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

Question Paper Code : 40967

B.E./B.Tech. DEGREE EXAMINATION, APRIL/MAY 2018
Sixth Semester
Electrical and Electronics Engineering
EC6651 – COMMUNICATION ENGINEERING
(Common to : Electronics and Instrumentation Engineering, Instrumentation and Control Engineering)
(Regulations 2013)

Time : Three Hours | Maximum : 100 Marks

Answer ALL questions

PART – A **(10×2=20 Marks)**

1. Define Quantization error.
2. Compare Narrow band FM and Wideband FM.
3. What is meant by aliasing ?
4. Analyse, why FSK is preferred over ASK.
5. List the type of characters used in data communication mode.
6. Give the significance of AMI code.
7. What is meant by near-far problem ?
8. Give the working principle of TDMA.
9. Define Apogee, Perigee and Geocenter.
10. Give the advantage of fiber optics system.

PART – B **(5×13=65 Marks)**

11. a) i) Compare between FM and AM. **(4)**
    ii) Explain in details about FM Modulation. **(9)**

(OR)

b) Discuss in details about the working of a SSB transmitter and receiver.

12. a) Describe in details about the operation of PSK and MSK with neat diagram.

(OR)

b) Discuss the details about GMSK with neat diagram.

13. a) State and prove Shannon's noiseless coding theorem.

(OR)

b) Describe the concept of source coding theorem.

14. a) Describe the frequency division multiple access techniques.

(OR)

b) Describe the time division multiple access techniques.

15. a) i) Explain about satellite communication and its types. **(8)**

ii) Write short notes on cellular CDMA. **(5)**

(OR)

b) What is optical fiber ? Explain the details about the optical detectors.

PART – C **(1×15=15 Marks)**

16. a) Propose and discuss a SCADA scheme for a typical power distribution system.

(OR)

b) i) A binary PAM communication system is used to transmit data over an AWGN channel. The prior probabilities for the bits are $P(a_m = 1) = \frac{1}{3}$ and $P(a_m = -1) = \frac{2}{3}$. Determine the average threshold at the detector and average probability of error. **(10)**

ii) Write a technical note on applications of Data Communication. **(5)**

———————