

Department of CIS

WEB Engineering

Quiz 02;

Mark: 15;

SET: A ; Duration: 30min

1. Write down the difference between Big bang model and Agile model .

17.51

2. A project size of 45000 LOC is to be developed. Software development team has some experience on similar type of projects, not fully. The project schedule is not very tight. Calculate the Effort, development time, average staff size, and productivity of the project.

17.51

Class Test Examination: Fall-2024
Course Code: CIS 211 (Batch: 17)
Course Title: Computer Network

Time: 30 Minutes

Petly

Total Marks: 15

1. Explain the basic four network topologies?
2. Summarize the principle of OSI model. Explain the key tasks of each layer. *FNDR*
3. What are some of the factors that determine whether a communication system is a LAN or WAN?
4. Why are protocols needed?



Class Test (2) Examination: Fall-2024

Course Code: CIS 211 (Batch: 17)

Course Title: Computer Network

Time: 30 Minutes

Total Marks: 15

1. Suppose a network with IP Address 192.16.0.0 is divided into 2 subnets. Find number of hosts per subnet. Also for the first subnet, find- Subnet Address, First Host ID, Last Host ID, Broadcast Address. 5
2. Suppose given an IP address: 192.168.2.0/24. And we need to create 4 subnets using following host requirements: 5
1st subnet = 120, 2nd subnet = 60, 3rd subnet = 30, 4th subnet = 30. Find network address, broadcast address, 1st host and last host address of each subnetwork.
3. How does subnetting impact network performance and security? Provide examples. 5

Class Test (2) Examination: Fall-2024

Course Code: CIS 211 (Batch: 17)

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Time: 30 Minutes

Total Marks: 15

Given the IP address 192.168.10.0/24, how many subnets can you create if you use a subnet mask of 255.255.255.192 (/26)? List the subnet addresses and their corresponding ranges.

You have been assigned the network 172.16.0.0/16 and need to create subnets for three different departments. The department requirements are as follows: Department A needs 1000 IP addresses, Department B needs 500 IP addresses, and Department C needs 200 IP addresses. Using VLSM, what subnet masks should be used for each department, and what are the network addresses for each subnet?

Find the summarized IP address with subnet mask of the following IP addresses. 5

(a) 172.16.72.0/24

(b) 172.16.75.0/24

(c) 172.16.77.0/24

(d) 172.16.79.0/24

Class Test (3) Examination: Fall-2024

Course Code: CIS 211 (Batch: 17)

Course Title: Computer Network

Time: 30 Minutes

Total Marks: 15

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1. Why TCP is called connection oriented reliable protocol? Explain with figure. 4
 2. What is a checksum, and how does it detect errors in data transmission? 4
 3. Write down the difference between TCP and UDP? 4
 4. What are the main advantages of the Sliding Window protocol over the Stop-and-Wait protocol? 3



Daffodil International University
Faculty of Science and Information Technology (FSIT)
Department of CIS
Lab Final, Fall-2024

Course Title: Computer Network Lab
Time: 40 minutes

Course Code: CIS211L
Total Marks: 40

STARLINK operates through four distinct departments: Engineering, Management, Accounting, and Human Resources. Each department comprises 100 employees, including a Departmental Head, a Coordination Officer, and supporting staff. These employees frequently collaborate by sharing files and require the capability to print documents remotely. The network should also simulate web services for hosting the company website and FTP services for file sharing between departments. Based on the above scenario, Solve the following questions:

- ✓ 1. Establish a network for the administrative department by connecting 4 PCs. Assign IP addresses manually to each PC and simulate the connectivity to ensure proper communication between the devices. Also run the 'ping' command for the devices. [10]
 - ✓ 2. Establish a wireless network connection in the office for connecting devices like laptop and smartphone. [10]
 - ✓ 3. Design a topology for the development team office and assign ip addresses dynamically. (At least 4 PCs) [10]
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- ✓ 4. Create a txt file in the Notepad and write your "Name" then share the file to your nearby PC through IP file sharing. [10]



Daffodil International University
Department of Computing and Information System
Faculty of Science & Information Technology
Final Examination, Fall 2024
Course Code: CIS 211
Course Title: Computer Networks

Time: 02:00 Hours

Marks: 40

*[The figures in the right margin indicate the full marks and corresponding course outcomes.
 All portions of each question must be answered sequentially.]*

1. Since you are a student of the Department of Computing and Information System (CIS) of Daffodil International University (DIU), thus, we do believe that you have some basic knowledge on computer network. On the upcoming international conference in DIU you are going to arrange a video presentation session in where all the computers in three academic buildings will be connected. You are thinking to design a smart communication model among all the computers of DIU (including academic building 1, 2 and 3) without any cost (excluding the configuration cost) in a single network.

- a) What type of network topology would you choose to configure all the computers in the mentioned academic buildings? Draw and explain your choice. [4]
- b) Which transmission mode would be most suitable for the communication between computers? Justify your selection. [3] CO3
- c) What factors would you consider to determine whether to configure the network as a LAN or a WAN for connecting the computers in the three academic buildings? [3]

2. a) Translation, encryption and compression are some functions of the presentation layer in the OSI model. Which layer do you think is responsible for these functions in the OSI model? Explain your answer. [3]

b) What are the principal of OSI model? Shortly explain the functionalities of TCP/IP models. [4]

c) Fill up the following table. [3] CO1

Layer	Protocol
Physical Layer	No protocols used [Handwritten]
? Transport	UDP
? Network	RIP
Network Layer	IP
? Transport	TCP

3. a) Suppose a network with the IP address 200.1.2.0 is divided into 2 subnets. [5]
Find the number of hosts per subnet. Additionally, for each subnet, determine the subnet address, first host ID, last host ID, broadcast address, and gateway address.

b) Suppose you are the network administrator of Daffodil International University. You have been assigned the IP address 192.168.2.0, and you need to create 4 subnets based on the following host requirements:

- Subnet 1: 120 hosts
- Subnet 2: 60 hosts
- Subnet 3: 30 hosts
- Subnet 4: 30 hosts

For each subnet, calculate the network address, broadcast address, first host address, last host address, and gateway address.

CO4

4. a) Suppose you are sending an e-mail from your gmail account to your friend, who reads his/her e-mail from his/her mail server. Briefly describe how your e-mail travels from your host to your friend's computer. [4]

b) Why transport layer protocols like TCP and UDP are called end-to-end protocols? What is the difference between them. [3]

CO2

c) Compare and contrast sliding window protocol and stop-and-wait protocol in terms of efficiency and use cases. Provide an example scenario where each protocol is best suited. [3]