



**COLLEGE OF HEALTH, AGRICULTURE AND NATURAL SCIENCES
DEPARTMENT OF HEALTH SCIENCES
BACHELOR OF MEDICAL LABORATORY SCIENCES HONOURS**

SHI200 HEALTH INFORMATICS

END OF FIRST SEMESTER EXAMINATIONS

JANUARY/JUNE 2019

LECTURER: MR MAGWAGWA

DURATION: 3 HRS

INSTRUCTIONS

You are required to answer questions as instructed in each section

Start **each** question on a new page in your answer booklet

Answer all questions in **Section A**

Answer all questions in **Section B**

Answer any Three (3) questions from **Section C**

Credit will be awarded for logical, systematic and neat presentations

SECTION A (20 marks) *(Answer on Grid - Each Question is 1 Mark)*

1. Which type of records contain the most information?
 - A. Electronic medical records (EMRs)
 - B. Patient portals
 - C. Evidence-based records
 - D. Electronic health records (EHRs)

2. Which of the following answer choices best illustrates how computerized physician order entry (CPOE) helps to expedite patient care?
 - A. Nurses at General Hospital are now permitted to work 12-hour shifts.
 - B. Dr. Zuze has been able to reduce patient visits by 10 minutes by using CPOE.
 - C. Dr. Zuze sends a prescription order for a patient directly to the pharmacy.
 - D. With CPOE, pharmacists no longer have trouble deciphering Dr. Zuz's handwriting.

3. Parirenyatwa Group of Hospitals recently implemented a computerized physician order entry (CPOE) system. Which of the following is most accurate?
 - A. There is a pharmacy, radiology unit, and injection room on-site at St. Martin's Hospital.
 - B. Parirenyatwa Group of Hospitals is probably seeing a decline in miscommunications or transcribing errors.
 - C. The patients at St. Martin's Hospital likely saw an increase in healthcare costs.
 - D. Parirenyatwa Group of Hospitals is now in full compliance with the Affordable Care Act.

4. How can electronic medical records (EMRs) boost patients' engagement in their health?
 - A. All of the answer choices are correct.
 - B. It helps patients become more aware of their own health status.
 - C. Patients will not have to rely on doctors if they can seek medical advice through EMRs.
 - D. Patients will be more willing to work with their providers if they have to pay for access to a patient portal.

5. Which of the following is a benefit of evidence-based medicine?
 - A. There are never lapses in information.
 - B. Little to no time commitment on the part of the provider is required.
 - C. Less staff is required to keep information current.
 - D. Educates patients' families regarding medical procedures.

6. The IT department of General Hospital is seeing if they can break into their file servers and web applications the way a hacker would. What is this referred to as?
 - A. SQL injection attack
 - B. Penetration testing

- C. Malware testing
- D. Buffer overflow analysis

7. Jonah needs to swipe his employee badge when he enters the building. To log into his computer, he needs his user ID and password.

These are both examples of _____.

- A. data breaches
- B. information security
- C. technology threats
- D. external threats

8. What is the Test of Functional Health Literacy in Adults used for?

- A. To locate health care providers.
- B. To measure body fat percentages.
- C. To determine eligibility for free medical care.
- D. To measure word recognition

9. Takura, who is shopping at a pharmacy, stops and gets his blood pressure checked at a machine. The machine recommended that Takura follow up with his primary care doctor because his blood pressure was higher than average. What is this an example of?

- A. Patient portals
- B. Consumer health informatics
- C. General health informatics
- D. Patient-centered care

10. Which telemedicine technique utilizes video, audio, or pictures to help manage a patient's complaint, and is most helpful for chronic wound management or medication adjustments that may not require an in-office visit?

- A. Hub and spoke system
- B. Specialty consults
- C. Enhanced learning
- D. Asynchronous telemedicine

11. What does the 'e' in ePatient stand for?

- A. Enabled
- B. Empowered
- C. Engaged
- D. All of the answer choices are correct.

12. Munashe tries to participate fully in his medical care by gaining information about his condition on the internet and sees himself as an equal partner with his doctor. What is this an example of?

- A. Patient-centered medicine
- B. ePatient
- C. Patient portal
- D. Telehealth

13. Health data analytics involves the extrapolation of actionable insights from sets of patient data, typically collected from electronic health records (EHRs). Health informatics refers to the acquisition, storage, retrieval and usage of healthcare information. Can you define health informatics?

- A. Taking patient-doctor relationships toward digital formats for communication.
- B. The practice of taking old paper healthcare records and turning them into electronic health records (EHRs).
- C. Acquiring, storing, retrieving and using of healthcare information to foster better collaboration among a patient's various healthcare providers.
- D. Informing patients of health problems and methods of treatment.

14. Ergometry is....

- A. A measurement of the amount of physical work done by the body, usually during exertion.
- B. Data focused on variations in heart rate throughout periods of high stress.
- C. Data representing the amount of fluids in the body at any given time.
- D. A measurement for the amount of fat burned during exercise.

15. Define Population Health Management (PHM):

- A. Managing the health of the entire human population.
- B. Defining and treating specific populations based on disease type.
- C. Using analytics to help establish best practices related to the treatment, prevention and self-care of patients throughout a set population.
- D. Managing the financial aspects of caring for entire populations

16. Bioinformatics is:

- A. The creation of medical devices that mimic human biology more closely than traditional prosthetics.
- B. The collection of biological data to inform studies of broader populations.
- C. The application of computer technology to manage volumes of biological information.
- D. The study of biological information to aid in complex medical decisions

17. An example of a Clinical Information System (CIS) is a (an)

- A. Computerized Provider Order Entry System (CPOE)
- B. Electronic Medication Administration Record (EMAR)
- C. Clinical Data Repository (CDR)
- D. Both a and b

18. Continuous evaluation, back-up, upgrade and disaster planning are all part of which phase of the SDLC:

- A. Analysis
- B. Planning
- C. Maintenance
- D. Implementation

19. The system that automates almost all processes involved in medication administration is called:

- A. Electronic Medication Administration Record
- B. Automatic Medication Administration System
- C. Central Medication Administration Record
- D. Facility medication Administration System

20. Which of the following are purposes of the health record?

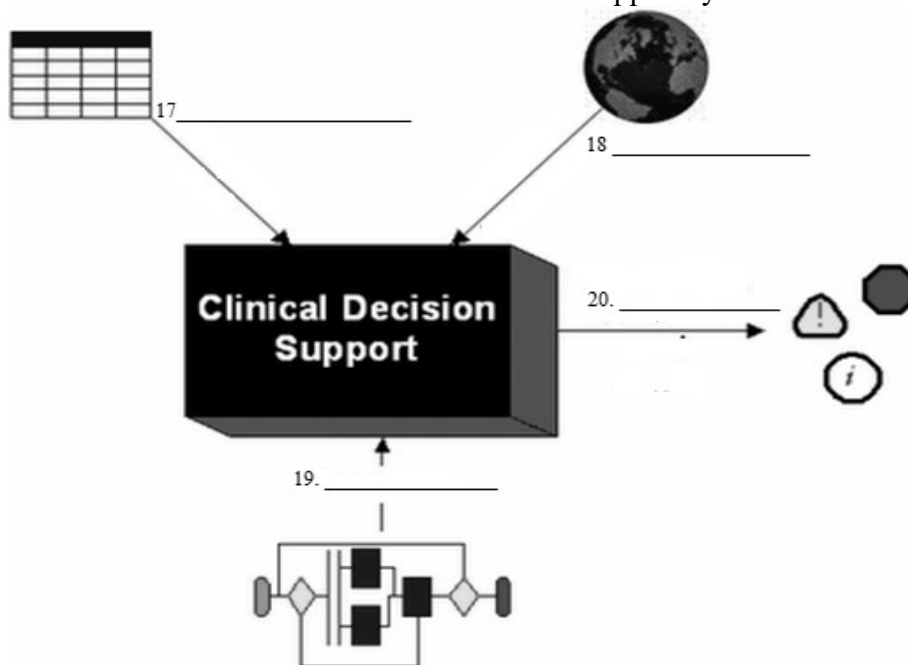
- A. To support patient care
- B. To support healthcare funding
- C. To support research and education
- D. All of the above

Section B (20 marks) (*Answer in Booklet - Each Question is 1 Mark*)

1. E-health and telehealth are the same thing? True/False
2. Health data analytics and health informatics are the same thing. True / False
3. Data that do not identify individuals and have been compiled into meaningful categories to facilitate analysis is termed: _____
4. A process that scrambles sensitive data, such as PHI, so that it can be safely transmitted is known as _____.
5. The characteristic of quality data that states that data attributes and values should be defined at the appropriate level of detail is known as _____
6. The type of access control that grants access to a user based on professional certification (for example) is known as _____.
7. The moving of computer data from one format to another in order to comply with changing standards for data and file handling is known as _____.

8. The moving of computer data from one format to another in order to comply with changing standards for data and file handling is known as _____.
9. A remotely-connected, secure internet communication system that transmits information between providers or between provider and patient is known as:_____
10. _____ refers to continuous longitudinal record of patient care in one health organisation.
11. DIKW hierarchy/ pyramid, Reference to information is referred to as _____.
12. Patients are not allowed to amend their personal health information found on a medical record because this compromises the integrity and accuracy of information. True / false
13. Medical records are considered legal documents. True/False
14. Hospital Administrator uses password and PIN codes for their respective computers during their duty at their respective ward. this is _____
15. _____ generates value from the storage and processing of very large quantities of digital information that cannot be analysed with traditional computing techniques.
16. State the fundamental theorem of Informatics?

Questions 17 to 20 indicate elements in the decision support system



Section C (60 marks) *(Answer Any 3 Questions- Each question is 20 Marks)*

1. Discuss in greater details the stages a health record follows in its life time.
2. a) Evaluate how mobile technology and mobile apps have improved health care delivery **(10 Marks)**

b) Identify and explain the features one would expect to see in patient portal of a health information system **(10 Marks)**
3. Briefly discuss the importance of the analysis and implementation stages in the system development life cycle to health system that has been developed at Parirenyatwa Group of Hospitals
4. a) Identify and explain any Five (5) characteristics of a Surveillance Health care system **(10 Marks)**

b) Discuss how these systems were utilised to control the outbreak of Ebola **(10 Marks)**
5. a) Discuss the 3 broad categories of tools for used in health Informatics. Show their importance in your answer **(10 Marks)**

b) Discuss any 5 benefits of using networked system over standalone systems. **(10 Marks)**