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

Question Paper Code : 31212

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2015.

Fifth Semester

Electrical and Electronics Engineering

080280046 — COMMUNICATION ENGINEERING

(Common to 080280036 – Communication Engineering, for B.E. (Part-Time) Fourth Semester, Electrical and Electronics Engineering)

(Regulation 2008)

Time : Three hours | Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Define the modulation index of FM.

2. Draw a pre-emphasis circuit.

3. Which circuit device is used to connect a balanced transmission line to an unbalanced load? Write its unique features.

4. Define velocity factor and di-electric constant.

5. Define the term quantisation?

6. What is the functions of digital T1-carrier?

7. What is a MODEM?

8. Compare the serial and parallel communication.

9. Contrast synchronous and nonsynchronous satellites.

10. Mention the advantages of optical fibre communication.

PART B — (5 × 16 = 80 marks)

11. (a) (i) Explain the frequency modulation process. (10)

(ii) Compare AM and FM. (6)

Or

(b) With a block diagram explain

(i) Tuned Radio Frequency receivers (6)

(ii) Superheterodyne receivers. (10)

12. (a) (i) State and prove sampling theorem. (6)

(ii) Explain the generation of PWM and PPM waves. (10)

Or

(b) (i) Explain the principle of DM and ADM. (8)

(ii) Explain the concept of PCM and DPCM technique in data communication. (8)

13. (a) (i) Determine the peak frequency deviation, minimum bandwidth and band for a binary FSK signal with a mark frequency of 49KHz, a space frequency of 51KHz and an input bit rate of 2 Kbps. (9)

(ii) Derive the relationship between information capacity bits and bit rate. (7)

Or

(b) Draw the block diagram of two channel PCM-TDM system with a TDM frame and explain its operation.

14. (a) Elaborate on ISO-OSI layer architecture for WAN. State the functions of each layer in detail. (16)

Or

(b) It is required to provide a complete overview on various modules constituting a telephone network. Give the necessary diagrams. How does ISDN differ from telephone network? (16)

15. (a) Explain the functional characteristics of an uplink, a transponder and downlink model for satellite system. (16)

Or

(b) Discuss the following;

(i) Satellite system link equation (8)

(ii) Light propagation through fiber. (8)

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