**MINOR-2 EXAMINATION**

M.Tech –**CSE ( 1st-SEMESTER):** SESSION **2022-23**

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| Course Code: **MCSC-103** | Duration: **60 Min.** |
| Course Name: **Advanced Computer Networks and Communication** | Maximum Marks: **20** |

***Instructions:***

1. *Attempt any* ***four*** *questions.*
2. *Clearly state assumptions wherever necessary.*

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| **Q. No.** | **Questions** | **MM** | **CO** | **BL** |
| **1** | Define Nyquist sampling criteria?To transmit 256kbps over a noiseless channel with a bandwidth of 20kHz, How many signal levels do we need? | ***5*** | *CO1* | *L1* |
| **2** | Define line-coding?Draw the waveform for a data sequence [001011] while using NRZ-L, NRZ-I, RZ, Manchester encoding? | ***5*** | *CO1* | *L2* |
| **3** | Define ASK modulation with waveform and also draw the block diagram of its modulator and demodulator? | ***5*** | *CO2* | *L2* |
| **4** | Define Shannons channel capacity? The signal to noise ration of a channel is 36dB and the bandwidth of channel is 2MHz, determine the theoretical channel capacity? | ***5*** | *CO2* | *L3* |
| **5** | A channel with a 1MHz bandwidth has the SNR of 63. What is the appropriate bit rate and signal level?  Why is delta modulation preferred over pulse code modulation? | ***5*** | *CO4* | *L3* |
| **6** | Define communication performance metrics?  Explain the use of B8ZS or HDB3 with waveform?  Define the term “orthogonal” codes or signals with respect to multiple access or multiplexing? | ***5*** | *CO4* | *L3* |