AFRICA UNIVERSITY
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"Investing in Africa's Future"

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

NSHI200: HEALTH INFORMATICS

END OF FIRST SEMESTER EXAMINATIONS

NOVEMBER 2022

LECTURER: DR T. SIMBINI

DURATION: 3 HOURS

Instructions

Answer any five questions on separate answer sheets

1. Define the terms genomics, proteomics, and metabolomics. Define the online database tools used for each of these disciplines. How can we use these disciplines in the management of disease(20)

2. Compare and contrast primary and secondary bioinformatics databases with examples. (20)

3. Compare and contrast machine learning and artificial intelligence (20)

4. Define pharmacogenomics, epigenetics, phylogenetics and give examples of their applications (20)

5. The mobile technology maturity technology varies from SMS, MMS, and instant messaging platforms that depend on the underlying cellular generations (1G to 5G). Define the various cellular generations and applications supported by each generation (20)

6. The Internet Of Things (IOT) provides opportunities in health care. What is IOT and how doe it impact on quality of care. (20)

7. Discuss how electronic health records improve quality of care. (20)

8. Pregnant women in remote communities are affected by Three Delays in accessing care namely: i) delay in making the decision to seek care, ii) delay in reaching care facilities and iii) delay in receiving care. Describe using one digital innovation, how you will address these delays(20)

9. Health care is likely to generate Big Data.
   a) Define big data and give its characteristics (5)
   b) Identify sources of where this big data can be generated from in health care (10)
   c) What are the potential uses of this big data (5)

10. Compare and contrast bioinformatics, medical informatics and public health informatics. Give practical examples on where each discipline applies and define the typical digital tools used in each case. (20)