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Reg No.:_____    Name:_____

# APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

Sixth semester B.Tech degree examinations (S), September 2020

## Course Code: CS364
## Course Name: MOBILE COMPUTING

Max. Marks: 100                                     Duration: 3 Hours

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

| | | |
|---|---|---|
| 1 | Differentiate between Telecommunication networks and Internet? | (3) |
| 2 | List the functions of following middleware? | (3) |
| | a) Message Oriented Middleware  b) Transaction Processing Middleware | |
| 3 | Write the functions of Home Location Register (HLR) and Visitors Location Register (VLR) in GSM? | (3) |
| 4 | Why spread spectrum is used in wireless communication? List the benefits? | (3) |

### PART B
*Answer any two full questions, each carries 9 marks.*

| | | | |
|---|---|---|---|
| 5 | a) | Differentiate between TDMA, SDMA and FDMA? | (5) |
| | b) | What are the functions of Transcoding Middleware? Give two examples? | (4) |
| 6 | a) | Explain the various applications of mobile computing. | (5) |
| | b) | List out and explain the design issues for mobile computing. | (4) |
| 7 | | Explain the working of GSM with the help of a neat diagram. | (9) |

### PART C
*Answer all questions, each carries 3 marks.*

| | | |
|---|---|---|
| 8 | Classify the routing algorithms used in Mobile Ad hoc Network (MANET). | (3) |
| 9 | Write the limitations of conventional TCP (for wired network) to be used in mobile networks? | (3) |
| 10 | Write three benefits of WAP (Wireless Access Protocol)? | (3) |
| 11 | List out the steps involved in DHCP for assigning an IP address to a newly connected host machine. | (3) |

### PART D
*Answer any two full questions, each carries 9 marks.*

| | | | |
|---|---|---|---|
| 12 | | Describe the working of Dynamic Source Routing with suitable example. | (9) |
| 13 | a) | Explain channel allocation strategies in cellular networks? | (5) |

|      | b) | List out two Hand-off prioritization techniques? | (4) |
|------|----|--------------------------------------------------|-----|
| 14   | a) | Describe the following Terminologies used in Mobile IP | (3) |

a) Home Agent (HA)    b) Foreign Agent (FA)    c) Care-of Address (COA)

|      | b) | Explain the agent discovery process in Mobile IP. | (6) |

## PART E

### *Answer any four full questions, each carries 10 marks.*

| 15 |    | Explain about Mobile Transport Layer approaches and compare it's pros and cons? | (10) |
|----|----|---------------------------------------------------------------------------------|------|
| 16 |    | With neat sketches and illustration, discuss the WAP architecture in detail. | (10) |
| 17 | a) | What are uses of following components in Mobile computing? | (6) |

a) XML   b) J2ME   c) JavaCard

|    | b) | List any four features of following mobile operating systems? | (4) |
|----|----|---------------------------------------------------------------|-----|

a) PalmOS      b) Android

| 18 | a) | Explain the working procedure and  protocol stack architecture of Bluetooth technology with suitable diagrams. | (6) |
|----|----|----------------------------------------------------------------------------------------------------------------|-----|
|    | b) | Briefly explain Super core concept in 5G? List two benefits? | (4) |
| 19 | a) | Discuss about the various security issues in mobile networks? | (6) |
|    | b) | What are the benefits of 5G wireless technology? | (4) |
| 20 | a) | Explain the LTE architecture and Interface? | (6) |
|    | b) | Compare Li-Fi and Wi-Fi. | (4) |

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