



MERU UNIVERSITY OF SCIENCE AND TECHNOLOGY

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University Examinations 2022/2023

SECOND YEAR, FIRST SEMESTER SPECIAL/SUPPLEMENTARY EXAMINATION FOR
THE BACHELOR OF SCIENCE IN ACTUARIAL SCIENCE

SMS 3240: ACTUARIAL SCIENCE INFORMATION SYSTEMS

DATE: AUGUST 2023

TIME: 2 HOURS

INSTRUCTIONS: *Answer question one and any other two questions*

QUESTION ONE (30 MARKS)

- (a) Define the following terms as used in actuarial science information systems:
- i. Information systems (2 marks)
 - ii. International Financial Reporting Standards-19 (2 marks)
 - iii. Software Applications (2 marks)
 - iv. Data Dictionary (2 marks)
- (b) Explain three control measures that an Organisation should institute of actuaries (IFoA) over these employees and guarantee the security of the actuarial science information systems. (6 marks)
- (c) Every individual in an insurance firm has some opportunity to commit computer fraud. The potential for which they can do so depends on a number of factors. Examine three of these factors. (6 marks)
- (d) Ethical principles can help in evaluating the potential harms or risks in the use of information communication technology in insurance companies. (4 marks)
- (e) Explain ant two principles of technology ethics in actuarial science practice. (6 marks)



QUESTION TWO (20 MARKS)

- (a.) Discuss the various importance of systems theory for actuarial science practice *(10 marks)*
- (b.) Briefly discuss the benefits of using a good information system in practice in a life insurance. *(10 marks)*

QUESTION THREE (20 MARKS)

- (a) Discuss the role of database administrator in an actuarial firm. *(10 marks)*
- (b) Explain factors influencing re-centralization of information systems during actuarial science practice. *(10 marks)*

QUESTION FOUR (20 MARKS)

- a) Discuss universal life insurance information systems highlighting the management functions. *(10 marks)*
- b) Describe reasons that may make an Organisation abandon an information systems project in an actuarial science practice. *(10 marks)*

QUESTION FIVE (20 MARKS)

- a) Differentiate between deterministic and random systems giving examples in each case in an actuarial firm *(10 marks)*
- b) Explain the problems that are faced when using standard files for data processing systems during actuarial practice. *(10 marks)*

