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Roll No.

Sub Code: KCA-051

MCA
(SEM IV) THEORY EXAMINATION 2022-23
MOBILE COMPUTING

Time: 3 Hours *Total Marks: 100*

Note: Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt *all* questions in brief. **2 x 10 = 20**

a. What is Mobile Computing?

b. Describe why "Ideally shape of a cell is Hexagonal".

c. Elaborate Hand Off

d. Explain HLR and VLR.

e. Explain various issues in Wireless Networks.

f. Explain role of Venus in CODA file system.

g. List four properties of transaction.

h. Explain eavesdropping attack against mobile agent in mobile computing

i. Explain Ad-hoc network

j. List the QoS parameters in MANET.

SECTION B

2. Attempt any *three* of the following: **10x3=30**

a. Explain the GSM architecture with the help of diagram.

b. Explain how can we avoid hidden and exposed terminal problems?

c. Explain the process of disconnected operation performed in CODA

d. Explain adaptive clustering with suitable example.

e. Explain transaction processing system and its cycle.

SECTION C

3. Attempt any *one* part of the following: **10x1=10**

a. What are the protection methods against malicious mobile agents in mobile computing.

b. What is ad-hoc network? Explain reactive, proactive and hybrid routing protocols on basis of vital parameters.

4. **Attempt any *one* part of the following:** **10x1=10**

a. Explain what would be the minimum distance between the centers of two cells with the same band of frequencies if cell radius is 6 km and the rese factor is 14?

b. Explain resulting chip sequence if suppose that A, B, C are simultaneously transmitting 0 bits, using CDMA system with following chip sequences:

i. A= (-1 -1 -1 +1 +1 -1 +1 +1)
ii. B= (-1 -1 +1 -1 +1 +1 +1 -1)
iii. C= (-1 +1 -1 +1 +1 +1 -1 -1)

5. **Attempt any *one* part of the following:** **10x1=10**

a. Explain various issues in TCP over wireless and how these issues can be overcome using I-TCP and Snoop-TCP.

b. What is Mobile IP? Explain registration process in Mobile IP with suitable diagram.

6. **Attempt any *one* part of the following:** **10x1=10**

a. What is Bluetooth? Show a neat diagram of Bluetooth protocol stack and sate the functions of Radio Layer, Baseband Layer, and L2CAP layer

b. What is CODA file system? Explain general goal of CODA file system in brief.

7. **Attempt any *one* part of the following:** **10x1=10**

a. Evaluate the performance of AODV protocol as compare to DSR protocol in MANET.

b. Evaluate the performance of DSR routing algorithm in MANET.

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