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Question Paper Code : 21398

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2015.

Seventh Semester

Computer Science and Engineering

CS 2402/CS 72/10144 CS 703 — MOBILE AND PERVASIVE COMPUTING

(Regulations 2008/2010)

(Common to PTCS 2402/10144 CS 703 — Mobile and Pervasive Computing for B.E.
(Part-Time) Sixth Semester – Computer Science and Engineering
Regulations 2009/2010)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What are the ways to improve the efficiency of cellular networks?
2. Why cellular systems require handover procedures?
3. What is a piconet?
4. State the hidden terminal problem.
5. What is a MANET?
6. Distinguish between proactive and reactive routing protocols.
7. How Wireless Transaction Protocol (WTP) achieves reliability?
8. List the general features Wireless Session Protocol (WSP) offers for content exchange between cooperating clients and servers.
9. What is biometrics? Give example.
10. What is a Personal Digital Assistant (PDA)?

PART B — (5 × 16 = 80 marks)

11. (a) Explain with diagrammatic illustration the architecture of Global System for Mobile communications (GSM). (16)

Or

- (b) (i) What are the reasons for the delays in a GSM system for packet data traffic? Distinguish between circuit-switched and packet-oriented transmission. (8)
- (ii) What are the functions of authentication and encryption in GSM? How is system security maintained? Discuss. (8)

12. (a) (i) Explain with diagrammatic illustrations architecture of an infrastructure based IEEE 802.11. (12)

- (ii) Why is the physical layer in IEEE 802.11 subdivided? Discuss. (4)

Or

- (b) (i) Can a network be wireless, but not mobile? Discuss. (4)

- (ii) What is WiMAX? Explain the WiMAX architecture in detail. (12)

13. (a) (i) Explain with an example and diagrammatic illustration the process of tunneling and encapsulation in mobile IP. (8)

- (ii) Explain with diagrammatic illustration client initialization via Dynamic Host Configuration Protocol (DHCP). (8)

Or

- (b) (i) What are the benefits of location information for routing in ad-hoc networks, which problems arise? Explain with examples. (8)

- (ii) Explain AODV (ad-hoc on-demand distance vector) routing with an example. (8)

14. (a) Explain with diagrammatic illustration the components and interface of the Wireless Application Protocol (WAP) architecture. (16)

Or

- (b) (i) Explain with diagrammatic illustration Wireless Datagram Protocol (WDP) service primitives. (8)

- (ii) Explain with diagrammatic illustration Wireless Transport Layer Security (WTLS) establishing a secure session. (8)

15. (a) (i) What is pervasive computing? List and explain the goals of pervasive computing. (4)

- (ii) Present an example for pervasive computing environment and discuss the same. (12)

Or

- (b) How to develop and manage pervasive web applications? Discuss. (16)