BRAINWARE UNIVERSITY

Term End Examination 2023-2024
Programme – MCA-2022
Course Name – Mobile Computing
Course Code - MCA403A
(Semester IV)

Full Marks : 60 **Time : 2:30 Hours**

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group-A
(Multiple Choice Type Question) 1 x 15=15

1. *Choose the correct alternative from the following :*

(i) Identify the correct option "The early FM push-to-talk telephone systems were used in"

a) Simplex mode b) Half duplex mode
c) Full duplex mode d) None of these

(ii) What does MIN stands for

a) Mobile Identification Number b) Mobile Internet
c) Mobility In Network d) None of these

(iii) What does WDP stands for –

a) Wireless design protocol b) Wireless data protocol
c) Wireless datagram protocol d) None of these

(iv) Choose correct option, MIMO was initially developed in the year _____"

a) 1970 b) 1990
c) 1960 d) 1985

(v) Audio channels are also known as _____.

a) Voice channels b) Image channels
c) Video channels d) Both a and b

(vi) HLR is _____.

a) Home Location Register b) Hide Location Register
c) Home Location Relay d) None of these

(vii) Choose correct option, "World Wide Web is being a standard by"

a) Worldwide corporation b) W3C
c) World Wide Consortium d) World Wide Web Standard

(viii) Which systems are expressed as spread-spectrum systems?

a) Frequency division multiple access systems b) Code division multiple access systems
c) Time-division multiple access systems d) Wireless communication systems

(ix) Predict the correct option, "Pure ALOHA is a"

a) Random access protocol
b) Scheduled access protocol
c) Hybrid access protocol
d) Demand access protocol

(x) Select the correct option, "Network layer at source is responsible for creating a packet from data coming from another _____"

a) Station
b) Link
c) Node
d) Protocol

(xi) Focus the advantage of using SDMA over other spread spectrum technique is

a) Mobile station battery consumption is low
b) Reduced spectral efficiency
c) Increased spectral efficiency
d) Both Mobile station battery consumption is low and Increased spectral efficiency are correct

(xii) Advantages of using OFDM include -1. Avoids complex equalizers ,2. Low symbol rate and guard interval ,3. Avoids ISI ,4. Multiple users at same frequency

a) 1,2 and 3 are correct
b) 2 and 3 are correct
c) 1, 2 and 4 are correct
d) All the four are correct

(xiii) TCP/IP layer is equivalent to combined Session, Presentation and _____

a) Network layer
b) Application layer
c) Transport layer
d) Physical layer

(xiv) Which NetWare protocol works on layer 3–network layer of the OSI model?

a) IPX
b) NCP
c) SPX
d) NetBIOS

(xv) Mobile commerce transactions targets to individuals in specific locations, at specific times

a) Location-Based Commerce (L-Commerce)
b) Personal Area Network (PAN)
c) Near-Field Communication (NFC)
d) Mobile Commerce (M-Commerce)

Group-B

(Short Answer Type Questions) 3 x 5=15

2. Explian how attacks are classified. (3)
3. Explain the role of DHCP in mobile network. (3)
4. Explain the functions of Home Location Register (HLR) and Visitors Location Register (VLR) in GSM? (3)
5. Define VANET. (3)
6. Write down the list of features of 802.11a, 802.11b, 802.11n WLAN standards. (3)

OR

Illustrate different requirements of Mobile IP. (3)

Group-C

(Long Answer Type Questions) 5 x 6=30

7. Using the mobile computing functionality diagram, define Bearer mobility and Device mobility. (5)
8. Analyze SHORT MESSAGE SERVICES (SMS) architecture and it's features in detail. (5)
9. Summarize the working of following medium access control protocols:a. TDMA b. FDMA c.CDMA (5)
10. Explain slow start mechanism in conventional TCP. What is the impact of high error rate and missing acknowledgements in wireless network on slow start? (5)
11. Explain the Applications of MANETs. (5)
12. Illustrate the classification of unicast MANET Routing Protocols. (5)

OR

Explain what is MIMO in mobile computing? What are main function MIMO in 5G Network? (5)

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