

16199(D) - 0 DEC 2016

B. Tech 7th Semester Examination
Communication Engineering (NS)
EE-415

Time : 3 Hours

Max. Marks : 100

The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/continuation sheet will be issued.

Note : Attempt five questions. Select one question from each of the section A, B, C and D. Question no. 9 in section E is compulsory. All questions carry equal marks.

SECTION - A

1. (a) What is the need of modulation?
(b) What are the various frequency bands used for communication? Discuss their special features.
(c) What is the need for wireless communication? Is there any limitation if so explain? (20)
2. (a) What are the various modulation techniques? Explain each of them. (10)
(b) Compare analog and digital modulations. (10)

SECTION - B

3. (a) Draw the block diagram of superhetrodyne receiver and explain the function of each of its block. (10)
(b) Distinguish between simple AGC and delayed AGC. (10)
4. (a) Define sensitivity, selectivity and fidelity of Am radio receiver. (10)
(b) Draw the block diagram of AM transmitter, (low level modulation) and explain the role of its each of its blocks. (10)

SECTION - C

5. Discuss the followings:
(a) Ratio detector. (10)
(b) Foster seely phase discriminator. (10)
6. What are the direct methods of FM generation? Discuss varacter diode method of FM generation. (20)

SECTION - D

7. Explain PCM. In what way is PCM different from other modulation systems? What makes it a digital system? What are its applications? (20)
8. What are the various analog to digital converters? On what basis do we characterise distinguish them? Explain any two types of A/D convertors-Principle & Operations. (20)

SECTION - E (Compulsory)

9. Explain the followings:
(a) Advantages of PCM.
(b) What do you understand by quantization?
(c) List the FM receiver characteristics.
(d) The role of de-emphasis.
(e) Mention the basic requirements of FM generation.
(f) Role of mixer.
(g) What is need of multiplexing?
(h) List the advantages of FM over AM.
(i) What is the role of pre-emphasis?
(j) What is the importance of modulation index? (2×10=20)