



***"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**

**10 MAY 2021**

**LECTURER: DR E. MUGOMERI**

**DURATION: 7 HOURS**

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***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 two information systems commonly found in a hospital, write an account how the two information systems you have selected collect data for analysis and reporting to inform the hospital on critical decisions.

- a) Describe the features of the two information systems. (30)
  - b) How do the two information systems collect data for analysis and reporting (30)
  - c) How can the hospital use the two systems for decision making (20)
  - d) Explain how you can apply the 'DIKW' hierarchy on the data generated by the two systems (20)
2. Concerning data analytics in health care
- a) 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. Peter Sondergaard, senior vice president and global head of research for the worldwide information technology research and advisory company Gartner, stated that "Information is the oil of the 21<sup>st</sup> century, and analytics is the combustion engine."
- a) Describe in detail what you understand by data analytics in the health care industry (50)
  - b) Why is it so important to 21st century healthcare? (50)

**END**