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**Question Paper Code: 33806**

B.E. / B.Tech. DEGREE EXAMINATION, MAY 2022

Third Semester

Information Technology

01UIT306 - ANALOG AND DIGITAL COMMUNICATION

(Regulation 2013)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions.

PART A - (10 x 2 = 20 Marks)

1. Define amplitude modulation.
2. Draw the frequency spectrum and mention the bandwidth of AM signal.
3. Write the relationship between the minimum bandwidth required for an FSK system and the bit rate.
4. What are the advantages of PSK as compared to FSK?
5. Determine the relationship between the pulse rate and bit rate.
6. What does the term catastrophic cyclic code represent?
7. State sampling theorem.
8. Define companding.
9. List the various multiple access techniques.
10. List the various multiple access techniques.

PART - B (5 x 16 = 80 Marks)

11. (a) Derive the expression for AM & its Power and Efficiency calculation. (16)

Or

(b) Explain the method of generating FM signal using direct and indirect method. (16)

12. (a) Compare the various types of digital modulation techniques. Explain the principle of FSK transmitter and receiver. (16)

Or

(b) Explain the generation and detection of coherent QPSK system in detail. (16)

13. (a)(i) Describe about analog and digital channel model. (10)

(ii) Discuss on Gilbert model of bursty channel. (6)

Or

(b) Define channel modeling and also briefly explain the Gilbert model of bursty channels. (16)

14. (a) Explain the draw backs of delta modulation and explain the significance of adaptive delta modulator. (16)

Or

(b) What is pulse modulation? Discuss about various pulse modulation schemes. (16)

15. (a) Explain the two types of FH spread spectrum systems with suitable diagrams. (16)

Or

(b) Explain DS-SS system with coherent BPSK. (16)