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**MCA**  
**(SEM IV) THEORY EXAMINATION 2021-22**  
**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.****2\*10 = 20**

| Q. No. | Questions  | CO |
|--------|--|----|
| (a)    | What is Frequency reuse?   | 1  |
| (b)    | What are the reasons for considering the shape of the cell as hexagonal in cellular communication? | 1  |
| (c)    | What is data broadcasting in mobile environment?   | 2  |
| (d)    | Write down application area of Wireless Application Protocol.                                      | 2  |
| (e)    | What are the data management issues in mobile computing?   | 3  |
| (f)    | What do you mean by distributed file system?   | 3  |
| (g)    | What is fault tolerance in mobile computing?   | 4  |
| (h)    | Discuss ACID properties with reference transaction in mobile environment.                          | 4  |
| (i)    | List the Quality of Service (QoS) parameters in MANET.   | 5  |
| (j)    | List the four applications area of Ad-Hoc network?   | 5  |

**SECTION B****2. Attempt any three of the following:****10\*3 = 30**

| Q. No. | Questions   | CO |
|--------|---|----|
| (a)    | Discuss the limitations of mobile computing?  | 1  |
| (b)    | What are the hidden and exposed nodes problems in WLAN?                                 | 2  |
| (c)    | What is M-TCP and how does M-TCP maintain end-to-end semantics?                         | 3  |
| (d)    | Discuss the security issues with reference to mobile agent-based computing environment. | 4  |
| (e)    | Discuss Quality of Services (QoS) issues in Adhoc network.                              | 5  |

**SECTION C****3. Attempt any one part of the following:****10\*1 = 10**

| Q. No. | Questions  | CO |
|--------|--|----|
| (a)    | What do you mean by handoff? Discuss various types of handoffs with suitable diagrams.         | 1  |
| (b)    | Explain Global System for Mobile (GSM) architecture and its sub-systems with suitable diagram. | 1  |

**4. Attempt any one part of the following:****10 \*1 = 10**

| Q. No. | Questions   | CO |
|--------|---|----|
| (a)    | What is mobile IP? Explain agent discovery and registration process in mobile IP.                         | 2  |
| (b)    | What is Wireless Application Protocol (WAP)? Also explain WAP layered architecture with suitable diagram. | 2  |



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5. **Attempt any one part of the following:** **10\*1 = 10**

| Q. No. | Questions  | CO |
|--------|--|----|
| (a)    | Discuss various data delivery models with suitable example.                                | 3  |
| (b)    | Discuss CODA file system? How it deals with disconnected operations in mobile environment. | 3  |

6. **Attempt any one part of the following:** **10\*1 = 10**

| Q. No. | Questions  | CO |
|--------|--|----|
| (a)    | How transaction processing in mobile computing environment is different from stationary environment?               | 4  |
| (b)    | Explain the following with reference to transaction management<br>(i) Data Dissemination<br>(ii) Cache Consistency | 4  |

7. **Attempt any one part of the following:** **10\*1 = 10**

| Q. No. | Questions   | CO |
|--------|---|----|
| (a)    | Discuss the classification of routing protocols in mobile Adhoc network. Also explain working of Dynamic Source Routing (DSR) protocol.                   | 5  |
| (b)    | Write short notes of<br>(i) Adhoc On-Demand Distance Vector (AODV) Routing Protocol<br>(ii) Destination-Sequenced Distance Vector (DSDV) Routing Protocol | 5  |