Roll No ....

MCTA-302(D)
M.E./M.Tech., III Semester
Examination, December 2020
Mobile Computing
(Elective-II)
Time : Three Hours

Maximum Marks : 70

Note: i)   Attempt any five questions.

ii)   All questions carry equal marks.

iii)   Figure to the right indicate the full marks.

1. a)   What are the various characteristics of a cellular mobile system? Discuss challenges being faced to support this system.   7

    b)   Discuss three multiple access methods used in cellular systems.   7

2. a)   What is Hidden node and exposed node problem? How is it resolved?   7

    b)   Describe various multiplexing techniques. Explain why a given band is used most efficiently in CDMA.   7

3. a)   Explain concept of cell splitting with neat diagram. Show that if cell radius is reduced by factor of 1/2 then traffic load increases by factor of 4. Assume shape of cell is circular.   7

    b)   Explain co-channel interference and how to manage co-channel interference.   7

4. a) What does it mean when call is dropped? Write the formula to calculate the dropped call rate. Discuss any method to fixed dropped calls. 7

   b) Explain the concept of "Frequency Reuse" as applied to cellular communications. What are the advantages of this approach? How does it increase the capacity of the system? 7

5. a) What is Handoff? What is roaming? How do you perform handoff during roaming? 7

   b) Assess why is the MAC protocol designed for infrastructure based wireless network may not work satisfactory in infrastructure-less environment. Justify your answer. 7

6. a) List and define the entities of mobile IP and describe data transfer from a mobile node to a fixed node and vice-versa. 7

   b) Where and when can collisions occur while accessing the GSM system? Compare possible collisions caused by data transmission in standard GSM. 7

7. a) Illustrate the difference between Multicast Open Shortest Path First (MOSPF), and Distance Vector Multicast Routing Protocol (DVMRP). 7

   b) What is Mobile Assisted Handoff? Differentiate between hard handoff and soft handoff. 7

8. a) Explain registration and location updation of wireless mobile terminal in a foreign network. 7

   b) How does a mobile node discovers a foreign agent when it moves one location to another? 7

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