Reg. No. : ☐☐☐☐☐☐☐☐☐☐☐☐☐

Question Paper Code : 65018

5 Year M.Sc. DEGREE EXAMINATION, MAY/JUNE 2013.

Fourth Semester

Software Engineering

XCS 244/ 10677 SW 404 – PRINCIPLES OF DATA COMMUNICATION

(Common to 5 Year M.Sc. Information Technology and 5 Year M.Sc. Computer Technology)

(Regulation 2003/2010)

Time : Three hours   Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What are the merits and demerits of PAM?

2. What is the purpose of quantization?

3. Define Information rate.

4. What is meant by Convolutional coding and decoding?

5. What is meant by Attenuation?

6. What is the difference between radio and microwave communication?

7. Define binary phase shift keying.

8. How the signal power is determined by PCM?

9. State the disadvantages of stop-and-wait protocol.

10. What are the different transfer modes supported by HDLC?

PART B — (5 × 16 = 80 marks)

11. (a) (i) Write briefly about the different FM generation schemes.   (10)

        (ii) Explain about Quantization of signals.   (6)

Or

    (b) (i) Discuss about Amplitude modulator and demodulator.   (10)

        (ii) Write short notes on Sampling theorem.   (6)

12. (a) (i) Write briefly about Shanon-fano and Huffman source coding techniques. (8)

        (ii) Explain about forward error correction technique. (8)

Or

   (b) (i) Write short notes on Hadmard cyclic and Hamming coding techniques used for random error correction (8)

        (ii) Write briefly about the different methods to handle burst errors. (8)

13. (a) (i) Compare and contrast Digital and Analog transmission. (8)

        (ii) Explain data communication interfacing with a neat diagram. (8)

Or

   (b) (i) Compare Satellite and Fiber optics communication. (8)

        (ii) Write briefly about Synchronous and Asynchronous transmission. (8)

14. (a) (i) Explain the operations of NRZ and biphase data streams. (8)

        (ii) Discuss in detail about Frequency shift keying. (8)

Or

   (b) (i) Explain in detail about Quadratic phase shift keying. (10)

        (ii) Compare Delta modulation and Pulse code modulation. (6)

15. (a) (i) Explain the process involved in Go-Back-N ARQ and Selective-Reject ARQ. (8)

        (ii) Explain the frame structure for HDLC. (8)

Or

   (b) (i) Explain about how error correction is carried out using Block coding principle. (10)

        (ii) Write briefly about multiplexing. (6)

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