"Investing in Africa's Future"

COLLEGE OF HEALTH, AGRICULTURE AND NATURAL SCIENCES
DEPARTMENT OF BIOMEDICAL AND MEDICAL LABORATORY SCIENCES

BACHELOR OF MEDICAL LABORATORY SCIENCES HONOURS DEGREE

SLS NSHI300: HEALTH INFORMATICS
END OF SEMESTER EXAMINATIONS

November 2021

LECTURER: DR E. MUGOMERI

DURATION: 5 HOURS

INSTRUCTIONS

Do NOT write your name on the answer sheet.

Answer (fully) any one question of your choice.

Begin your answer for each question on a new page.

Each full question carries 100 marks.

Font: Times New Roman, Font size 12, Line space: 2.0.

Credit is given for neat, well-written and lucid work.

1. Consider the information systems you've learned about so far. A hospital will likely have an electronic health record system as well as specialized departmental systems for laboratory, pharmacy, billing, anatomic pathology, and so on. Each of these systems is designed and intended for patient care, and so they capture specific data about the patient. However, none of these systems has a complete set of data for any individual patient that can be used for analysis and reporting. Obtaining deep insight into what is happening with individual patients as well as across groups of patients requires aggregating data together from many systems and performing statistical analyses of this aggregated data.

   By focusing on one electronic health record system commonly found in a hospital, answer the following questions.

   a. Design a suitable electronic health record system for a district hospital that can store and retrieve information for laboratory, pharmacy and billing purposes. (50)

   b. Using an excel file, list the variables the system collects in column 1 and explain the importance of these variables in column 2. (25)

   c. Explain how you can apply the 'DIKW' hierarchy on the data generated by the system you have designed. (25)

   Upload your all your answer sheets for this question as a compressed zipped folder. Upload your all your answer sheets for this question as a compressed zipped folder. Ensure that your file is less than 20MB in size.

2. Concerning data analytics in health care under the following headings

   a. Give a detailed overview of data analytics in health care (50)

   b. Describe the nine steps of the data analytics process (50)

3. You are tasked to work with the IT department of your hospital to build an information system that can either solve data storage and retrieval problems for the lab or for hospital administrative purposes.

   a. Design a suitable data handling system for your workplace relevant for the laboratory OR hospital administration (50)

   b. Using an excel file, list the variables the system collects in column 1 and explain the importance of these variables in column 2. (25)

   c. Explain how you can apply the 'DIKW' hierarchy on the data generated by the system you have designed. (25)

   Upload your all your answer sheets for this question as a compressed zipped folder. Ensure that your file is less than 20MB in size.

END