Reg. No. : | | | | | | | | | | | | |

Question Paper Code : 60378

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2016.

Third Semester

Computer Science and Engineering

CS 2204/CS 36/EC 1207/080230008/10144 CS 305 – ANALOG AND DIGITAL COMMUNICATION

(Regulations 2008/2010)

(Common to 10144 CS 305— Analog and Digital Communication for B.E. (Part-Time) Second Semester — CSE —Regulations 2010)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — ($10 \times 2 = 20$ marks)

1. Define amplitude modulation.

2. What is digital communication?

3. Define bit rate and baud rate.

4. Draw the block diagram of OPSK transmitter.

5. Find the minimum sampling frequency for a signal having frequency from 10 MHz to 10.2 MHz, in order to avoid aliasing.

6. What are the types of pulse modulation systems?

7. What are the types of data transmission?

8. Mention the usage of scrambler and descrambler.

9. What do you mean by Pseudo noise sequence?

10. Define FH spread spectrum.

PART B — (5 × 16 = 80 marks)

11. (a) Differentiate AM and FM interms of all parameters. (16)

Or

(b) Derive the expression for a frequency modulated wave. Comment on modulation index of FM, frequency deviation and frequency analysis of the same. Give relevant diagrams. (16)

12. (a) (i) Describe the Shannon limit for information capacity. (6)

(ii) Explain the transmitter and receiver of binary phase shift keying communication system with block diagram. (10)

Or

(b) (i) Explain the principle of operation of FSK transmitter and receiver. (8)

(ii) Explain about squaring loop and costas loop. (8)

13. (a) (i) Explain delta modulation with the help of transmitter and receiver diagrams.

(ii) What is Quantizing error? Illustrate with an example.

Or

(b) (i) Explain in detail about ISI and Eye diagram.

(ii) What is meant by companding? Describe the concept of analog companding.

14. (a) (i) Explain any two data communication codes presently used for character encoding. (12)

(ii) Give brief notes on error detection. (4)

Or

(b) With a neat block diagram, explain the data communication hardware. (16)

15. (a) Discuss and compare CDMA and TDMA in wireless Communication Systems. (16)

Or

(b) Explain Direct Sequence Spread Spectrum with Coherent Binary PSK.(16)

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