BRAINWARE UNIVERSITY

Term End Examination 2024-2025
Programme – Dip.CSE-2022
Course Name – Mobile Computing
Course Code - DCSE-PE501A
(Semester V)

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) Discuss the key components of a WAP Gateway.
a) HTTP client b) WML engine
c) Bearer selection d) Content rendering

(ii) Analyze the role of the WAP protocol stack in mobile internet services.
a) Security management b) User data interaction
c) Handles encryption d) Handles session management

(iii) Discuss the difference between WML and HTML.
a) WML is text-based b) HTML is more complex
c) WML has strict syntax rules d) WML has flexible data types

(iv) Analyze the limitations of WAP in modern mobile communications.
a) High cost b) Low bandwidth
c) Outdated protocol d) High latency

(v) Analyze the technologies used in Wireless Local Loop (WLL) systems.
a) Fiber optics b) Radio waves
c) Satellite signals d) Wi-Fi

(vi) Discuss the advantages of WLL over traditional wired telephone systems.
a) Cost reduction b) Quick deployment
c) Wireless integration d) Greater flexibility

(vii) Analyze how the WAP Gateway manages data communication between mobile devices and the internet.
a) Acts as a browser b) Converts mobile protocols
c) Optimizes data exchange d) Converts HTML to WML

(viii) Discuss how WML enables content delivery on mobile devices.

a) Enhances readability
b) Supports mobile browsing
c) Adds interactive features
d) Simplifies content display

(ix) Analyze the impact of WAP on early mobile internet adoption.

a) Faster internet speeds
b) Early mobile web success
c) Slow adoption
d) Extensive mobile data use

(x) Discuss the main objectives of IMT-2000 in global telecommunications.

a) Global seamless communication
b) Regional-specific communication
c) Focuses on 2G services
d) Only for developed countries

(xi) Discuss the role of the Mobile Switching Center (MSC) in GSM Architecture.

a) To manage base stations
b) To connect calls to other networks
c) To encrypt voice communications
d) To manage subscriber data

(xii) Analyze the function of WLAN in mobile data communication.

a) Provides wired connectivity in remote locations
b) Offers wireless connectivity within a limited area
c) Acts as a backbone network for mobile operators
d) Facilitates long-range communication

(xiii) Analyze the significance of the Access Point (AP) in a WLAN.

a) Provides IP addresses to all devices
b) Acts as the central hub connecting wireless devices to a wired network
c) Encrypts data for secure transmission
d) Controls access to the mobile network

(xiv) Define the importance of SSID in WLANs.

a) Identifies a specific wireless network for devices to connect to
b) Provides encryption for secure communication
c) Manages user authentication and access control
d) Controls the transmission power of the access point

(xv) Analyse the difference between WEP and WPA2 in WLAN security.

a) WPA2 uses stronger encryption and is more secure than WEP
b) WEP offers higher data rates than WPA2
c) WPA2 is less compatible with older devices compared to WEP
d) WEP is preferred for enterprise networks

Group-B

(Short Answer Type Questions) 3 x 5=15

2. Define the importance of Quality of Service (QoS) in 3G networks. (3)
3. Discuss the function of the GGSN in GPRS architecture. (3)
4. Discuss the basic architecture of a WLAN and its key components. (3)
5. Analyze Wireless Application Protocol (WAP) and its key benefits. (3)
6. Weigh the advantages of using W-CDMA over CDMA 2000 in modern networks. (3)

OR

Weigh the impact of IMT 2000 on global mobile telecommunications evolution. (3)

Group-C

(Long Answer Type Questions) 5 x 6=30

7. Weigh the differences between W-CDMA and CDMA2000 in terms of global adoption. (5)
8. Weigh the importance of Quality of Service (QoS) in 3G networks for mobile users. (5)

9. Compare the key features of CDMA2000 and how it differs from W-CDMA. (5)
10. Define the GSM architecture and discuss each of its key subsystems. How do these subsystems work together to provide global mobile communication services? (5)
11. Discuss the future trends in WLL technologies and their potential impact. (5)
12. Compare how W-CDMA and CDMA 2000 utilize frequency division techniques to enhance data transmission. (5)

OR

Compare the backward compatibility of W-CDMA and CDMA 2000 with earlier mobile systems. (5)

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