International Islamic University Chittagong

Department of Computer Science and Engineering

B. Sc. in CSE, 7th Semester, Final Examination

Spring 2022

Course Code: **CSE 3633** Course Title: **Computer Networks**

Time: 2 hours 30 minutes Full Marks: 50

(i) The figures in the right-hand margin indicate full marks

(ii) Course Outcomes and Bloom's Levels are mentioned in additional Columns

	Course Outcomes (COs) of the Questions
CO1	**Develop** specific project requirements and goals for a software project.
CO2	**Explain** the basic concepts and application techniques in software design.
CO3	**Analyze** the performance of protocols and networks.
CO4	**Demonstrate** a familiarity with major network and security algorithms and protocols.
CO5	**Identify and apply** applications of computer networks with determining suitable alternatives of the networks for the alternative conditions.

Bloom's Levels of the Questions						
Letter Symbols	R	U	App	An	E	C
Meaning	Remember	Understand	Apply	Analyze	Evaluate	Create

Part A

[Answer the questions from the followings]

1. a) Apply LSR algorithm on the following network in fig-1 to construct a routing table of router 'R1'. CO2 Ap 5

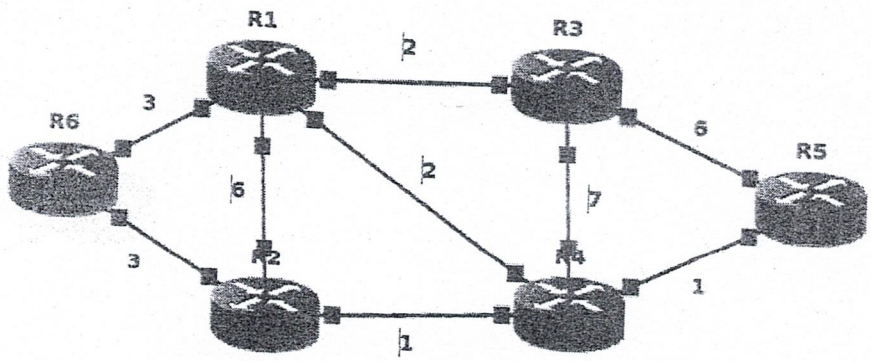

Fig-1

1. b) Apply the DVR algorithm on the above network in fig-1 to construct a routing table of router 'R1'. CO2 Ap 5

2. a) Explain with a figure how the Link State database is built. CO4 U 5

2. b) With a suitable figure, compare the fields in TCP and UDP headers. Why do you think the TCP header has more fields than UDP header? CO2 E 5

OR

2.	a)	Write down the advantages and disadvantages of hierarchical routing with the help of an appropriate network diagram.	CO4	U	5
2.	b)	Why does UDP exist? Would it not have been enough to just let user processes send raw IP packets? Who executes Connect primitive? Why Listen primitive is necessary?	CO2	E	5

Part B

[Answer the questions from the followings]

3.	a)	Discuss the roles of the Application layer and transport layer in flow control for both sender and receiver of data.	CO1	U	5
3.	b)	Explain MPLS (Multi Protocol Label Switching) with a figure. Also mention how it improves traditional routing.	CO3	An	5
4.	a)	TCP is the main protocol of the transport layer, then why UDP exists?	CO4	Un	5
4.	b)	What is the silly window syndrome? How to avoid silly window syndrome?	CO4	Un	5
5.	a)	Analyze the weakness of substitution or Caesar cipher.	CO3	Ap	5
5.	b)	Encrypt a plain text message "F(=6)" by using RSA encryption. Also show the decryption of the Ciphertext you derived.	CO4	U	5

OR

5.	a)	Suppose you have registered your newly created website named www. cse.iiuc.ac.bd with a DNS server. Describe the DNS recursive query for searching the IP address of your cse web server.	CO3	Ap	5
5.	b)	How does email architecture differ from web architecture?	CO4	U	5