

**B.TECH.**  
**(SEM VII) THEORY EXAMINATION 2022-23**  
**MOBILE COMPUTING**

Time: 3 Hours

Total Marks: 100

**Note:** Attempt all Sections. If you require any missing data, then choose suitably.

**SECTION A**

**1. Attempt all questions in brief. 2x10 = 20**

- (a) What do you understand by Mobile Computing?
- (b) Differentiate between soft and hard handoff.
- (c) Distinguish between collisions on PHY and MAC layer.
- (d) What is Mobile IP?
- (e) Explain the need of mobile database.
- (f) How data replication can increase performance?
- (g) Explain kangaroo transaction processing.
- (h) How does a mobile agent function in a network?
- (i) Describe Temporary Ordered Routing Algorithm (TORA).
- (j) Which routing algorithm used in MANETs?

**SECTION B**

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

- (a) Describe cellular systems with three levels and seven level clustering. Also explain the merits and demerits of it.
- (b) What is Bluetooth? Explain the Bluetooth Protocol stack and describe the specific functionality of each protocol layer?
- (c) Describe, Briefly, design of Coda file system and hence explains the different states of Venus. Draw a State transition diagram of Venus.
- (d) What is mobile agent system? What are the security design and performance issues in mobile agent systems?
- (e) Explain the (quality of service) QoS in different terms of mobile adhoc networks.

**SECTION C**

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

- (a) Describe the GSM architecture and also describe different elements in this architecture.
- (b) Describe various multiplexing techniques in brief. "CSMA/CD is not a suitable protocol for wireless LAN". Give reasons in favor of or against the statement.

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

- (a) Draw and define 802.11 protocol stack regarding to the following points:
  - (i) Physical layer

- (ii) MAC sub-layer protocol
- (iii) Frame architecture

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

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

- (a) Explain adaptive clustering for wireless networks. How clustering is done in wireless transmission? Give a suitable example.
- (b) Illustrate different data management issues in mobile computing. Also discuss different strategies of data replication.

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

- (a) Discuss the schemes of mobile transaction management. List out various issues concerned to transaction management.
- (b) What is the basic purpose of agent advertisement in packet forwarding? Explain the message format of agent advertisement.

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

- (a) What are the characteristics of MANET? Explain the process of Path Discovery and Path Maintenance in DSR Routing Protocols.
- (b) Explain the listed routing protocols:
  - (i) Destination sequenced Distance-Vector(DSDV)
  - (ii) Fisheye State Routing