ADVANCED COMPUTERNETWORK Engineering

1. Introduction to Computer Networks: Introduction, Network Hardware, Network Software, OSIand TCP/IP Reference Models, Transmission Media, Wireless Transmission, Transmission in ISDN,Broad Band ISDN

2. Data Link Layer: Data link layer Design Issues, Error Detection and Correction process at DL,, Protocols and their Performance, Specifications and Examples.

3. Medium Access Sub-layer: LAN, MAN, Protocol, ALOHA, IEEE Standard for 802 for LANs, Fibre Optic Networks and Satellite Networks

4. Design Issues in Network layer and Transport layers: Design Issues, Error Detection and Correction, Protocols and their Performance, port address, process to process communication, Specifications and Examples.

5. Overview of Network Devices: Repeaters, Bridges, Routers, Gateways, Multiprotocol Routers, Switches, Modems, Wireless Access Points, Transceivers, Firewalls. A

Textbooks

- 1. Computer Networking for Beginners: The Complete Basic Guide to Master Network Security, Computer Architecture, Internet, Wireless Technology, and Communications Systems , David Brown, 2020
- 2. Computer Networking: A Top-Down Approach **by James F. Kurose and Keith W. Ross**, 8th Edition, **May 2022** , Addison Wesley (Pearson Education)

Reference Books

- Computer Networks, A. S. Tannenbaum, PHI – New Delhi.

MODEL QUESTION PAPER
ELECTRONICS AND COMMUNICATION ENGINEERING

ADVANCED COMPUTER NETWORKS ENGINEERING

Exam : 3 Hrs. **Max. Marks: 100**

Answer any five questions.
All Questions carry equal marks

1. (a) List the key differences between OSI reference model and TCP/IP reference model.
(b)What is Integrated Series Digital Network. Explain the ISDN series and number of and channels it offers with a neat diagram.

2. (a) What are the various internetworking devices and why are they used in OSI reference model.
(b) List advantages of having international standards for network protocols.

3. (a) What is the need for Flow control? Explain the common approaches for flow-control in data link layer.
(b)Explain how slotted ALOHA solves the problem of Channel allocation.

4. What are design issues of data link layer? Explain the following framing methods.
(a) Character oriented protocol
(b) Bit oriented protocol.

5. (a) What is a cyclic redundancy check. What are the errors that CRC can detect.
(b)What are the major differences between the go-back-n and select repeat protocols

6. (a) Draw the Ethernet Frame structure and explain the various fields in it.
(b) List the design issues of network layer.

7. (a) What are the various LAN standards/technologies.
(b)Explain IEEE 802.3 Ethernet LAN technology and how CSMA/CD is implemented.

8. (a) Write a short note on gateways, repeater, and router.
(b) Briefly explain about firewalls, spanning tree bridges.

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