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Question Paper Code : 16040

M.C.A. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2016.

Fifth Semester

MC 7503 — MOBILE COMPUTING

(Regulations 2013)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. How much of the original GSM network does GPRS need? Which elements of the network perform the data transfer?
2. List out the various value added services through GSM.
3. Why Bluetooth and wireless LAN won't interfere each other during data transmission?
4. State the role of Radio Subsystem in GSM.
5. How does registration on layer three of a mobile node work?
6. Specify the DHCP state transition diagram for acquiring the IP address.
7. Why and where is encapsulation needed for Mobile IP?
8. Compare indirect and Snooping TCP in terms of maintaining end-to-end connectivity.
9. What design constraints does the Mobile App have to work within?
10. Define Activity Life Cycle in mobile app development.

PART B — (5 × 13 = 65 marks)

11. (a) (i) How does the near/far effect influence TDMA systems? What happens in CDMA systems? What are countermeasures in TDMA systems? (7)
- (ii) Explain the countermeasures for interference in SDMA, TDMA, FDMA and CDMA systems. (6)

Or

- (b) Explain the GSM handover schemes and the reasons for their occurrence. Which resources need to be allocated during handover for data transmission using GPRS by satisfying QoS? (13)

12. (a) (i) Explain the fields of IEEE 802.11 MAC packet structure. Compare them with IEEE 802.11b MAC fields. (7)
- (ii) Explain the security mechanism adopted in Bluetooth technology. (6)

Or

- (b) Explain the IEEE 802.11 architecture in detail. (13)
13. (a) Specify the inefficiencies of mobile IP regarding data forwarding from a correspondent node to a mobile node. State the general problems of mobile IP regarding security. (13)

Or

- (b) (i) Compare Snooping TCP with Mobile TCP using example network scenarios. (8)
- (ii) How and why does I-TCP isolate problems on the wireless link? What are the main drawbacks of this solution? (5)
14. (a) (i) Compare proactive and reactive ad hoc routing mechanisms in brief. (8)
- (ii) Explain ABR route selection algorithm with an example. (5)

Or

- (b) Discuss in detail about the collaborative information processing for target tracking in wireless sensor networks with a suitable example scenario of your choice. (13)
15. (a) Discuss in detail about few android core libraries available for android app developers. (13)

Or

- (b) Explain Android application life cycle in detail. (13)

PART C — (1 × 15 = 15 marks)

16. (a) Suppose that many sensors are dispersed over an area for the purpose of monitoring physical quantities such as temperature, humidity, exposure to light. Organize a sensor network scenario for the mentioned cases to handle the queries injected from the external world. (15)

Or

- (b) (i) How power limitation in mobile devices motivates research into power aware and power efficient mobile protocols? Discuss in detail. (8)
- (ii) List down and explain in detail about the various commercial applications of Ad hoc and Sensor networks that have a significant impact in communication world. (7)