



PANJAB UNIVERSITY
OF SCIENCE AND TECHNOLOGY
FACULTY OF HEALTH AND APPLIED SCIENCES

DEPARTMENT OF HEALTH SCIENCES

QUALIFICATION: BACHELOR OF SCIENCE IN HEALTH INFORMATION SYSTEMS MANAGEMENT	
QUALIFICATION CODE: 07BHIS	LEVEL: 6
COURSE CODE: EHR621S	COURSE NAME: ELECTRONIC HEALTH RECORDS
SESSION: NOVEMBER 2019	PAPER: THEORY
DURATION: 3 HOURS	MARKS: 100

FIRST OPPORTUNITY EXAMINATION	
EXAMINER(S)	Dr Gloria Ejehiohen Iyawa
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INSTRUCTIONS
<ol style="list-style-type: none">1. Answer ALL the questions.2. Write clearly and neatly in the answer book provided.3. Number the answers clearly.4. Students ONLY need to bring a pen to the examination hall, answer booklets will be provided.

THIS QUESTION PAPER CONSISTS OF 6 PAGES (Including this front page)

SECTION A – MULTIPLE CHOICE QUESTIONS

[18 Marks]

Choose the correct answer. Only one answer per question is correct. Each question carries two marks.

1. An Electronic Health Record System of Systems consists of the following except:
 - A. Hospital Records Component
 - B. Clinical Component
 - C. Software Components
 - D. End User Devices

2. When an Electronic Health Record System of Systems allows different systems to connect and each separate system is managed by different health institutions, it is said to be:
 - A. An open-say System of Systems
 - B. A closed-ended System of Systems
 - C. Both A and B
 - D. None of the above

3. Which of the following statements are true regarding Systems Administrators in an Electronic Health Records System of Systems?
 - A. Systems administrators perform clinical functions
 - B. System administrators are also involved in determining the salaries of medical staff
 - C. Both A and B
 - D. None of the above

4. The following are all benefits of Electronic Health Records implementations except:
 - A. Less errors
 - B. Breaching of data
 - C. Improved care for patients
 - D. Sharing of patient health information across health organisations

5. One of the following represent an example of Subjective process in SOAP:
 - A. Patient arrives at the hospital complaining of stomach pain
 - B. Doctor captures information presented by patient
 - C. Both A and B
 - D. Doctor prescribes pain reliever medication

6. In order to have patient health information stored in one place, it is important to
 - A. Implement both paper-based records and electronic health records
 - B. Ensure that patients have different identification numbers
 - C. Both A and B
 - D. Migrate from paper-based records to electronic health records

7. Which of the following opening HTML tags can be used for creating a link from one web page to the other?
- A. <a href>
 - B. <a link href = hyperlink reference>
 - C. Both A and B
 - D. None of the above
8. What does the following lines of code display?
- ```

 Electronic Health Records

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- A. 1. Electronic Health Records
  - B. X. Electronic Health Records
  - C. a. Electronic Health Records
  - D. None of the above
9. The following are characteristics of a constant in PHP except:
- A. A constant value does not change
  - B. A constant is not case-sensitive
  - C. A constant name usually starts with a letter or underscore
  - D. Both B and C

**SECTION B – TRUE/FALSE QUESTIONS**

**[12 Marks]**

Two marks for each question.

Write “T” or “F” to indicate if the following statements are true or false.

- a. Electronic Health Records provide relevant information to support decision making in healthcare settings. **(2 marks)**
- b. Electronic Health Records allow users enter patient behavioural and environmental details. **(2 marks)**
- c. One of the major causes of medical error is illegible writing. **(2 marks)**
- d. Interoperability is **NOT** a component of Electronic Health Records. **(2 marks)**
- e. It is **NOT** permitted for mobile devices to be used for recording patient data at first point of care. **(2 marks)**
- f. HTML and PHP **CANNOT** be used to develop electronic health records applications. **(2 marks)**

**SECTION C – SHORT ANSWER QUESTIONS****[15 Marks]**

1. Re-arrange the list of terms with the right description. If the correct description for a term is not available, please indicate. Also indicate if more than one description fits one term. Two marks for each question. **(10 marks)**

<b>Term</b>	<b>Description</b>
Data quality	Supports interoperability
Paper-based record	Drawback of Electronic Health Records
Electronic Health Records	Ensures that data in Electronic Health Records can be used for statistical and analytical reasons
Electronic Medical Record	Increases waiting times when searching for records
Electronic Patient Record	A criteria for ensuring that information in Electronic Health Records are reliable for secondary use

2. Briefly discuss a more efficient approach for reducing the amount of time capturing patient health information in electronic health records. **(5 marks)**

**SECTION D – OPEN ENDED QUESTIONS**

**(55 marks)**

1. When a health institution decides to implement the integrity requirement of HIPAA standard **ONLY**, leaving out confidentiality and availability. What are the consequences of leaving out confidentiality and availability requirements? Be sure to explain in details giving relevant examples. **(10 marks)**
2. Explain in details **two (2)** techniques for improving data quality in Electronic Health Records. **(10 marks)**
3. Implementing Electronic Health Records in hospitals can be challenging when there is a shortage of technical skills in implementing and maintaining electronic health records. Discuss **two (2)** methods for addressing skills shortage when implementing Electronic Health Records. **(10 marks)**
4. Observe the following scenario:

*Mrs Asiya passed out in her office and she is unconscious. She was rushed to the Intensive Care Unit at the City Hospital. Although Mrs Asiya visited this hospital regularly in the last five years, they did not have her complete medical history as she had visited other hospitals in the region for medical reasons. The doctor on duty recommended one prescription which Mrs Asiya is allergic to. She had a negative reaction and was readmitted.*

Discuss in detail, how would this error be prevented in the future with the use of electronic health records? Give relevant examples. **(15 marks)**

5. When analysing health data with the use Geography Information Systems based mapping, describe scenarios where **global clustering** and **local clustering** can be used. **(10 marks)**