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Universiti Tun Hussein Onn Malaysia

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

EXAMINATION DATE : JULY / AUGUST 2023

DURATION : 3 HOURS

INSTRUCTION : 1. ANSWER ALL QUESTIONS.
2. THIS FINAL EXAMINATION IS
CONDUCTED VIA **CLOSED BOOK**.
3. STUDENTS ARE **PROHIBITED** TO
CONSULT THEIR OWN MATERIAL OR ANY
EXTERNAL RESOURCES DURING THE
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)

- (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 –