**Roll No.** | | | | | | | | | | | | **Total No. of Pages : 02**

**Total No. of Questions : 09**

**B.Tech (ECE) (Sem.–6)**

# DIGITAL COMMUNICATION

**Subject Code : EC-304**

**M.Code : 57536**

**Time : 3 Hrs.** **Max. Marks : 60**

**INSTRUCTIONS TO CANDIDATES :**

1. **SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.**
2. **SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.**
3. **SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.**

## SECTION-A

**Q1. Write briefly :**

a. What is an eye diagram?

b. What is an aperture effect?

c. State low pass sampling theorem.

d. Define granular noise.

e. What is non-uniform quantization?

f. What is Phase Lock Loop (PLL)?

g. Define bit rate, baud rate and coding efficiency.

h. What is minimum shift keying (MSK)?

i. Define mean quantization error for PCM system.

j. What do you understand by non-coherent detection?

## SECTION-B

Q2. Explain differential pulse code modulation (DPCM) system with neat block diagram.

Q3. What is non-uniform quantization? Explain $\mu$-law companding with proper mathematical expressions.

Q4. Define line coding. Discuss various line coding scheme and their properties.

Q5. Explain delta modulation system with neat block diagram.

Q6. Explain the transmitter and receiver of binary phase shift keying (BPSK) with the help of neat block diagram.

## SECTION-C

Q7. Explain the generation and detection of a coherent amplitude shift keying (ASK) signal. Also, compare ASK with PSK and FSK.

Q8. With the help of neat block diagram, explain the generation and detection of a coherent quadrature amplitude modulation (QAM). Compare the performance of QAM with PSK modulation.

Q9. Explain differential phase shift keying transmission and reception with the help of neat block diagram. What are the merits and demerits of DPSK over PSK?

**NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student**.