Reg. No.: ........................................
Name: ........................................

Seventh Semester B.Tech. Degree Examination, October 2018
(2013 Scheme)
13.704: COMMUNICATION SYSTEMS (E)

Time: 3 Hours Max. Marks: 100

PART - A

Answer all questions.

1. Write the expression for an AM wave. Define modulation index for AM.

2. What is the relation between intermediate frequency, local oscillator frequency and RF signal frequency?


4. Mention two reasons for the better signal quality of FM station compared to AM.

5. State sampling theorem.

6. Mention different TV standards.

7. Draw the video signal spectrum.

8. Write RADAR range equation and explain each term.

9. What is meant by cell sectoring?

10. What is hand-off in mobile communication? (10x2=20 Marks)

PART - B

Answer one full question from each Module.

Module - I

11. a) Explain the working of a super heterodyne receiver with block diagram. 10

b) Draw the circuit diagram of AVC circuit and explain its working. 10

OR

P.T.O.
12. a) With the help of block diagrams explain the difference between low level and high level modulators.

b) Write the expression for total power in double side band full carrier AM wave. What is the percentage saving of power if
i) one of the side bands is suppressed
ii) carrier alone is suppressed
iii) one carrier and one side band is suppressed.

Module – II

13. a) Explain the direct methods of FM generation.

b) With the help of a block diagram explain pulse code modulation.

OR

14. a) Explain the working of balanced slope detector.

b) Explain the principle of power line carrier communication.

Module – III

15. a) Draw the block diagram of a colour TV transmitter and explain.

b) Explain the working of pulsed radar with the help of block diagram.

OR

16. a) Draw the schematic of a black and white picture tube and explain its working.

b) Explain about high definition television.

Module – IV

17. a) Explain GSM architecture with the help of a block diagram.

b) Explain various interferences associated with cellular communication.

OR

18. a) Write a note on code division multiple access.

b) Explain personal communication satellite system.