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Reg. No. : .....

Name : .....

Seventh Semester B.Tech. Degree Examination, June 2016
(2008 Scheme)
08-704 : Elective – III (a) ELECTRONIC COMMUNICATION (E)

Time : 3 Hours Max. Marks : 100

PART – A

Answer **all** questions : **(10×4=40 Marks)**

1. A 360 W carrier is simultaneously modulated by two audio waves with modulation percentages of 55 and 65 respectively. What is the total sideband power radiated ?
2. Draw the frequency spectrum of AM.
3. Define the modulation index and deviation ratio of FM.
4. Explain the choice of intermediate frequency in a superheterodyne receiver.
5. State sampling theorem.
6. Explain the various TV standards and frequency bands.
7. Write short note on HDTV.
8. What is cell sectoring ?
9. Explain the concept of frequency reuse.
10. Briefly describe the concept of analog cellular telephone.

PART – B

Module – I

11. a) With the help of block diagram, explain a low power AM transmitter. **10**

    b) A 1000 KHz carrier is simultaneously modulated with 300 Hz, 800 Hz and 2 KHz audio sine waves. What will be the frequencies present in the output ? **6**

    c) A 400 W carrier is modulated to a depth of 75 percent. Calculate the total power in the modulated wave. **4**

OR

12. a) Derive the mathematical representation of FM. 10

    b) Sketch the instantaneous frequency-time curve for a 100 MHz carrier wave frequency modulated by a 1 KHz square wave that has zero dc component and peak-to-peak voltage of 20 V. The frequency deviation constant is 9 KHz/V. 6

    c) Define Carson's rule. 4

Module – II

13. a) Compare natural sampling and flat-top sampling. 6

    b) What is interlaced scanning ? 4

    c) With the help of a sketch, explain the working of a picture tube. 10

OR

14. a) Draw the block diagram of a monochrome TV receiver and explain. 12

    b) Write short notes on :

    i) Pulse modulation. 4

    ii) Synchronization in TV. 4

Module – III

15. a) Explain the basic concept of CDMA. 10

    b) Briefly describe the call processing procedure in a cellular system. 10

OR

16. a) Draw the block diagram of a GSM system and explain its architecture. 12

    b) Give the overview of personal communication satellite system. 8