Reg. No. : ☐☐☐☐☐☐☐☐☐☐☐☐☐

Question Paper Code : 80348

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

Sixth Semester

Electronics and Instrumentation Engineering

EC 6651 — COMMUNICATION ENGINEERING

(Common to Electrical and Electronics Engineering and Instrumentation and Control Engineering)

(Regulations 2013)

Time : Three hours   Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Define modulation index.

2. Differentiate NBFM and WBFM.

3. Why flat top PAM is preferred over natural PAM?

4. What is slope overload error?

5. State the channel capacity theorem.

6. What is BCC and BSC?

7. What are the benefits of multiple access techniques in Communication Engineering?

8. Mention the significance of CDMA technique.

9. What is optical link?

10.. List the merits and demerits of geosynchronous satellites.

PART B — (5 × 16 = 80 marks)

11. (a) Explain the generation of DSB-SC wave using Balanced Modulator. Derive the power of DSB-SC signal. (16)

Or

(b) Explain in detail about indirect method of FM generation. (16)

12. (a) Explain the generation and detection of PWM signals. (16)

Or

(b) (i) Explain the concept of BPSK and QPSK techniques in data communication. (12)

(ii) Compare PCM and DM. (4)

13. (a) Explain the procedure of Shannon fano algorithm and calculate the entropy for the following probabilities using the algorithm. (16)

m1	m2	m3	m4	m5	m6	m7	m8
4/32	2/32	16/32	2/32	2/32	1/32	1/32	4/32

Or

(b) (i) Briefly discuss on various error control codes and explain in detail with one example for convolutional code. (12)

(ii) Draw the polar, unipolar, bipolar and Manchester NRZ line code format for an information {1 0 11 0 0}. (4)

14. (a) Explain the operation of FH-SS. Compare slow and fast FH-SS. (16)

Or

(b) Discuss the FDMA and TDMA techniques used in wireless communication with their merits and demerits. (16)

15. (a) (i) Write a brief note on INSAT. (8)

(ii) Write a brief note on Intelsat. (8)

Or

(b) (i) Draw the block diagram of satellite link and explain. (8)

(ii) Explain in detail about SCADA. (8)

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