



JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY

SCHOOL OF INFORMATICS AND INNOVATIVE SYSTEMS

DEPARTMENT OF INFORMATION SYSTEMS AND TECHNOLOGY

UNIVERSITY EXAMINATION FOR THE DEGREE OF MASTER OF SCIENCE IN

HEALTH INFORMATICS

1ST YEAR 1ST SEMESTER 2024/2025 ACADEMIC YEAR

MAIN CAMPUS

COURSE CODE: ICH 5233

COURSE TITLE: Biomedical Analytics

EXAM VENUE:

STREAM: ICT

DATE:

EXAM SESSION:

TIME:

INSTRUCTIONS

- 1. Answer any three questions**
- 2. Phones are not allowed**
- 3. All rough work should be done in the examination booklets**
- 4. Candidates are advised not to write on the question paper**

QUESTION ONE (20 MARKS)

Machine learning programming has various repositories that can enable analytics in healthcare. Discuss any three that are ideal for bio-informatics related research. Indicate five recommendations that you would make for relevant package additives. (20 marks)

QUESTION TWO (20 MARKS)

Think of a Health Informatics area of study interest clearly stating it. Discuss five possible interventions that you would make in data science and AI for healthcare along the following lines:

- a) Health Informatics policy formulation and implementation (10 marks)
- b) Governance in population health management (10 marks)

QUESTION THREE (20 MARKS)

With the aid of relevant illustrations, demonstrate the ideal methodologies that can be used to unearth meaningful patterns and trends in large-scale data systems for clinical practice. (20 marks)

QUESTION FOUR (20 MARKS)

In the light of “simplicity enhances functionality”, design a data model that integrates patient data from multiple sources to create comprehensive, patient-centered views of data. Show the mathematical computations and pseudo instructions that would be useful for your work. (20 marks)

QUESTION FIVE (20 MARKS)

Using relevant illustrations, elaborate on the advanced data programming and statistical techniques that can be used to mine data from electronic health record (EHR) systems. (20 marks)