**CS610 Assignment #1 Spring 2022**

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**Question No. 1:**

Suppose, even parity error detection scheme is used with the data unit “10010001”. You are required to find the code word that will be transmitted to the receiver. Give your answer in the following table:

**Solution:**

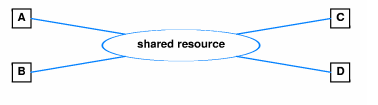
|  |  |
| --- | --- |
| **Data Unit** | **Code Word** |
| **10010001** | **100100011** |

Suppose if during the transmission, the code word gets modified due to some errors as given in the table. You are required to identify the code word(s) that will be detected and not detected at the receiver end.

|  |  |
| --- | --- |
| **Modified code words** | **Detected/ Not detected** |
| **101100111** | **Not detected.** |
| **101100011** | **Detected.** |
| **110100111** | **Not detected.** |
| **010101111** | **Not detected.** |

**Question No. 2:**

Suppose there is a local area (wired) network of 4 computers (A, B, C, D) accessing a single shared resource. These computers want to send the data at the same time on the shared transmission medium.



Suppose its the turn of computer A which wants to send a file of 12 MB to computer D. Your task is to calculate that how much time the computer A will take to transfer this file on a shared transmission medium with 56Kpbs capacity. Mention all calculation steps and provide your answer with proper units.

**Note:** In the above network, the concept of packets is not utilized.

**Solution:**

**Data Transfer:**

= 12 \* 106 \* 8 bits / bytes.

60 seconds / minutes \* 56 \* 103 bits / seconds.

= 12 \* 1,000,000 \* 8 bytes.

60 \* 56 \* 1,000 sec.

= 12,000,000 \* 8 bytes.

60 \* 56,000 sec.

= 12,000,000 \* 8 bytes.

3,360,000 sec.

= 96,000,000 bytes.

3,360,000 sec.

So, the time required in minutes are:

**= 28.57 minutes.**