Roll No. | | | | | | | | | | | | |

Total No. of Pages: 02
Total No. of Questions: 09

B.Tech. (ECE, ETE) (Sem.-7th)

MOBILE COMPUTING

Subject Code: BTEC-919
Paper ID: [A3014]

Time: 3 Hrs.

Max. Marks: 60

INSTRUCTIONS TO CANDIDATE:

1. *Section –A, is Compulsory.*
2. *Attempt any four questions from Section-B.*
3. *Attempt any two questions from Section-C.*

Section –A

(10x2=20)

Q.1. Write briefly:

(a) What are the advantages and disadvantages of mobile TCP?

(b) What are the advantages of a cellular mobile communication system over a conventional mobile telephone system?

(c) Describe the functions of piconet and scatter net in Bluetooth architecture.

(d) Suggest the ways to increase the radio coverage of a cell.

(e) The IEEE 802.11 WLAN system operates at 2Mbps. Determine the data transfer time of a 20-kbytes file.

(f) How is it possible for two adjacent piconets not to use the same frequency-hopping sequences?

(g) What is triangle routing in mobile IP?

(h) Why is multiple access points installed in a building?

(i) What is the necessity of maintaining two databases, HLR and VLR at MSC?

(j) What is the function of home and foreign agents in the mobile IP protocol?

Section –B

(4x5=20)

Q.2. What the five major challenges for the implementation are of wireless LAN's.

Q.3. What are the different categories of hand- off procedures in GSM?

Q.4. What is the role of channel allocation in cellular systems? Discuss fixed and dynamic channel assignments techniques.

Q.5. Discuss the IEEE 802.11 protocol architecture by explaining physical layer and MAC layer.

Q.6. Discuss various security threats to wireless networks. Suggest some measures which can be taken to address these issues.

Section –C

(2x10=20)

Q.7. Draw the GSM network architecture and explain the following GSM subsystems entities as MS, BSS and NSS.

Q.8. (i)Draw and explain formation and operation of a MANET. Also discuss its characteristics

(ii)A given MANET consists of 100 mobile nodes. The mobility of the nodes is such that two exiting wireless links are broken, while two new wireless links are established every second. Assume that each mobile node is connected to exactly four adjacent mobile nodes; compute the total number of wireless links in the network.

Q.9. Discuss several situations to improve the performance of TCP over wireless and mobile networks by focusing on Indirect TCP and Snooping TCP.

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