Reg. No. :

Question Paper Code: 46202

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2019

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. Commonly used mode for 3G networks is

    (a) TDMA   (b) FDMA   (c) TDD   (d) FDD

3. In TD-SDMA, there is a frame of _____ milliseconds and the frame is divided into
   _____ time slots.

    (a) 5, 7   (b) 7, 5   (c) 2, 5   (d) 5, 2

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. Proactive is also called as _____ protocols.

   (a) Table Driven   (b) On demand routing   (c) Vector routing   (d) topology

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. Define MAC Protocol..

12. What are the requirements of Mobile IP?.

13. Define Handoff. What are its types?

14. Mention the steps involved in routing process of MANET.

15. List the payment systems in M-Commerce.

PART - C (5 x 16 = 80 Marks)

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16. (a) (i) Consider building a CSMA/CD network running at 1 Gbps over a 1 km cable with no repeaters. The signal speed in the cable is 200000km/sec. What is the minimum frame size? (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) (i) Explain the sliding window protocol in TCP/IP. (8)

    (ii) Examine the reason why congestion occurs in a network? Explain how does TCP detect and handle congestion. (8)

Or

(b) Explain in details about I-TCP with schematics diagram. (16)

18. (a) (i) Explain in detail about GSM architecture. (12)

    (ii) Explain how does a call gets terminated in mobile phones. (4)

Or

(b) What is UMTS? Explain in detail about UMTS. (16)

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

Or

(b) Write short notes on: (i) Dynamic source routing (ii) Destination Sequenced Distance Vector Routing. (16)

20. (a) What are the special constraints and requirements of mobile operating system? (16)

Or

(b) (i) Elaborate the mobile payment schemes and security issues. (8)

    (ii) Briefly explain the various applications of MCommerce. (8)

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