

**School of Electrical Electronics and Communication Engineering**  
**Electronics and Communication Engineering**  
**ETE - Jun 2023**

Time : 3 Hours

Marks : 50

**Sem II - MCEN5011 - Digital Communication System Design**

*Your answer should be specific to the question asked*

*Draw neat labeled diagrams wherever necessary*

1. Explain ASK modulation technique. K2 CO2 (2)
2. Write three advantages of Digital Communication? K1 CO1 (2)
3. Explain uniform quantization. K2 CO2 (2)
4. Write the Principles of Spread Spectrum process. K1 CO1 (2)
5. Discuss the advantages of adaptive delta modulation (ADM) over DM. K2 CO3 (2)
6. Illustrate the working principle of ADM. If a sampled message signal quantizes with a 512-level uniform quantizer and the band-limited message signal's maximum frequency is 100Hz, calculate the signal-to-noise ratio (SNR) for the normalized value of power. K4 CO4 (6)
7. What is quantization? If the PCM uses 32 level quantizer, calculate the minimum transition bandwidth when maximum frequency of band limited message signal is 100Hz. K3 CO3 (5)
8. In a linear quantizer, calculate the maximum signal to quantization noise ratio. K3 CO3 (5)
9. Summarize a QPSK receiver with block diagram. K5 CO5 (8)
10. Design and summarize BPSK transmitter. K5 CO5 (8)
11. Describe Frequency Hopping Spread Spectrum (FHSS) communication in details. K4 CO4 (8)