Course Name: Data Communication and Networking BECT- 504 (B)

Course Outcomes:

At the end of the course the student should be able to:

CO1 To understand the basics of data communication, networking, internet and their importance.
CO2 To analyse the services and features of various protocol layers in data networks.
CO3 To differentiate wired and wireless computer networks and topologies of networks
CO4 To analyse TCP/IP protocol and various switching methods.
CO5 To recognize the different internet devices and their functions.
CO6 To understand the error control mechanism.

MODEL QUESTION PAPER

S.No	Questions	Marks	CO	BL
1a.	What is meant by Data Communication and explain its characteristics?	6	CO1	2
1b.	List any four Networking Connecting Devices and explain their function.	6	C05	1
1c.	Define Guided & Unguided Transmission Medium.	8	C03	2
2a.	Explain different layers in the OSI Model. Explain the layers of the TCP/IP model.	8	C02	1
2b.	What is Switching and what are the different types of Switching Techniques?	6	C04	1
2c.	Explain about token bus and token ring networks.	6	CO2	2
3a.	Write about Stop and wait protocol, Go-Back-N ARQ protocol and Selective Repeat ARQ protocol.	8	CO6	2
3b.	What is cyclic code and explain Cyclic Redundancy Check (CRC) code?	7	CO6	1
3c.	Explain about HDLC Configurations, Transfer Modes.	5	CO2	2
4a.	State Types of Errors. Compare LRC & VRC with an example.	8	CO6	3
4b.	Describe procedure to configure TCP/IP network layer services.	6	CO4	3
4c.	Draw and describe the process of data communication in: i) Simplex mode ii) Half Duplex iii) Full Duplex	6	CO1	1

5a.	Compare the data rates for standard Ethernet, Fast Ethernet, Gigabit Ethernet and 10 Gigabit Ethernet.	6	CO5	4
5b.	Name the ATM layers and their functions. What are the four SONET layers? Why is SONET called a synchronous network?	8	CO5	1
5c.	Explain Frame Relay and X.25 protocol	6	C05	2
6a.	Distinguish between two Distance vector routing – Link state routing	8	CO4	4
6b.	Explain the implementation of polling and token passing.	6	CO3	3
6c.	For a trading firm an organisation with 10 users, draw network architecture design of wireless LAN	8	C02	3
7a.	Assume we have an internet with 12-bit address space. The addresses are equally divided between eight networks (N_0 to N_7). The internetwork communication is done through a router with eight interfaces (m_0 to m_7). Show the internet outline and the forwarding table (with two columns: prefix in binary and the interface number) for the only router that connects to the networks. Assign a network address to each network.	10	CO4	4
7b.	Draw & describe the connecting devices required for LAN for an organisation using Tree topology.	10	CO3	5
8a.	Identify appropriate network topology and network connecting devices for following requirements. Draw network design for proposed network. An organisation having its office in a building of 5 floors. Each floor needs 20 machines. There is one File server. Each floor has 2 print servers to facilitate printer capacity.	10	CO3	5
8b.	Explain DQDB (Distributed Queue Dual Bus) How slot reservation is done to send data downstream? What is Switched Multimegabit Data Service (SMDS)? Write Advantages & Disadvantages of SMDS.	10	CO2	2

BL – Bloom's Taxonomy Levels (1- Remembering, 2- Understanding, 3- Applying, 4- Analysing, 5- Evaluating, 6- Creating)

CO – Course Outcomes

PO – Program Outcomes;