

ALLAMA IQBAL OPEN UNIVERSITY, ISLAMABAD
(Department of Computer Science)

WARNING

1. **PLAGIARISM OR HIRING OF GHOST WRITER(S) FOR SOLVING THE ASSIGNMENT(S) WILL DEBAR THE STUDENT FROM AWARD OF DEGREE/CERTIFICATE, IF FOUND AT ANY STAGE.**
2. **SUBMITTING ASSIGNMENTS BORROWED OR STOLEN FROM OTHER(S) AS ONE'S OWN WILL BE PENALIZED AS DEFINED IN "AIOU PLAGIARISM POLICY".**

Course: Network Design (3418)

Level: Bachelor

Semester: Spring, 2013

Total Marks: 100

ASSIGNMENT No. 1

Note: All questions carry equal marks.

- Q.1 Describe the design goals of various network topologies.
- Q.2 What are the advantages of queuing techniques? Elaborate.
- Q.3 Differentiate between CSMA/CD and CSMA/CA.
- Q.4 Define OSI model. How the different layer of OSI model work?
- Q.5 How TCP/IP protocol organizes various communication tasks?

ASSIGNMENT No. 2

Total Marks: 100

Note: All questions carry equal marks.

- Q.1 Write a detail explanation of satellite network.
- Q.2 What are the attribute of a LAN. Also describe the characteristics of ISDN network?
- Q.3 Discuss the various techniques of flow control in communication network.
- Q.4 What are the advantages of digital system and carrier system?
- Q.5 What are the techniques for analog to digital transmission?

3418 Networking Design

Credit Hours: 3(3 + 0)

Recommended Book:

Computer Networks “Protocols, Standard, and Interfaces By UYLESS BLACK 2nd Edition

Course Outlines:

Unit No.1 Introduction to Computer Network

The Use of Networks, Advantages of Networks, Communications Networks, Point to Point and Multidrop Circuits, Networks Topologies and Design Goals, Connecting the Analog and Digital Worlds, The Modem Synchronizing Networks Components, Synchronization Codes, Asynchronous and Synchronous Transmission, The Communication Port, Additional Networks Components

Unit No.2 Communication between Computers and Terminals

Traffic Control and Accountability, Checking For Error, WANs, and LANs, Classification of Communication Protocols, Polling/Selection Systems, Selective and Group Polling, Stop and Wait, Sliding Windows, Nonpolluting Systems, Request to Send/Clear, Xon/Xoff, TDMA, TDM, Registrar Insertion. Carrier Sense, Token Passing, Priority Slot, Carrier Sense Collision-Free System, Token Passing Priority System.

Unit No.3 Layered Protocols, Networks And OSI Model

Rational for Layered Protocols, Goals of Layered Protocols, New Design Problems, Communication between Layers, A Pragmatic Illustration, Standards Organization, ISI Standard, Layers of OSI

Unit No.4 TCP/IP

Introduction to Internet, Protocols

Unit No.5 Satellite Networks

Pros and Cons of Satellite Networks, Conventional Multiplexing, Polling/Selection, Non Polling Peer/Peer System, Non Polling Primary/Secondary System, Sdus, The Teleport

Unit No.6 Networks

Primary Attributes of a LAN, Broadband and Base band LANs, LAN Standards, Connection Options with LAN, LAN Topologies and Protocols, Token Ring, Token Bus, Isdn

Unit No.7 Switching and Routing In Networks & X.25 Network

Telephone Switching Systems, Electromechanical Systems, Stored Program Control System, Message Switching, Packet Routing, Packet Switching Support, Layers Of X.25, Features of X.25, Channel Options, Flow Control, Internetworking

Unit No.8 Digital Networks & Personal Computer Networks

Advantages of Digital Systems, Signal Conversion, Digital Carrier Systems, Analog to Digital Techniques, Waveform Analysis, Communication Characteristics, Error Handling, Pc as a Server, Pc and Mainframe Computer, Pc and An, Pc Networks and OSI Model

Unit No.9 Internet Services