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

Question Paper Code : 91457

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2019

Sixth Semester

Electronics and Instrumentation Engineering

EC 6651 – COMMUNICATION ENGINEERING

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

(Regulations 2013)

Time : Three Hours | Maximum : 100 Marks

Answer ALL questions

PART – A **(10×2=20 Marks)**

1. Draw the Frequency Spectrum of AM.
2. Mention the advantages and disadvantages of SSB Transmission.
3. Define Nyquist rate.
4. Obtain an ASK waveform, for the given bit stream 11001001.
5. Define the entropy of a Discrete Memoryless Source (DMS).
6. What are the differences between block code and convolutional code ?
7. What are the benefits of multiple access techniques in Communication Engineering ?
8. Mention the significance of CDMA technique.
9. What are the different types of fiber ? Which type is more preferred ?
10. Among LED and LASER, which is more popularly used now ? Why ?

PART – B **(5×13 = 65 Marks)**

11. a) i) Derive the power relations for Amplitude Modulation. **(7)**

ii) Describe the Armstrong method of FM generation. **(6)**

(OR)

b) i) Derive the relation for power spectrum for FM and sketch it. **(7)**

ii) Compare and contrast NBFM and WBFM. **(6)**

12. a) i) Describe the pulse modulation schemes of PAM, PPM, PWM and PTM. (7)

ii) Sketch slope overload error and explain how that error could be minimized. (6)

(OR)

b) i) Compare and contrast QPSK and QAM. (7)

ii) Describe the GMSK scheme. (6)

13. a) i) What are line codes ? Describe any two line codes and their salient features. (7)

ii) Bring out the Bandwidth-SNR tradeoff present in a communication channel. (6)

(OR)

b) i) What is source coding ? Discuss source coding procedure, with an example source code. (5)

ii) Describe mBnB codes. (4)

iii) What is a convolutional code ? When is it used ? (4)

14. a) Explain the principle of operation of direct sequence spread spectrum with its n performance parameters. How pseudo noise is generated ?

(OR)

b) i) Describe CDMA technique in detail. (6)

ii) Explain the role of SDMA in wire and wireless communications. (7)

15. a) i) Write a brief note on INSAT. (7)

ii) Write a brief note on Intelsat. (6)

(OR)

b) i) Draw the block diagram of satellite link and explain. (7)

ii) Explain in detail about SCADA. (6)

PART – C **(1×15 = 15 Marks)**

16. a) i) Discuss about powerline carrier communication. (8)

ii) Detail about different fibers. (7)

OR)

b) i) Explain about error control codes. (7)

ii) Discuss about MA techniques. (8)