



MERU UNIVERSITY OF SCIENCE AND TECHNOLOGY

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University Examinations 2024/2025

FOUR YEAR FIRST SEMESTER FOR THE DEGREE OF BACHELOR OF SCIENCE IN COMPUTER TECHNOLOGY

HPR 3216: COMPUTER APPLICATIONS IN HEALTH CARE

DATE: DECEMBER 2024

TIME: 2 HOURS

INSTRUCTIONS: Answer question **ONE** (Compulsory) and any other **TWO** questions

QUESTION ONE (30MARKS)

- a) Explain **five** ways in which computerised medical records can be useful to a doctor (5 Marks)
- b) Briefly elaborate any **five** measures that can be instituted to minimize risk to health information. (5 marks)
- c) Describe the main functional elements of computer-based patient record. (5Marks)
- d) Highlight any **five** sources of data in a health information system. (5marks)
- e) Briefly describe **five** major uses of medical data. (5Marks)
- f)
 - (i) Define the term *telemedicine*. (1 mark)
 - (ii) List any **four** application areas of telemedicine (4 marks)

QUESTION TWO (20 MARKS)

- a) Explain the term *computerized medical information system*. (2 marks)
- b) Briefly highlight **five** challenges faced in trying to establish such systems in the health sector in the Republic of Kenya. (5 marks)
- c) Discuss any **five** ways a patient's medical record can be used in legal proceedings. (10 marks)
- d) Differentiate between the terms *Health data* and *Health information* as applied in Health Records Management systems. (3 marks)

QUESTION THREE (20 MARKS)

- a) Discuss ways in which patient data can be protected from unauthorised disclosure. (10 Marks)
- b) Highlight society-wide factors that will determine the extent to which computers are assimilated into medical practice. (10 Marks)

QUESTION FOUR (20 MARKS)

- a) Briefly illustrate how computers can be used in the following thematic areas in health care:
- (i) Health care research
 - (ii) Telehealth
 - (iii) Health Sciences education
 - (iv) Patient care
 - (v) Administration of health services (10 Marks)
- b) Describe **five** types of Healthcare Information Systems (HIS). (10 Marks)

QUESTION FIVE (20 MARKS)

- a) Write out the acronym HIPAA in full. (1 Mark)
- b) Briefly describe the four rules associated with HIPAA. (8 Marks)
- c) (i) You check your pulse and discover that your heart rate is 100 beats per minute. Is this rate normal or abnormal? (1 mark)
- (ii) What additional information would you use in making this judgment? (2 marks)
- (iii) How does the context in which data are collected influence the interpretation of those data? (4 marks)
- d) Briefly explain how medical practice would change if non-physicians were to collect all medical data. (4 marks)