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Question Paper Code : 57492

04/06/2016

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B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2016

Sixth Semester

Computer Science and Engineering

IT 6601 – MOBILE COMPUTING

(Common to Information Technology

(Regulations 2013)

Time : Three Hours

Maximum : 100 Marks

Answer ALL questions.

PART – A (10 × 2 = 20 Marks)

1. List the advantages of mobile computing.
2. Explain hidden and exposed terminal problems in infrastructure-less network.
3. What is DHCP ?
4. What is encapsulation in mobile IP ?
5. List the 3 important features of GSM security.
6. What are the main elements of UMTS.
7. List the characteristics of MANETs.
8. Compare MANET Vs VANET.
9. Give four examples of Mobile OS.
10. What is M-Commerce ?

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PART – B (5 × 16 = 80 Marks)

11. (a) (i) Explain the characteristics of Mobile computing. (8)
(ii) Explain the structure of Mobile Computing Application. (8)

OR

- (b) Explain the various taxonomy of MAC protocols in detail. (16)

12. (a) (i) With a diagram explain DHCP and its protocol architecture. (8)
(ii) Explain IP-in-IP, Minimal IP and GRE encapsulation methods. (8)

OR

- (b) (i) With a neat diagram explain the Architecture of TCP/IP. (8)
(ii) Explain the various improvements in TCP performance with diagram. (8)

13. (a) (i) Describe GSM architecture and its services in detail. (8)
(ii) Explain GSM Authentication and Security. (8)

OR

- (b) (i) Explain GPRS and its Protocol architecture. (8)
(ii) Explain in detail about UMTS architecture. (8)

14. (a) (i) Explain Characteristics , Applications of MANET. (4 + 4)
(ii) Explain DSR Routing Protocols in detail. (8)

OR

- (b) (i) Draw and explain the architecture of VANET. (8)
(ii) Explain the various Security and attacks on VANET. (8)

15. (a) (i) Explain the components of Mobile Operating Systems. (8)
(ii) Write short notes on Android SDK. (8)

OR

- (b) (i) Explain the various applications of M-Commerce. (8)
(ii) Explain the Mobile payment schemes and Security issues. (4 + 4)

PART B — (5 × 16 = 80 marks)

11. (a) (i) Explain the wireless MAC issues in detail. (8)
(ii) Explain the various applications of mobile computing. (8)

Or

- (b) (i) Explain fixed assignment scheme with a neat diagram. (8)
(ii) Explain MAC protocols for Ad Hoc Networks. (8)
12. (a) With a neat diagram explain how packet delivery to and from a mobile node is transferred in mobile IP. (16)

Or

- (b) What is encapsulation? Explain in detail the various encapsulation techniques in mobile IP. (16)
13. (a) Explain the GSM architecture in detail. (16)

Or

- (b) Explain GPRS protocol architecture. (16)
14. (a) Explain the design issues of MANET routing protocols in detail. (16)

Or

- (b) Explain any two VANET routing protocol with an example. (16)
15. (a) Explain various operating systems for mobile computing. (16)

Or

- (b) Write detailed notes on mobile commerce. (16)

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Question Paper Code : 72056

B.E./B.Tech. DEGREE EXAMINATION, APRIL/MAY 2017.

Sixth Semester

Information Technology

IT 6601 — MOBILE COMPUTING

(Common to Computer Science and Engineering)

(Regulations 2013)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Differentiate mobile computing and Wireless Networking.
2. List some random assignment scheme.
3. What is Route Optimization?
4. List the modifications proposed in single-hop and Multi-hop Wireless Networks.
5. Name the Teleservices provided by GSM.
6. Write the suggestions of mobile phone with respect to human body.
7. List the applications of MANETs.
8. Distinguish Proactive and Reactive protocols.
9. What are the special constraints and requirements of Mobile O/S.
10. Explain the Pros and Cons of M-commerce.

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Question Paper Code : 41298

15/05/18

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B.E./B.Tech. DEGREE EXAMINATION, APRIL/MAY 2018
Sixth Semester
Information Technology
IT 6601 – MOBILE COMPUTING
(Common to Computer Science and Engineering)
(Regulations 2013)

Time : Three Hours

Maximum : 100 Marks

Answer ALL questions

PART – A

(10×2=20 Marks)

1. Distinguish between mobile computing and wireless networking.
2. List the issues of wireless MAC.
3. What is the purpose of DHCP ?
4. What is the purpose of agent solicitation message ?
5. What is frequency range of uplink and downlink in GSM network ?
6. What are the informations are stored in SIM ?
7. Compare VANET with MANET.
8. Differentiate cellular with adhoc networks.
9. What is M-Commerce ? List its disadvantages.
10. What are the constraints of mobile device OS ?



PART – B

(5×13=65 Marks)

11. a) i) Discuss in detail the structure of a mobile computing application. (6)
 ii) Apply mobile computing to design Taxi dispatcher and monitoring service. Explain the components in detail. (7)

(OR)

- b) i) List the characteristics of mobile systems. (6)
 ii) What is CSMA ? What are the categories of CSMA ? Explain their working with advantages and disadvantages. (7)

12. a) i) Explain Indirect TCP(I-TCP) with the help of a suitable schematic diagram. (8)
 ii) Explain the Agent Discovery Process in Mobile IP. (5)

(OR)

- b) i) Describe how mobile TCP improves TCP efficiency for mobile networks ? How does mobile TCP maintain end to end semantics ? (8)
 ii) Briefly explain about the adaptation of TCP window. (5)

13. a) Write in detail about the various types of handover in GSM. Also discuss the timeline diagram of the Intra MSC handover. (13)

(OR)

- b) Explain in detail network architecture of UMTS with a neat diagram. (13)
 14. a) Describe the architecture of VANET with a neat diagram. (13)

(OR)

- b) Explain the design issues in MANET and the applications of adhoc network. (13)

15. a) Explain in detail components of iPhone operating systems. List the special features of a mobile operating system. (13)

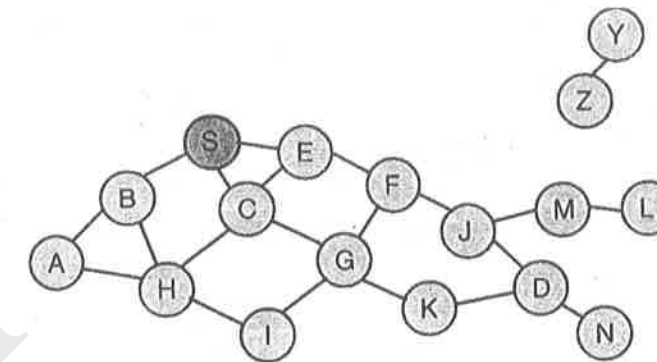
(OR)

- b) Explain in detail mobile payment schemes and their security issues. (13)

PART – C

(1×15=15 Marks)

16. a) Consider the network given below. Here 'S' is source node and 'D' is target node. Illustrate the process of route discovery, route reply, data delivery and route caching using DSR. Explain the approach.



(OR)

- b) Enumerate the processes involved in data packet delivery using mobile IP in adhoc networks ?

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Question Paper Code : 53238

B.E./B.Tech. DEGREE EXAMINATIONS, APRIL/MAY 2019.

Sixth Semester

Information Technology

IT 6601 — MOBILE COMPUTING

(Common to Computer Science and Engineering)

(Regulation 2013)

(Also Common to PTIT 6601 — Mobile Computing for B.E. Part Time-Fifth Semester
— Computer Science and Engineering — Regulation 2014)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What do you mean by mobile computing?
2. Give some examples of reservation-based schemes in MAC protocols.
3. Identify the desirable features of Mobile IP.
4. Show the structure of a TCP segment.
5. Identify the services offered by GPRS.
6. List out the advantages of UMTS networks over 2G networks.
7. Why is routing in MANET so complex task?
8. Compare MANET versus VANET.
9. List some special constraints for mobile operating systems.
10. What are the desirable properties of a mobile payment system?

PART B — (5 × 13 = 65 marks)

11. (a) (i) Describe the characteristics of mobile computing. (5)
(ii) Explain the structure of mobile computing application with an illustrative example. (8)

Or

- (b) Summarize the functions of Fixed-assignment schemes in MAC protocols.

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Draw a neat diagram explain the packet delivery process between the correspondent node and the mobile node.

Or

Outline the popular TCP congestion control algorithms.

Outline the services offered by GSM. (7)

Analyze the important features associated with security in GSM. (6)

Or

Draw and explain the architecture of GPRS. List its advantages and limitations.

Describe the characteristics and applications of Mobile Ad hoc networks.

Or

Summarize the two important classes of routing protocols for traditional networks.

Outline the features of Windows mobile, Symbian and Android operating systems.

Or

Explain the structure of Mobile commerce framework. (9)

State the pros and cons of Mobile Commerce. (4)

PART C — (1 × 15 = 15 marks)

Organize the steps involved in operation of Destination-Sequenced Distance-Vector Routing protocol. Illustrate with an example.

Or

Discuss in detail about the mobile IP working principle with a neat diagram. Explain the tunneling operation with a encapsulated format message. (15)

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Question Paper Code : 80598

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2016.

Sixth Semester

Computer Science and Engineering

IT 6601 — MOBILE COMPUTING

(Common to Information Technology)

(Regulations 2013)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — ($10 \times 2 = 20$ marks)

1. What are the limitations of Mobile computing?
2. What are the different Random Assignment Scheme in MAC?
3. Define COA
4. Illustrate the use of BOOTP protocol?
5. Write about the supplementary services in GSM?
6. What is multicasting?
7. Outline the concept of RTT?
8. Compare and contrast MANET Vs VANET
9. Define POS.
10. Differentiate E-Commerce and M-Commerce.

PART B — ($5 \times 16 = 80$ marks)

11. (a) Differentiate between FDMA, TDMA and CDMA. (16)

Or

- (b) (i) Explain the Distinguishing features of various generations of wireless networks. (8)
- (ii) Describe the applications of Mobile computing. (8)

12. (a) Explain about the Key mechanism in Mobile IP. (16)

Or

- (b) Give the comparison of various TCP advantages and Disadvantages in Wireless networking. (16)
13. (a) (i) What are the functions of authentication and encryption in GSM? How is system security maintained. (8)
- (ii) Explain in detail about the handovers of GSM. (8)

Or

- (b) (i) Explain the functions of GPRS protocol stack with a diagram. (8)
- (ii) Explain in detail about UMTS architecture. (8)

14. (a) Explain the Traditional Routing Protocols. (16)

Or

- (b) (i) What are Multicast routing protocols. (8)
- (ii) What are reactive and proactive protocols? Specify its advantages and disadvantages. (8)
15. (a) (i) Compare and contrast the various Mobile OS. (10)
- (ii) Discuss the applications of M-Commerce. (6)

Or

- (b) (i) Explain Mobile Payment Models and security issues. (10)
- (ii) What is RFID? Explain few applications in which RFID is useful. (6)



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Question Paper Code : 50767

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2017

Sixth Semester

Information Technology

IT 6601 – MOBILE COMPUTING

Common to Computer Science and Engineering

(Regulations 2013)

Time : Three Hours

Maximum : 100 Marks

Answer ALL questions

PART – A

(10×2=20 Marks)

1. List out the differences between Mobile Computing and Wireless Networking.
2. “MAC protocol designed for infrastructure based wireless network may not work satisfactory in infrastructure-less environment.” – Justify.
3. To which layer do each of the following protocols belong to ? What is their functionality ?
 - * RARP
 - * DNS.
4. Differentiate the functionalities of a foreign agent and home agent.
5. List the services of GPRS.
6. Define Handoff. What are its types ?
7. Compare AODV and DSR protocols.
8. What are the contents of link state advertisement message ?
9. What are the constraints in Mobile OS ?
10. What are the advantages and disadvantages of BlackBerry OS ?



PART – B

(5×16=80 Marks)

11. a) i) Explain hidden and exposed terminal problem in infrastructure-less network. (8)
ii) Describe architecture of mobile computing. (8)

(OR)

- b) What are the fixed assignment schemes of MAC protocol ? Explain their mechanism in detail. Compare and contrast them.

12. a) Illustrate packet delivery mechanism in Mobile IP network with a neat diagram.

(OR)

- b) Discuss and compare the various mechanisms used to improve the TCP performance in mobile networks.

13. a) Explain GSM architecture and its services with neat diagram.

(OR)

- b) Explain in detail about UMTS architecture and its services.

14. a) Discuss route discovery and route maintenance mechanisms in DSR with illustrations. List its merits and demerits.

(OR)

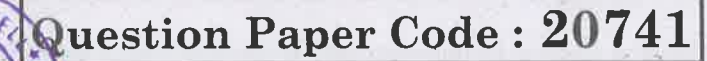
- b) Describe the architecture of VANET with the functionality of the components. Compare VANET with MANET.

15. a) Illustrate the process of mobile payment. Compare and contrast mobile payment schemes.

(OR)

- b) Explain android platform with its features, software stack and SDK.

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1. What are the challenges in mobile communication?
2. State the objectives of MAC protocols.
3. What is the key mechanism in mobile IP?
4. State the purpose of Home Location Register (HLR).
5. List the subsystems of GSM.
6. What is the function of Gateway GPRS support node (GGSN)?
7. Mention two main design issues of MANET ?
8. What are the important steps in Destination – Sequenced Distance – Vector Routing (DSDV)?
9. What are the features of Blackberry operating system?
10. Write any two features of windows phone.

PART B — (5 × 13 = 65 marks)

PART C — (1 × 15 = 15 marks)

11. (a) (i) Describe the various random assignment schemes that are used in MAC protocol. (8)
- (ii) Discuss the various Reservation Based Schemes in MAC protocol. (5)

Or

- (b) Explain in detail about hidden terminal problem and exposed terminal problem. (13)

12. (a) (i) Explain mobile IP requirement and terminologies. (8)
- (ii) Why the traditional IP cannot be used in the mobile network. In what way does mobile IP support mobile Hubs? (5)

Or

- (b) Define I-TCP and explain indirect TCP (I-TCP) with the help of a suitable schematic diagram. (13)

13. (a) Describe about the system architecture of Global System for Mobile Communication. (13)

Or

- (b) What is UMTS? Describe the function of HLR and VLR in call routing and roaming. (13)

14. (a) Illustrate DSR routing in detail and compare it with DSDV. (13)

Or

- (b) Explain the architecture of VANET and various security attacks on VANET. (13)

15. (a) What are the features of mobile operating system? Explain in detail about android SDK. (13)

Or

- (b) (i) Describe mobile payment system. Explain the different payment systems that are available. (8)
- (ii) What is M-commerce? Explain the advantages and disadvantages of M-commerce. (5)

16. (a) What is the reaction of standard TCP in case of packet loss? In what situation does this reaction make sense and why is it quite often problematic in the case of wireless networks and mobility? (15)

Or

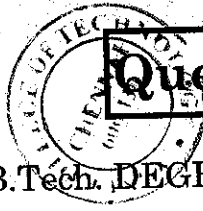
- (b) Explain android software stack with neat diagram. (15)

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Question Paper Code : 91773

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2019

Sixth Semester

Information Technology

IT6601 – MOBILE COMPUTING

(Common to Computer Science and Engineering)

(Regulations 2013)

(Also Common to PTIT6601 – Mobile Computing for B.E. (Part-Time) – Fifth Semester – Computer Science and Engineering – Regulations – 2014)

Time : Three Hours

Maximum : 100 Marks

Answer ALL questions

PART – A

(10×2=20 Marks)

1. Define mobile computing.
2. What are the issues present in MAC ?
3. What is the need for Mobile IP ?
4. What is Route Optimization ?
5. Name the teleservices provided by GSM.
6. In which way GPRS is better than GSM ?
7. Why routing in a MANET a complex task ?
8. Distinguish VANET and MANET.
9. What are the special constraints and requirements of Mobile O/S ?
10. What is M-commerce ?

PART – B

(5×13=65 Marks)

11. a) i) Explain with a neat diagram the structure of Mobile Computing. (8)
ii) Distinguish between Mobile Computing and Wireless Networking. (5)
- (OR)
- b) List different fixed assignment scheme with a neat diagram. (13)

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12. a) What problems would occur if the traditional TCP is used in mobile wireless environments ? Discuss how TCP can be adapted to work efficiently in mobile network environment. (13)

(OR)

- b) What are the main functions of DHCP ? Why is DHCP needed ? Can it be used when nodes are mobile ? Explain your answer. (13)

13. a) What is handoff ? Explain the GSM architecture in detail. (13)

(OR)

- b) Discuss briefly about GPRS. (13)

14. a) Briefly explain why the traditional packet routing protocols for wired networks cannot be used straight way in a MANET. Discuss how the routing protocols for traditional wired networks have been extended to work in a MANET. (13)

(OR)

- b) Explain the factors that make mobile ad-hoc networks more vulnerable to security attacks compared to the traditional networks. Also explain the major types of security attacks that are possible in a mobile ad-hoc network. How can each of these types of attacks be overcome ? (13)

15. a) Explain various operating systems for mobile computing. (13)

(OR)

- b) i) Write detailed notes on applications of mobile commerce. (8)

- ii) Explain with neat diagram the structure of Mobile Commerce. (5)

PART – C

(1×15=15 Marks)

16. a) Discuss briefly with an example about the process followed in Mobile Payment system with different payment schemes when a customer places an order to purchase an item from the trader. (15)

(OR)

- b) Discuss with neat diagram how a packet is delivered from a mobile node to another mobile node without losing its information during mobility of the nodes. (15)