



UNIVERSITI TUN HUSSEIN ONN MALAYSIA

**FINAL EXAMINATION
SEMESTER I
SESSION 2019/2020**

COURSE NAME : MOBILE COMPUTING
COURSE CODE : DAT 20503
PROGRAMME CODE : DAT
EXAMINATION DATE : DECEMBER 2019/JANUARY 2020
DURATION : 2 HOURS 30 MINUTES
INSTRUCTION : ANSWER ALL QUESTIONS

THIS QUESTION PAPER CONSISTS OF SIX (6) PAGES

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SECTION A

Choose the correct word/words based on the following lists to fill in the blanks.

location	TDMA	2G	calm technology	base station controller
small size	visitor location register	nomadic	access point	context awareness
phone	base transceiver station	wireless	pervasive computing	authentication center
home location register	portability	CDMA	user mobility	data loss

Q1 _____ emphasizes the relationships between three basic entities: people, computers, and environments.

(1 mark)

Q2 Global System for Mobile Communication (GSM) is based on the _____.

(1 mark)

Q3 Base station subsystem consists of two parts which is _____ and _____.

(2 marks)

Q4 The network subsystem consists of _____, _____ and _____ functional elements.

(3 marks)

Q5 _____ refers to any of several protocols used in second-generation (2G) and third-generation (3G) wireless communications.

(1 mark)

Q6 _____ is to transmit and receive radio frequency signals with devices able to receive transmitted signals.

(1 mark)

Q7 _____ is the ability of a system or system component to gather information about its environment at any given time and adapt behaviors accordingly

(1 mark)



SECTION B

Identify whether each of the following statements is TRUE or FALSE.

- Q8** Connectivity is about developing devices and applications that allow users to be online and communicate through wireless data networks. (1 mark)
- Q9** The first-generation analog cellular network is known as Improved Mobile Telecommunication System (IMTS). (1 mark)
- Q10** 3G networks are completely packet switched. (1 mark)
- Q11** The first cell phone call was made on 1978 at Canada. (1 mark)
- Q12** Database management is in the second layer of mobile computing three-tier architecture. (1 mark)
- Q13** Network mobility is about moving from one network to another network and uses the same service. (1 mark)
- Q14** Mobile computing is easily moved physically and whose computing capabilities may be used while they are being moved. (1 mark)
- Q15** A stationary computer can be connected through wireless. (1 mark)
- Q16** In three-tier architecture, application layer is known as the engine of the ubiquitous application. (1 mark)
- Q17** The term Internet came in use by Federal Networking Council (FNC) in 1994. (1 mark)

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SECTION C

- Q18** (a) Distinguish between nomadic and ubiquitous mobility with example. (4 marks)
- (b) Radio-frequency identification (RFID) is one of the emerging mobile technology used worldwide.
- (i) Explain about RFID technology. (2 marks)
- (ii) Give **TWO (2)** examples of RFID technology used in Malaysia. (2 marks)
- (c) List **ONE (1)** type of middleware in mobile computing (1 marks)
- (d) Explain the middleware in **Q18 (c)**. (2 marks)
- Q19** (a) Describe the convergence of mobile access in terms of mobile communication and mobile computing (4 marks)
- (b) Differentiate between Wireless Local Area Network (WLAN) and Wireless Fidelity (Wi Fi) in terms of signal range, speed and cost. (6 marks)
- (c) Discuss the advantages and disadvantages of using mobile commerce based on your own experience. (10 marks)
- Q20** (a) Explain **THREE (3)** characteristics of mobile processor. (6 marks)
- (b) Recommend the type of processor for video gaming mobile device with appropriate reason. (2 marks)
- (c) Give your opinion about mobile devices using flash drive instead of hard drive. (2 marks)

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- (d) (i) Name **FIVE(5)** categories in mobile computing evolution. (5 marks)
 - (ii) Explain **TWO (2)** categories in **Q20 (d) (i)**. (4 marks)
 - (e) Based on your understanding, discuss **TWO (2)** differences between wireless networks and fixed networks. (4 marks)
- Q21** (a) (i) Name **FIVE (5)** types of attack in information security on mobile. (5 marks)- (ii) Sketch the types of attack listed in **Q21 (a)**. (10 marks)
- (b) State **ONE (1)** type of attack on static assets. (1 mark)

Q22 Based on your understanding in using Android Developer tool, describe the way to write an application based on the given idea in **Figure Q22(i)**.

 - (i) The application will open a new activity and reverse once user clicks a button as the interface shown in **Figure Q22(i)**. (5 marks)
 - (ii) Expand the application in **Q22(i)** to send a message from MainActivity to Main2Activity and display it. (4 marks)
 - (iii) Name the method used in the **Q22(i)** and **Q22(ii)**. (1 mark)

-END OF QUESTIONS -

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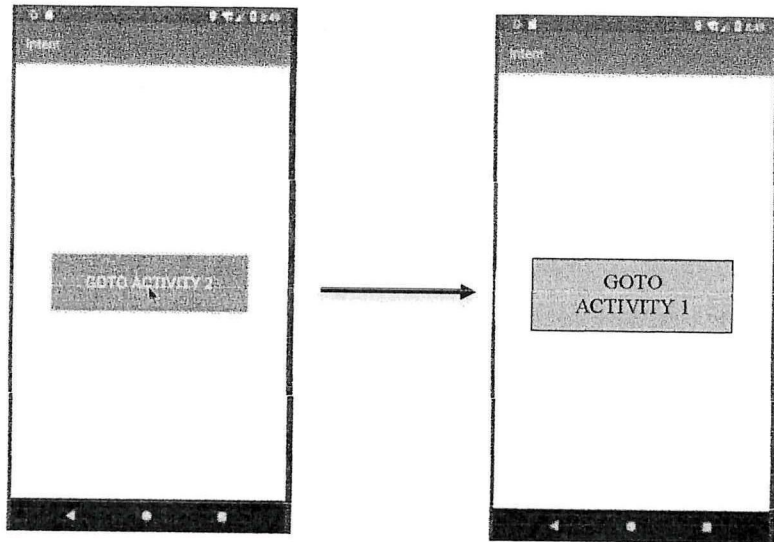


Figure Q22(i)

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