

WIRELESS NETWORKS AND MOBILE COMPUTING

Sub Code : 10CS831
Hrs/Week : 04
Total Hrs : 52

IA Marks : 25
Exam Hours : 03
Exam Marks : 100

PART-A

UNIT – 1

6 Hours

Mobile Computing Architecture: Types of Networks, Architecture for Mobile Computing, 3-tier Architecture, Design Considerations for Mobile Computing.

UNIT – 2

7 Hours

Wireless Networks – 1: GSM and SMS: Global Systems for Mobile Communication (GSM and Short Service Messages (SMS): GSM Architecture, Entities, Call routing in GSM, PLMN Interface, GSM Addresses and Identities, Network Aspects in GSM, Mobility Management, GSM Frequency allocation. Introduction to SMS, SMS Architecture, SM MT, SM MO, SMS as Information bearer, applications

UNIT – 3

6 Hours

Wireless Networks – 2: GPRS : GPRS and Packet Data Network, GPRS Network Architecture, GPRS Network Operations, Data Services in GPRS, Applications for GPRS, Billing and Charging in GPRS

UNIT – 4

7 Hours

Wireless Networks – 3: CDMA, 3G and WiMAX: Spread Spectrum technology, IS-95, CDMA versus GSM, Wireless Data, Third Generation Networks, Applications on 3G, Introduction to WiMAX.

PART - B

UNIT – 5

6 Hours

Mobile Client: Moving beyond desktop, Mobile handset overview, Mobile phones and their features, PDA, Design Constraints in applications for handheld devices. Mobile IP: Introduction, discovery, Registration, Tunneling, Cellular IP, Mobile IP with IPv6

UNIT – 6

7 Hours

Mobile OS and Computing Environment: Smart Client Architecture, The Client: User Interface, Data Storage, Performance, Data Synchronization, Messaging. The Server: Data Synchronization, Enterprise Data Source, Messaging. Mobile Operating Systems: WinCE, Palm OS, Symbian OS, Linux, Proprietary OS Client Development : The development process, Need analysis phase, Design phase, Implementation and Testing phase, Deployment phase, Development Tools, Device Emulators.

UNIT – 7

6 Hours

Building, Mobile Internet Applications: Thin client: Architecture, the client, Middleware, messaging Servers, Processing a Wireless request, Wireless Applications Protocol (WAP) Overview, Wireless Languages: Markup Languages, HDML, WML, HTML, cHTML, XHTML, VoiceXML.

UNIT – 8

7 Hours

J2ME: Introduction, CDC, CLDC, MIDP; Programming for CLDC, MIDlet model, Provisioning, MIDlet life-cycle, Creating new application, MIDlet event handling, GUI in MIDP, Low level GUI Components, Multimedia APIs; Communication in MIDP, Security Considerations in MIDP.

Text Books:

1. Dr. Ashok Talukder, Ms Roopa Yavagal, Mr. Hasan Ahmed: Mobile Computing, Technology, Applications and Service Creation, 2nd Edition, Tata McGraw Hill, 2010
2. Martyn Mallik: Mobile and Wireless Design Essentials, Wiley, 2003

Reference Books:

1. Raj kamal: Mobile Computing, Oxford University Press, 2007.
2. Iti Saha Misra: Wireless Communications and Networks, 3G and Beyond, Tata McGraw Hill, 2009.