

Code No: **RT41053**

# R13

# Set No. 1

**IV B.Tech I Semester Regular/Supplementary Examinations, October/November - 2017**

# MOBILE COMPUTING

**(Common to Computer Science and Engineering and Information Technology)**

**Time: 3 hours**

**Max. Marks: 70**

**Question paper consists of Part-A and Part-B**

**Answer ALL sub questions from Part-A**

**Answer any THREE questions from Part-B**

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**PART-A(22 Marks)**

1. a) Bring out the limitations of mobile devices. [4]
- b) How does CSMA minimize fading? [3]
- c) How does a mobile node discover it has moved? [4]
- d) What is Snooping TCP? [4]
- e) Differentiate symmetric and asymmetric communication system. [4]
- f) State the challenges of a MANET. [3]

**PART-B**(3x16 = 48 Marks)

2. a) Discuss the protocol architecture of GSM. [10]  
b) What are the functions of authentication and encryption in GSM? [6]
3. What are the motivations for a specialized MAC? Discuss in detail the multiple access with collision avoidance techniques. [16]
4. a) Explain the basic requirements of mobile IP. [8]  
b) Explain how tunneling works in general and especially for mobile IP using IP-in-IP, minimal, and generic routing encapsulation respectively. Discuss the advantages and disadvantages of these three methods. [8]
5. a) Explain the concept behind the traditional TCP. What are the improvements that are made into the classical TCP? [8]  
b) Why do we go for ITCP? What the advantages and disadvantages of it. [8]
6. a) Explain the operation of selective tuning and indexing techniques. [10]  
b) Describe domain-dependent specific rules for data synchronization. [6]
7. a) Explain the WML script used in mobile devices. [8]  
b) Discuss MAC layer Bluetooth system. [8]

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## Set No. 2

IV B.Tech I Semester Regular/Supplementary Examinations, October/November - 2017

# MOBILE COMPUTING

**(Common to Computer Science and Engineering and Information Technology)**

**Time: 3 hours**

**Max. Marks: 70**

**Question paper consists of Part-A and Part-B**

**Answer ALL sub questions from Part-A**

**Answer any THREE questions from Part-B**

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**PART–A(22 Marks)**

1.
  - a) How much of the original GSM network does GPRS need? Which elements of the network perform the data transfer? [4]
  - b) Why do Hidden and Exposed terminal problems arise? [4]
  - c) What is need for tunneling and encapsulation? [3]
  - d) What happens to standard TCP in the case of disconnection? [3]
  - e) List out the advantages and disadvantages of pull based mechanisms. [4]
  - f) How does WSP solve HTTP problems in wireless mobile environments? [4]

**PART-B**(3x16 = 48 Marks)

2. a) Describe the mobile computing architecture with a neat diagram. [8]  
b) Discuss about the mobile services and data services in GSM. [8]
3. a) Discuss the protocol architecture of IEEE 802.11. [8]  
b) What is MAC? Differentiate between Near and Far terminals in MAC? [8]
4. a) Explain mechanism for IP packet delivery using mobile IP. [8]  
b) Explain DHCP in detail. [8]
5. a) Explain about hoarding techniques that are used in database. [8]  
b) Describe query processing in detail. [8]
6. a) Discuss in detail about communication asymmetry with an illustrate example. [8]  
b) Describe in detail about selective tuning techniques. [8]
7. a) Explain about Dynamic source routing protocol inMANETs. [8]  
b) Brief out the features and need about the XML. [8]

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**R13****Set No. 3****IV B.Tech I Semester Regular/Supplementary Examinations, October/November - 2017****MOBILE COMPUTING****(Common to Computer Science and Engineering and Information Technology)****Time: 3 hours****Max. Marks: 70***Question paper consists of Part-A and Part-B**Answer ALL sub questions from Part-A**Answer any THREE questions from Part-B***\*\*\*\*\*****PART-A(22 Marks)**

1. a) Explain the role of HLR entity of a GSM network. [3]  
b) What could be quick 'solutions' and why don't they work? [3]  
c) Explain in brief about route optimization in mobile networks. [4]  
d) Write the advantages and disadvantages of mobile TCP. [4]  
e) Describe data synchronization. [4]  
f) What are the routing metrics in wireless adhoc network? [4]

**PART-B(3x16 = 48 Marks)**

2. a) Explain about the novel applications and limitations of mobile computing. [8]  
b) Explain the security services of GSM. [8]
3. a) Tabulate SDMA, TDMA, FDMA and CDMA. [8]  
b) Explain in detail hidden and exposed terminals. [8]
4. a) Discuss in detail about generic routing encapsulation in mobile IP. [8]  
b) Discuss about different ways of registration depending on the location of the COA. [8]
5. a) Explain in detail different cache invalidation mechanisms. [8]  
b) Describe in detail about quality of service issues. [8]
6. a) Explain the concept of push based data dissemination mechanism and focus on its advantages and disadvantages. [8]  
b) Discuss in detail about communication asymmetry. [8]
7. a) Describe the Bluetooth protocol stack with neat diagram. [8]  
b) List and explain the applications of adhoc networks. [8]

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**R13****Set No. 4****IV B.Tech I Semester Regular/Supplementary Examinations, October/November - 2017**  
**MOBILE COMPUTING****(Common to Computer Science and Engineering and Information Technology)****Time: 3 hours****Max. Marks: 70***Question paper consists of Part-A and Part-B**Answer ALL sub questions from Part-A**Answer any THREE questions from Part-B***\*\*\*\*\*****PART-A(22 Marks)**

1. a) Explain how mobility management is done in GSM. [4]
- b) Discuss SDMA in detail. [3]
- c) Define care of address (COA) and what are the two different possibilities for the location of COA? [3]
- d) Write the advantages and disadvantages of Indirect-TCP. [4]
- e) Explain directory method. [4]
- f) Write the packages in J2SE. [4]

**PART-B(3x16 = 48 Marks)**

2. Explain in detail GPRS. [16]
3. a) Explain why do MAC scheme in wired network fail in wireless networks and how does the multiple access with collision avoidance scheme work? [8]
- b) Explain in detail about Code division multiple access (CDMA). [8]
4. a) Explain how agent advertisement is done in mobile IP. [8]
- b) Describe the process of optimization in mobile IP with a suitable timeline diagram. [8]
5. a) Explain transaction oriented TCP. How does the integration of connection establishment, data transfer and close functions? [8]
- b) Explain fast transmission and fast recovery. [8]
6. a) Explain different types of synchronization. [8]
- b) Explain in detail push based data delivery methods/ [8]
7. a) Explain in detail DSDV routing algorithm for MANETS with an example. [8]
- b) Write about J2ME in briefly. [8]