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MCA 4th Semester Examination

Mobile Computing

MCA-404

Time : 3 Hours   Max. Marks : 60

The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/continuation sheet will be issued.

Note : Attempt five questions in all selecting one from each of the Sections A, B, C & D. Section E is compulsory.

SECTION - A

1. (a) With a focus on security, what are the problems of WLANs? What level of security can WLANs provide?

                                                                                    (6)

   (b) Name the main elements of the GSM system architecture and describe their functions.   (6)

2. (a) What are general problems of mobile IP regarding security and support of quality of service?   (6)

   (b) Compare the different types of transmission errors that can occur in wireless and wired networks. What additional role does mobility play?   (6)

SECTION - B

3. (a) Explain different components and interfaces of the WAP architecture with suitable diagram.   (6)

(b) Define mobile operating system. Compare and contrast features of Palm OS and Windows CE.   (6)

4. (a) Discuss various issues related to transaction processing in mobile computing environment.   (6)

(b) Explain location based services with examples. What are various features of Android OS to support location based services?   (6)

SECTION - C

5. (a) Why menus are useful in a good user interfaces? How menus can be created?   (6)

(b) Energy is a critical resource in mobile devices. Explain. How efficient design of user interface optimizes resources in mobile devices?   (6)

6. (a) How date and time can be captured in Android platforms? Why time synchronization is required in an ad hoc network?   (6)

(b) Explain two techniques suitable for mobile devices to find location.   (6)

SECTION - D

7. (a) Explain various data access queries in SQLite.   (6)

(b) What is a chat session? Explain an Android application that supports chat.   (6)

8. (a) Differentiate between SMS and MMS. What is the role of message centre?   (6)

(b) What is peer to peer communication? What are advantages of peer to peer networking over client-server architecture?   (6)

SECTION - E

9. (a) Define embedded OS.

    (b) What are QoS parameters in audio data?

    (c) Explain GPS.

    (d) How does caching improve access time and reduce bandwidth requirements in wireless environment?

    (e) What is 3G?

    (f) What is soft and hard handoff?   (2×6=12)