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| **Department of Electrical Engineering**  **Mid – Term Assignment Spring 2020**  **Date: 15/06/2020**  **Course Details** | | | |
| **Course Title:** | Computer Communication Network | **Module:** | 06 |
| **Instructor:** |  | **Total Marks:** | 30 |
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**Student Details**

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| **Name:** |  | **Student ID:** |  |

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| Q1. | (a) | 1. You have two computers connected by an Ethernet hub at home. Is this a LAN, a MAN, or a WAN? Explain your reason. 2. When a party makes a local telephone call to another party, is this a point-to-point or multipoint connection? Explain your answer 3. Draw a hybrid topology with a star backbone and three ring networks. 4. Performance is inversely related to delay. When you use the Internet, which of the following applications are more sensitive to delay?   a. Sending an e-mail  b. Copying a file  c. Surfing the Internet | Marks 08 |
| CLO 1 |
| Q2. | (a) | 1. For each of the following four networks, discuss the consequences if a connection fails.   a. Five devices arranged in a mesh topology  b. Five devices arranged in a star topology (not counting the hub)  c. Five devices arranged in a bus topology  d. Five devices arranged in a ring topology   1. A color image uses 16bits to represent a pixel. What is the maximum number of different colors that can be represented? 2. What is the maximum number of characters or symbols that can be represented by Unicode? 3. Suppose a computer sends a packet at the network layer to another computer somewhere in the Internet. The logical destination address of the packet is corrupted. What happens to the packet? How can the source computer be informed of the situation? 4. Suppose a computer sends a packet at the transport layer to another computer somewhere in the Internet. There is no process with the destination port address running at the destination computer. What will happen? 5. If the data link layer can detect errors between hops, why do you think we need another checking mechanism at the transport layer? | Marks 12 |
| CLO 1 |
| Q3. | (a) | One of the disadvantages of using point to point (Mesh) network is that the number of connections grows more rapidly as the number of computers increase. Find the number of connections needed to be used in point to point (Mesh) topology in network of 10 and also find that how many I/O ports are needed for each device. | Marks 06 |
| CLO 1 |
| (b) | A Sine wave has a frequency of 265 Hz. What is its period? | Marks 04 |
| CLO 1 |