1791

MCA 4th Semester Examination

Mobile Computing (NS)

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) Define WLAN. How mobility is restricted using WLANs? What additional elements are needed for roaming between networks?   (6)

    (b) What are the reasons for the delays in a GSM system for packet data traffic? Distinguish between circuit-switched and packet-oriented transmission.   (6)

2. (a) What types of different services does GSM offer? Name two examples and give reasons why these services have been separated.   (6)

    (b) Define mobile ad hoc network. What are the differences between infrastructure based and ad hoc networks regarding roaming?   (6)

SECTION - B

3. (a) State and explain different layers in WAP architecture.
                                                          (6)

(b) How does mobile operating system differ from desktop operating system? List features of Symbian OS that make it suitable for mobile phones. (6)

4. (a) Discuss the impact of mobile computing on the following aspects of data management:

 (i) Query Processing

 (ii) Recovery (6)

(b) Explain architecture of Android OS in detail. (6)

SECTION - C

5. (a) What is the role of user interface in a computing device? List various features of a good interface. (6)

(b) How map based applications are useful in mobile devices? What are various overheads of such applications? (6)

6. (a) Explain the role of menu in user interfaces for mobile devices? How menus can be created? (6)

(b) Location plays critical role in various mobile applications. List various localization techniques suitable for mobile devices. (6)

SECTION - D

7. (a) What is the difference between MySQL, SQLite and other SQL servers? (6)

(b) Define instant messaging system. Explain different features of GTalk service. (6)

8. (a) How will you setup wifi connectivity on an android platform? Explain the concept of Internet gateway. (6)

(b) Define Bluetooth. Explain the procedure to setup an ad hoc network of mobile phones using Bluetooth. (6)

SECTION - E

9. (a) Give two examples of location dependent services.

(b) Why is strong consistency of file systems problematic in mobile environment?

(c) What is the importance of declaring permissions in Android application development?

(d) What tools are necessary to install to design new application for Android platform?

(e) What is meant by handover technique?

(f) What is the role of Foreign Agent in a Mobile IP?
(2×6=12)