|  |  |  |  |
| --- | --- | --- | --- |
|  | **Assignment No. 03   Semester: Fall 2020**  **CS601: Data Communication** | | **Total Marks: 15**  **SOLUTION**  **Due Date: 3rd February 2021** |
| **Solution**  **NAME: TAMKEEN SAJJAD**  **ID: MC200400003**  **Course: MIT** | | | |
| **Assignment Solutions** | |  | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Question No. 1**  It is shown that to correct ‘t’ errors, we need to have: **dmin = 2t + 1** bits and accordingly **t= (dmin-1)/2**  And using these equations, we have:   |  |  | | --- | --- | | **Number of bits to be corrected** | **Minimum hamming distance** | | 16 | 33 | | 4 | 9 | | 6 | 13 | | 9 | 19 | | 8 | 17 |   **Question No. 2**  Given Data Rate R = 2Kbps  Therefore, 1 bit duration B is **ec**  Given Noise Ratio is **Dsec**  Therefore, Bit Impacted =  **Question No. 3**  The link-layer addresses in the most common LAN, Ethernet, are 48 bits (six bytes) that are presented as 12 hexadecimal digits separated by colons. For, unicast, the second digit needs to be an odd number, for multicast, the second digit needs to be an even number and for broadcast address all digits are 1s.     |  |  |  |  | | --- | --- | --- | --- | | **MAC Address** | **2nd Digit** | **Odd/Even** | **Type** | | A3:43:85:11:93:F1 | 3 | Odd | Unicast | | 1C:87:B2:A1:2F:10 | C | Even | Multicast | | FF:FF:FF:FF:FF:FF | F | F | Broadcast | | D3:5A:B2:9F:54:55 | 3 | Odd | Unicast | | A4:1C:33:D2:0F:11 | 4 | Even | Multicast | |