

Reg No.: \_\_\_\_\_

Name: \_\_\_\_\_

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

B.Tech Degree S8 (R,S) / S8 (PT) (R) Examination May 2024 (2019 Scheme)



Course Code: CST476

Course Name: MOBILE COMPUTING

Max. Marks: 100

Duration: 3 Hours

**PART A***Answer all questions, each carries 3 marks.*

Marks

- |    |  |     |
|----|--|-----|
| 1  | Define mobile computing & list out its advantages.   | (3) |
| 2  | Explain different types of middleware and gateways required in the architecture of mobile computing. | (3) |
| 3  | Why does the multiple access technologies are important in wireless communication system?            | (3) |
| 4  | Explain the working of Satellite system with diagram.  | (3) |
| 5  | What is meant by routing in Ad-hoc networks?   | (3) |
| 6  | Write a short note on WTLS(Wireless Transport Layer Security).                                       | (3) |
| 7  | List out the steps involved in DHCP for assigning an IP address to a newly connected host machine.   | (3) |
| 8  | Write about Wireless Datagram Protocol (WDP).  | (3) |
| 9  | What are the major security components of mobile computing?  | (3) |
| 10 | Discuss about the 5G mobile networks.  | (3) |

**PART B***Answer any one full question from each module, each carries 14 marks.***Module I**

- |    |   |     |
|----|---|-----|
| 11 | a) Explain any 4 functions and 3 applications of mobile computing.  | (7) |
|    | b) Describe internet-Ubiquitous networks mentioning the significance and functions of core, edge and access network with diagram. | (7) |

**OR**

- |    |   |     |
|----|---|-----|
| 12 | a) Explain in detail the three-tier architecture of mobile computing. | (7) |
|    | b) List out and explain the design issues for mobile computing.       | (7) |

**Module II**

- 13 a) How does spread spectrum techniques eliminates narrow band interference during signal transmission? (7)
- b) Elaborate the working of following medium access control protocols: (7)
- a. TDMA                      b. FDMA

**OR**

- 14 a) Explain about any two Satellite Orbits. (7)
- b) Describe the architecture of GSM network. (7)

**Module III**

- 15 a) Write the design goals of Wireless LAN and its applications. (7)
- b) Explain the protocol architecture of IEEE 802.11 standard with suitable diagram. (7)

**OR**

- 16 a) Discuss the architecture of HIPERLAN. (7)
- b) Explain the working procedure and protocol stack architecture of Bluetooth technology with suitable diagrams. (7)

**Module IV**

- 17 a) Explain the router discovery process in Mobile IP. (7)
- b) Describe the working of DHCP in Mobile computing with neat diagrams (7)

**OR**

- 18 a) Explain the working procedure of Dynamic Source Routing(DSR) Protocol with suitable example. (7)
- b) How does Wireless Application Protocol(WAP) provide mobility support in mobile applications? Explain with suitable diagram. (7)

**Module V**

- 19 a) Explain the functioning of Orthogonal frequency division multiplexing. (7)
- b) Explain different security models in mobile computing. (7)

**OR**

- 20 a) Explain the different security techniques and algorithms used in mobile computing (7)
- b) Describe in detail any 7 pillars of 5G. (7)

\*\*\*\*\*