D.K.M. COLLEGE FOR WOMEN (AUTONOMOUS),VELLORE-1.

DEPARTMENT OF COMPUTER SCIENCE AND APPLICATIONS

DATA COMMUNICATION AND NETWORKING

Class: I M.SC COMPUTER SCIENCE

UNIT-I SECTION-A (6 MARKS)

1. Write short notes on Data Communication
2. What are the advantages of distributed processing?
3. What are the key elements of a protocol? Why are standards needed?
4. What are the Three criteria necessary for an effective network?
5. What are the two types of line configuration? Define three transmission modes.
6. Explain briefly about categories of Networks.
7. Explain network and its uses.
8. Explain in detail about transmission mode with example.

UNIT-I SECTION-B (15 MARKS)

1. Discuss in detail about the function of the layers
2. Write a short note on
    i) Name the five basic network topologies
    ii) Network Application
3. What is purpose of standards organization? Explain briefly.
4. Explain about standard and standard organization.

UNIT-II SECTION-C (6 MARKS)

1. Compare the two methods of serial transmission. Discuss the advantages and disadvantages of each.
2. What are the different types of Errors? How will you detect it?
3. What is meant by Cyclic Redundancy Check?
4. How will you correct the errors?
5. Explain in detail about Error correction technique with example.
6. Explain in detail about Hamming Error correction technique.
7. Explain in detail about Digital data correction.
8. Explain in detail about digital data transmission .
9. Write a short note on fiber optic cable.
10. Explain in detail about coaxial cable.
11. Explain in detail about twisted pair cable.

UNIT-II SECTION-B (15 MARKS)

1. Explain the Unguided media in Transmission medium.
2. Explain the guided media in Transmission medium
3. What are the functions of a DTE? What are the functions of a DCE?
4. Explain in detail about various error detection techniques.
5. Explain in detail about Error Correction techniques with example.

UNIT-III SECTION-C (6 MARKS)

1. Explain the categories of Multiplexing?
2. What is meant by Packet Switching?
3. How dies a token ring LAN operate?
4. Compare packet switching with circuit switching
5. Explain in detail about circuit switching.
6. What is packet switching. Explain its categories.
7. Explain in detail about token ring.
8. Write a short note on project 802.

UNIT-III SECTION-B (15 MARKS)

1. Explain how multiplexing is applied in telephone system
2. Explain briefly about project 802.
3. Explain token ring with the method of implementation
4. What is meant by Circuit Switching?
5. Distinguish between Connection-Oriented and Connectionless Services.
6. Explain the application of Multiplexing
7. Discuss in detail about categories of multiplexing.
8. Explain Ethernet.
9. Explain in detail about Token ring with example.

UNIT-IV SECTION-A (6 MARKS)

1. What are the services of ISDN?
2. Discuss briefly the evaluation of ISDN.
3. Write a short note on history of ISDN.
4. Explain the services of Broadband ISDN method
5. Explain in detail about subscriber access to the ISDN.
6. Write a short note on x.25 layers.

UNIT-IV SECTION-B (15 MARKS)

1. Explain in detail layers of ISDN
2. Explain X.25 layers and its function
3. Explain various channels and subscribers to a BRI and PRI?
4. Explain in detail about Broadband ISDN.

UNIT-V SECTION-A (6 MARKS)

1. Explain the Transport Layers

2. Explain the Network Layers
3. Write short note on TCP/IP
4. write short notes on WWW.
5. Explain how to create web page in WWW.
6. Explain in detail about Repeaters.
7. Write short note on bridges.
8. Discuss briefly about Routers.
9. Write short note on Gateway.
10. Write short note on Datagram.

UNIT-V SECTION-B (15 MARKS)

1. Explain in detail about Link State Routing Algorithm.
2. Explain in detail about Distance vector Routing Algorithm.
3. Explain various internetworking Devices with example.
4. Discuss briefly about WWW
5. Write short notes on
    i) Repeaters
    ii) Bridges
    iii) Routers
5. Explain about TCP/IP protocol suite.

D.K.M COLLEGE FOR WOMEN (AUTONOMOUS), VELLORE-1

DEPARTMENT OF COMPUTER SCIENCE AND APPLICATIONS

DATA COMMUNICATION & NETWORKING

MODEL QUESTION PAPER

CLASS :I M.Sc., **SUB CODE: 16CPCS1D**

TIME : 3 Hrs **MARKS :75**

PART-A

Answer All the Questions **(5X6=30)**

1. (a) Explain about Data Communiocation and networking

(or)

(b) Explain about Transmission Mode

2. (a) Discuss about fiber optic cable.

(or)

(b) Explain about Error correction mechanism.

3. (a) Explain in detail about frequency division multiplxing.

(or)

(b) Compare between packet and circuit switching.

4. (a) Explain about broadband ISDN.

(or)

(b) Explain about digital network.

5. (a) Discuss about Routers.

(or)

(b)Explain about World Wide Web.

PART-B

Answer any Three Questions (3X15=45)

6. Explain about Link state Routing Algorithm.
7. Explain in detail about Application of multiplexing telephone system.
8. Explain in detail about x.25 layers.
9. Explain about functions of OSI layers.
10. Explain in detail about Error Detection mechanism.

SEMESTER III

MOBILE COMMUNICATION

UNIT - I

PORTIONS:- Introduction - Wireless Transmission - Frequencies for Radio Transmission – Signals - Analog and Digital Signal – Antennas - Signal Propagation - Multipath Propagation – Multiplexing - Types of Multiplexing – Modulations – Types of Modulations – Spread Spectrum – FHSS – DHSS – MAC – SDMA – FDMA – TDMA – CDMA – Cellular Wireless Networks – 1G, 2G, 3G, 4G.

SECTION-A 6 MARKS

1. Define mobile communication and list out the merits and demerits.
2. Difference between wireless and mobile.
3. What are mobile and wireless devices?
4. List out the applications of mobile communication.
5. What are the various reference model in mobile communication?
6. Explain the mobile communication in market.
7. Explain the Frequencies for Radio Transmission.
8. Discuss Time Division Multiplexing.
9. Discuss Code Division Multiplexing.
10. Explain the Multipath Propagation.
11. What is CDMA? Explain in Detail.
12. Compare the following four medium access systems.
    (1) SDMA (2) TDMA (3)FDMA (4) CDMA.
13. Explain any two Cellular Networks.

SECTION-B 15 MARKS

1. Explain the history of mobile communication.

2. Discuss a simplified reference model.
3. Explain types of antennas in detail.
4. Explain the Signal Propagation.
5. What do you understand by various Shift Keying in digital modulation Schema?
6. Discuss Modulation Techniques in detail.
7. Explain Multiplexing Techniques in detail.
8. What is frequency mapping in spread spectrum? Expain the difference between between FHSS and DSSS.
9. Explain TDMA and its features.
10. Explain SDMA and its features.

UNIT – II

PORTION:– GSM – Architeture of GSM – Layers in GSM – Security in GSM – DECT - Architecture – Layers in DECT – UMTS - Architecture of UMTS – IMTS-2000 Statelite Network: Basics _ GEO – LEO - MEO – Routing – Handover. .

SECTION-A 6 MARKS

1. What are Subsystems in GSM system.
2. Explain the security in GSM.
3. Discuss about DECT.
4. Explain the layers in DECT.
5. Explain the layers in UMTS.
6. Discuss about IMT-200.
7. What are the Applications of Satellites?
8. Discuss about the basics of Satellites.
9. What are the advantages of MEO?
10. What are the advantages of LEO?
11. What are the advantages of GEO?

SECTION-B 15 MARKS

1. Explain the GSM architecture.
2. Details about DECT architecture.
3. What are the types of satellite orbits?
4. Compare GEO, MEO and LEO.
5. Explain the localization and handover in satellites.

UNIT – III

PORTIONS: - Wireless LAN – IEEE 802.11 – Architecture – Services – MAC – Physical layer – IEEE 802.11a – 802.11b Standards – Bluetooth – Architecture of Bluetooth – Layers of Bluetooth.

SECTION-A 6 MARKS

1. Discuss about wireless LAN?
2. Explain about the IEEE 802.11?
3. Discuss about MAC.
4. Compare about the IEEE 802.11a and IEE 802.11b.
5. Explain about Bluetooth.

SECTION-B 15 MARKS

1. Explain about the Architecture of IEEE 802.11
2. Explain about Architecture of Bluetooth.
3. Discuss the layers of Bluetooth

UNIT – IV

PORTIONS: - Mobile IP – Reasons for Mobile IP – Procedure of Mobile IP – Dynamic Host Configuration Protocol – Routing - DSDV – DSR – Sensor Network – Protocols in Sensor Network – Alternative Metrics – Routing – Home Agent – Foreign Agent – Problem in Mobile IP.

SECTION-A 6 MARKS

1. Discuss about Mobile IP.
2. Explain about procedure about Mobile IP.
3. Details about the Routing.
4. Discuss about problem in Mobile IP.
5. Explain about Alternative Metrics.
6. What is Home Agent in details?
7. What is Foreign Agent in details?
8. What is meant by Encapsulation?
9. Discuss about Tunneling and Encapsulation Mechanism.

SECTION-B 15 MARKS

1. Explain about the Dynamic Host Configuration Protocol.
2. Discuss about the Destination Sequence Vector.

3. Details about Dynamic Source Routing.
4. Explain About Adhoc Network.
5. Discuss about Home and Foreign Agent.

UNIT – V

PORTIONS: - Traditional TCP – TCP Versus UDP – Packets Format – Problem in HTTP & HTML Classical TCP improvements – TCP over 2G/3G – WWW – WAP – WAP 1.0 &WAP 2.0 – WML Script – Layers in WAP.

SECTION-A 6 MARKS

1. Compare TCP and UDP.
2. Name the layers of WAP.
3. Name the libraries specified by WML Script.
4. Discuss the problems in HTTP
5. Explain about UDP packet format.

SECTION-B 15 MARKS

1. Explain Traditional TCP.
2. Explain Classical TCP improvements.
3. Explain in detail about WAP Architecture.
4. Discuss about the WAP1.0 and WAP 2.0.

MODEL QUESTION PAPER

Time :3Hrs **Max.Marks:75**

SECTION - A (5*6=30)

1. a) Explain the various applications of Mobile Communication.

(Or)

b) Discuss about Multiplexing.

2. a) Explain the layers in UMTS.

(Or)

b) Explain the localization and handover in satellites.

3. a) Compare about the IEEE 802.11a and IEE 802.11b.

(Or)

b) Discuss about MAC.

4. a) Compare Discuss about problem in Mobile IP.

(Or)

b) Discuss about Tunneling and Encapsulation Mechanism.

5. a) Explain Traditional TCP improvements.

(Or)

b) Explain in detail about WAP Architecture.

SECTION –B (3*15=45)

6. Explain the GSM architecture.
7. Explain SDMA and TDMA with merits and demerits
8. Discuss the layers of Bluetooth
9. Explain about the Dynamic Host Configuration Protocol.
10. Explain Classical TCP improvements.