

## UNIVERSITI TUN HUSSEIN ONN MALAYSIA

# FINAL EXAMINATION SEMESTER II **SESSION 2022/2023**

COURSE NAME

: TELEMEDICINE SYSTEM AND APPLICATIONS

/ TELEMEDICINE

COURSE CODE

: BEJ 45403 / BEU 40803

PROGRAMME CODE : BEJ

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EXAMINATION DATE : JULY / AUGUST 2023

**DURATION** 

: 3 HOURS

INSTRUCTION

1. ANSWER ALL QUESTIONS.

2.THIS FINAL EXAMINATION

CONDUCTED VIA CLOSED BOOK.

3.STUDENTS ARE **PROHIBITED** TO CONSULT THEIR OWN MATERIAL OR ANY EXTERNAL RESOURCES DURING EXAMINATION CONDUCTED VIA CLOSED

BOOK

THIS QUESTION PAPER CONSISTS OF THREE (3) PAGES



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Q1 (a) In 1997, the Malaysian government has launched national healthcare transformation agenda from industrial age medicine into information age healthcare. As outlined by Malaysia Telemedicine Blueprint, point out **THREE** (3) pillars of service delivery involved.

(9 marks)

- (b) Justify ways of telemedicine tools and telemedicine services helps the following users, respectively:
  - Clinicians to clinicians
  - Clinicians to patients
  - Patient to mobile health technology

(12 marks)

- (c) Predict **FOUR (4)** major challenges of telemedicine implementation in Malaysia. (4 marks)
- Q2 (a) By using a table, summarize a comprehensive review on the evolution of mobile technologies generations in terms of bandwidth, technology used, switching module, multiplexing method, core network and services provided, respectively.

(15 marks)

(b) Devise a total inclusive strategy to realize the interoperability of cross-continent telemedicine.

(10 marks)

Q3 (a) Define and distinguish between data privacy and data security, respectively.

(8 marks)

(b) Create an example of data privacy and data security plans.

(12 marks)

(c) Examine cybersecurity vulnerabilities associated with telehealth.

(5 marks)

- Q4 (a) Digital health has been widely adopted all over the world.
  - (i) Define mobile health (m-health).

(1 mark)

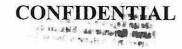
(ii) Explain the technical requirements for m-health.

(6 marks)

(iii) Demonstrate the use of smart/wearable devices for m-health.

(5 marks)





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- (b) Hospital information system (HIS) is crucial for service effectiveness and quality of care. Breakdown set of data required for the following HIS:
  - Patient administration
  - Clinical information system
  - Clinical support system
  - Order management

(8 marks)

(c) Propose FIVE (5) emerging technologies for future telemedicine.

(5 marks)

-END OF QUESTIONS -