**CS601 Assignment # 1 Fall 2021**

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**Question No. 1:**

**Scenario**

“Global Consultants” is a consultancy company in Lahore. A couple of days ago, they have decided to open another office in Islamabad. In the new office, they want to establish a computer network for different departments. Following are the department details:

1. In the “Marketing department” there will be 9 computers that are interconnected with each other to provide efficient communication among them.
2. In the “Admin department” there will be 5 computers that are connected via a central hub.

At the end of the day, the admin department of the Islamabad office will pass all the data to a secure main server in Lahore.

After carefully reading the above scenario, write down the answer of each of the questions given in the following table:

|  |  |
| --- | --- |
| **Questions:** | **Answer:** |
| Identify the topology that will be used in the “Admin Department”. | ***STAR*** Topology |
| Identify the topology that will be used in the “Marketing department” department. | ***MESH*** Topology |
| Number of links that will be required for the identified topology of “Marketing department”? | By formula ***n(n-1)/2*** and total ***9 computers***, we get ***Ans= 36*** |
| Which type of computer network (LAN or WAN) will be designed within the “Admin department”? | ***Local Area Network*** *(LAN)* |
| Number of links that will be required for the identified topology of “Admin Department”? | ***5*** *Links* |
| Which TCP/IP layer will be responsible for passing the data to the main server in Lahore? | ***Network Layer*** |

**Question No. 2:**

Following table contains some communication scenarios. You are required to mention the suitable Transmission mode against each scenario.

|  |  |
| --- | --- |
| **Communication Scenarios** | **Transmission Mode** |
| Fire Alarm system. | ***Simplex Mode*** |
| Two traffic wardens talking to each other via walkie-talkie. | ***Half duplex Mode*** |
| Two friends talking on cellular phone | ***Full duplex Mode*** |
| Output on the LED monitor | ***Simplex Mode*** |