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Daffodil International University

Department of Computing and Information System (CIS)
Final Examination: Spring Semester-2023
Program: B.Sc. in CIS
Course Code: CIS 211
Course Title: Computer Networks

Total Time: 2 hours **Total Marks: 40**

(Answer all the following questions)
[The figures in the right margin indicate full marks for the respective questions]

			Marks	
1.		Shwapno is the largest grocery chain in Bangladesh and best retail brand in the country. The very first outlet was established at Dhaka and later evolved with total 60 branches across Bangladesh including Chattogram, Khulna, Sylhet etc. Currently, they want to delivered their product through online, therefore they need to build a computer network for their head office and branch office. The head office situated at Dhaka and all the 60 branches are connected with head office network therefore all the data including sales, purchase, inventory record etc. are stored permanently in head office server.		
	(a)	Draw a network diagram that shows the main components of the network. Allocate suitable IP addresses and add them in the diagram.	[5+2]	CLO-3
	(b)	Select the suitable hardware for both branch office and head office network and justify the reason for choosing these networking hardware.	[4]	CLO-3
	(c)	Current CEO of the company is very much concern about security of the data especially after opening of the online delivery services. How would you setup a secure head office network and also ensure the secure connection between the local and head office networks? Justify your answer.	[4]	CLO-3
	(d)	You are asked to identify the suitable applications/services that need to be used for the network. You are also need to identify the suitable	[5]	CLO-2

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		protocols that need to be used for those application. For each protocol, identify the layer at which they operate.		

2.	(a)	State two (2) principles underpinning the Open Systems Interconnection (OSI) Reference Model. Briefly explain the function of the OSI (Open System Interconnection) Layers 1-4.	Marks [2+4] 5	CLO-1
	(b)	Briefly describe the THREE (3) key components of an 802.3 Ethernet frame format and 802.3 Ethernet packet format.	[4] 2.	CLO-1

3.	(a)	Distinguish between Transmission Control Protocol (TCP) and User Datagram Protocol (UDP).	Marks [4] 3.5	CLO-2
	(b)	Identify the need of the standards? Select which standard (802.11a/b/-n) is more effective than others?	[4] 3.	CLO-2
	(c)	Depict with a diagram how mesh topology creates a very resilient network?	[2] 2	CLO-2

principle 2 ৫৮ ৯৪ ?

16
12
27 — F 40
10 — A 10
10 — 9 15
18 — P 35
500
3.5