLOGY

RESEARCH METHODOLOGY

DATE: 10/6/2021

TIME: 8.30-11.30 AM

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## INSTRUCTIONS

Answer any five questions

### QUESTION ONE (20 MARKS)

- a) Define the term 'research proposal'. (2 marks)
- b) State three advantages and three disadvantages of a questionnaire. (6 marks)
- c) List two advantages and two disadvantages of using the following interview methods;
  - i. Personal interview (4 marks)
  - ii. Telephone interview. (4 marks)
- d) Differentiate between research proposal and research report. (4 marks)

### QUESTION TWO (20 MARKS)

- a) Define the following terms as used in research.
  - i. abstract (2 marks)
  - ii. research process (2 marks)
  - iii. data interpretation (2 marks)
  - iv. researchable problem (2 marks)
- b) Outline three qualities of a researchable problem. (6 marks)
- c) Explain two types of hypothesis. (4 marks)
- d) Explain how a researcher/student can identify/select a research(able) problem/topic. (2 marks)

### **QUESTION THREE (20 MARKS)**

- a) State two application software that a researcher can use to analyse research data. (2 marks)
- b) Describe four data presentation techniques that a researcher can use to present his research findings. (8 marks)
- c) Explain the contents of the following parts/sections/components of a research proposal/report.
  - i. references (4 marks)
  - ii. appendixes/annexes (6 marks)

### **QUESTION FOUR (20 MARKS)**

- a) Identify four differences between a questionnaire and an interview schedule. (4 marks)
- b) Identify two data presentation tools. (2 marks)
- c) The research process can be summarised into three broad phases, i.e. planning research, conducting research and reporting research. Explain what is involved in planning research phase. (8 marks)
- d) State two principles of research ethics. (2 marks)
- e) Explain the following terms as applied in a research study.
  - i. Subject (2 marks)
  - ii. self-administered questionnaire (2 marks)

### **QUESTION FIVE (20 MARKS)**

- a) State two probability sampling techniques and two non-probability sampling techniques. (4 marks)
- b) Identify two reasons of sampling before data collection commence in a research study. (2 marks)
- c) Describe four sources of secondary data in a desktop research. (4 marks)
- d) Outline three primary sources of data and three secondary sources of data. (6 marks)
- e) Explain the importance of ethics in research. (4 marks)

### **QUESTION SIX (20 MARKS)**

- a) Define the following research terminologies. (10 marks)
  - i. Research locale
  - ii. Target population
  - iii. Sampling plan
  - iv. Interview Schedule
  - v. Questionnaire

- b) Describe three primary data collection methods. (6 marks)
- c) Explain two unethical practices that should be avoided during the research process.(4 marks)

**QUESTION SEVEN (20 MARKS)**

- a) Define the term 'questionnaire'. (2 marks)
- b) State four methods of collecting primary data in a research study. (4 marks)
- c) Describe the contents of a good research report. (8 marks)
- d) Explain the following terms in relation to a research process: (6 marks)
- i. Sample
  - ii. Population
  - iii. Census