



UNIVERSITI KUALA LUMPUR
ROYAL COLLEGE OF MEDICINE PERAK

FINAL EXAMINATION
MARCH SEMESTER 2026

COURSE CODE : RXD23903
COURSE NAME : HEALTH INFORMATION SYSTEM
PROGRAMME NAME : DIPLOMA IN MEDICAL IMAGING
DATE : 2 JULY 2026
TIME : 9.00 A.M – 11.00 A.M
DURATION : 2 HOURS

INSTRUCTIONS TO CANDIDATES

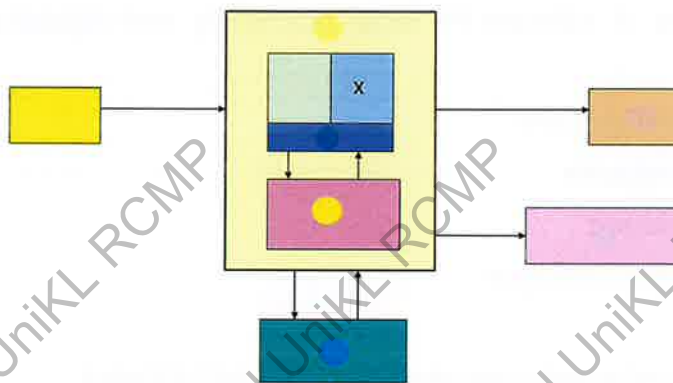
1. Please read **CAREFULLY** the instructions given in the question paper.
2. This question paper has information printed on both sides of the paper.
3. This question paper consists of **TWO (2)** section; Section A and Section B.
4. Answer **ALL** questions in Section A. For Section B, answer **THREE (3)** questions **ONLY**.
5. Please mark/write your answers on the OMR answer script or answer booklet provided.
6. Answer **ALL** questions in English language **ONLY**.

THERE ARE 7 PAGES OF QUESTIONS, EXCLUDING THIS PAGE.

SECTION A : MULTIPLE CHOICE QUESTIONS (Total: 25 marks)**INSTRUCTION: Answer ALL questions.****Please use the objective answer sheet provided.**

1. Differentiate between primary and secondary storage.
 - A. Primary storage stores frequently accessed data, whereas secondary storage is used for long-term data storage.
 - B. Primary storage is slower than secondary storage but can store more data.
 - C. Primary storage is permanently installed in the computer, whereas secondary storage is portable.
 - D. Primary storage stores system files, while secondary storage is reserved for user data.
2. Describe the criteria for the tower model of computer encasement:
 - I. It is placed in a horizontal encasement.
 - II. It is placed in a vertical encasement.
 - III. This case does not allow for the expansion of components.
 - IV. This case provides adequate room for the expansion of components.

A. I and II	C. I and IV
B. I and III	D. II and IV
3. Identify the main function of the item labelled X in the given figure:



- A. Perform computations and comparisons on data.
- B. Regulates the flow of data within the processor.
- C. Hold data and instructions.
- D. Hold all computer components.

4. **“The main function of this computer component is to process input, store data, and output results.”**

Select the computer component concerning the statement above:

- A. Primary Storage
- B. The Bus
- C. Central Processing Unit
- D. The Basic Input/Output System (BIOS)

5. Identify the unit of data that represents a single binary value.

- A. Byte
- B. Bit
- C. Kilobyte
- D. Megabyte

6. Identify the input devices found in the radiology department:

- I. Laser Printer
- II. Imaging plate scanner
- III. Barcode Readers
- IV. Keyboard

- | | |
|--------------|--------------------|
| A. I and III | C. I, II, and III |
| B. II and IV | D. II, III, and IV |

7. Identify the type of software for word processing and database management system (DBMS).

- A. Application software
- B. System software
- C. Utility software
- D. Development software

8. Differentiate the relationship between hardware and software.

- A. Hardware interprets and executes instructions provided by software.
- B. Software directly controls electrical power in hardware circuits.
- C. Hardware replaces software during system startup.
- D. Software functions independently of hardware devices.

9. Interpret how an operating system manages computing resources.
- A. By translating high-level languages into machine code.
 - B. By allocating CPU time and managing memory among processes.
 - C. By designing graphical user interfaces for applications.
 - D. By storing data files permanently on hardware.
10. Describe why Linux is widely used for server environments.
- A. It is highly customisable and freely distributed.
 - B. It requires specialised proprietary hardware.
 - C. It replaces application software entirely.
 - D. It only supports graphical user interfaces.
11. Describe the concept of a computer network.
- A. A group of computers operating independently.
 - B. Two or more devices connected to share information and resources.
 - C. A collection of hardware devices without communication channels.
 - D. A system used only for internet browsing.
12. Interpret how local area network (LAN) can connect to external networks.
- A. Through bridges and gateways
 - B. Through programming languages
 - C. Through application software
 - D. Through standalone servers
13. Describe the characteristic of a wide area network (WAN).
- A. Connects devices within one room.
 - B. Spans large geographic areas such as cities or countries.
 - C. Operates without communication channels.
 - D. Connects only wireless devices.
14. Identify the role of telecommunications systems in networking.
- A. To store network hardware.
 - B. To transmit information between locations.
 - C. To replace communication protocols.
 - D. To control computer processors.

15. Describe how health information system (HIS) contributes to hospital cost control.
- A. By inventory management.
 - B. By eliminating financial records.
 - C. By reducing hospital equipment.
 - D. By eliminating hospital staff.
16. Select the function of radiology information system(RIS).
- A. Request imaging procedure.
 - B. Inpatient prescription management.
 - C. Dispensing outpatient pharmacy management
 - D. Distribute medication to patient.
17. Recognise the concept of the internet of things (IoT).
- A. A network of computers.
 - B. A network of physical objects with sensors.
 - C. A standalone software system.
 - D. A manual data system.
18. Identify the role of radio-frequency identification (RFID) technology in IoT.
- A. Data deletion
 - B. Identification of objects
 - C. Data storage
 - D. Power supply
19. Recognise the example of IoT in healthcare application.
- A. Tooth implant
 - B. Hospital waste management
 - C. Heart valve pacemaker
 - D. Heart monitoring implant
20. Identify the concept of ensuring data is accurate and correct.
- A. Data redundancy
 - B. Data inconsistency
 - C. Data integrity
 - D. Data isolation

21. Recognise the problem that occurs when data values conflict across systems.
- A. Data redundancy
 - B. Data inconsistency
 - C. Data integrity
 - D. Data isolation
22. Identify the function of arranging appointment slots for patients in person management system (PMS).
- A. Registration
 - B. Admission
 - C. Scheduling
 - D. Discharge
23. Select the function that depends on bed availability in PMS.
- A. Registration
 - B. Admission
 - C. Scheduling
 - D. Discharge
24. Which system is used to manage imaging data electronically?
- A. Electronic medical record (EMR)
 - B. Laboratory information system (LIS)
 - C. Pharmacy information system (PIS)
 - D. Radiology information system (RIS)
25. Which system used by doctors to document patient care?
- A. Electronic medical record (EMR)
 - B. Laboratory information system (LIS)
 - C. Pharmacy information system (PIS)
 - D. Radiology information system (RIS)

SECTION B : MODIFIED ESSAY QUESTIONS (Total: 75 marks)

INSTRUCTION: This section consists of FOUR (4) modified essay questions (MEQ).

You are required to answer ONLY THREE (3) questions in the answer booklet provided.

Question 1

- (a) Explain the lifetime health plan (LHP). (10 marks)
- (b) Explain advantages of database approach. (8 marks)
- (c) Describe how the internet of things (IoT) works. (7 marks)

Question 2

- (a) Explain the picture archiving computer system (PACS). (10 marks)
- (b) Describe the concepts of clinical data. (5 marks)
- (c) Explain the steps in the development of health information system (HIS). (10 marks)

Question 3

- (a) Explain the person management system (PMS) in the healthcare services. (10 marks)
- (b) Identify the sources of clinical data. (8 marks)
- (c) Explain the local area network (LAN). (7 marks)

Question 4

- (a) Describe the digital imaging and communications in medicine (DICOM) in healthcare services. (5 marks)
- (b) Explain **FOUR (4)** functions of Person Management System (PMS). (10 marks)
- (c) Explain how telehealth improves healthcare services. (10 marks)

END OF EXAMINATION PAPER