Reg. No. : | | | | | | | | | | |

Question Paper Code: 46202

B.E. / B.Tech. DEGREE EXAMINATION, MAY 2018

Sixth Semester

Computer Science and Engineering

14UCS602 - FUNDAMENTALS OF MOBILE COMPUTING

(Regulation 2014)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. The shape for the cellular region for maximum radio coverage is

(a) Circular (b) Square (c) Oval (d) Hexagon

2. The design process of selecting and allocating channel groups for all of the cellular base stations within a system is called

(a) Frequency Reuse (b) Amplitude Reuse
(c) Phase Reuse (d) Phase Planning

3. A good place for segmenting the connection between mobile host and correspondent host is at the _____of mobile IP.

(a) Foreign Agent (b) Home Agent
(c) Mobile host (d) Fixed Host

4. _____mechanism has a higher latency during handoff.

(a) Transaction-oriented TCP (b) Mobile TCP
(c) Indirect TCP (d) Snooping TCP

5. A Global Service for Mobile (GSM) uses two bands for duplex

(a) Data (b) Communications (c) Signals (d) Frames

6. UMTS uses a constant chipping rate of 3.84 Mchps/s. A channel uses the spreading Factor 16. What is the transfer rate?

(a) 120kbps (b) 480kbps (c) 460kbps (d) 960kbps

7. Trunking in a cellular network refers to

(a) Termination of a call
(b) Spectrum unavailability
(c) Accommodating large number of users in limited spectrum
(d) All the above

8. Which network does not rely on a pre existing infrastructure?

(a) Wireless Ad Hoc Network (b) Bluetooth
(c) HIPERLAN (d) Wireless Sensor Network

9. _____ is not a mobile operating system?

(a) Windows (b) Linux
(c) Symbian (d) Android

10. Which of the following statement are true about mobile operating system?

1. Symbian is a mobile operating system.
2. Mobile operating system cannot be based on Linux.
3. Blackberry is a phone and not a Mobile Operating System.
4. 'Windows Mobile' product is similar to 'Pocket PC'

(a) 1, 2, 3 only (b) 1, 3, 4 only
(c) 1, 2, 4 only (d) 1, 4 only

PART - B (5 x 2 = 10 Marks)

11. List the characteristics of Mobile Computing.

12. What are the requirements of a mobile IP?

13. State the attachment procedure followed for a mobile station in GPRS.

14. What is VANET?

15. List the steps involved in an application development using android SDK.

PART - C (5 x 16 = 80 Marks)

16. (a) (i) Explain in detail about mobile computing. Also classify its various applications in the real world scenario. (8)

(ii) Explain the structure of mobile computing application. (8)

Or

(b) (i) Describe the various random assignment schemes that are used in MAC protocol. (8)

(ii) Illustrate the working principle of contention based MAC Protocols. (8)

17. (a) List the entities of mobile IP and describe about the data transfer from a mobile node to a fixed node and vice versa. How does the MN discover that it has moved? Also discuss how optimization in achieved in mobile IP route. (16)

Or

(b) (i) Explain the architecture of TCP/IP with a neat sketch. (8)

(ii) Explain the various improvements in TCP performance in detail. (8)

18. (a) (i) Discuss in detail about the architecture, Services, and Localization in GSM. (10)

(ii) Discuss in detail about the architecture of GPRS. (6)

Or

(b) Elucidate how Universal Mobile Telecommunication System (UMTS) Network Architecture is organized hierarchically to support mobility of a subscriber from one location to another. (16)

19. (a) What is MANET? Discuss the routing mechanisms in MANET in detail. (16)

Or

(b) Explain how security is implemented in MANET and VANET. (16)

20. (a) Explore the architecture of the following mobile operating systems:
(i) Apple iOS
(ii) Android
(iii) Windows phone. (16)

Or

(b) Explain M-Commerce and security system in detail. (16)

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