Roll No. | | | | | | | | | | | | |

Total No. of Pages : 02

Total No. of Questions : 09

B.Tech.(Automation & Robotics) (2011 & Onwards)/(Electronics & Electrical) (2013 Onward)/(Electronics & Electrical) (2011 onwards)

(Sem.–5)

COMMUNICATION SYSTEM

Subject Code : BTEEE-501

Paper ID : [A2057]

Time : 3 Hrs. Max. Marks : 60

INSTRUCTION TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION-A

Q1. Answer briefly :

a) Why a high frequency carrier is needed in a communication system?

b) What is aliasing and how it is reduced?

c) Write the basic difference between SSB and DSB-SC.

d) Define the terms carrier swing and frequency deviation for FM wave.

e) Write the main functions of a Radio receiver.

f) What is the transmission band width and cross talk in a PAM/TDM channel?

g) Write the function of Modems.

h) Write the effect of noise in FM systems.

i) Write the basic difference between SSB transmission and independent side band transmission.

j) Write the difference between baseband transmission and bandpass transmission.

SECTION-B

Q2. Draw circuit diagram of Reactance tube modulator and explain its working.

Q3. For an AM receiver, the loaded quality factor Q of the antenna coupling circuit is 100. Now if intermediate frequency is 455Khz, then determine the following :

a) The image frequency and its rejection ratio at an incoming frequency of l000Khz.

b) The image frequency and its rejection ratio at an incoming frequency of 25Mhz.

Q4. With the help of neat diagrams, explain the transmitter and receiver of PCM.

Q5. How can you reject image frequency in super heterodyne receiver? Why double spotting is harmful? Also draw selectivity curve at 750 KHz.

Q6. Explain directional capability of data exchange and modes of data transmission.

SECTION-C

Q7. Explain the difference between low-level AM transmitter and high-level AM transmitter.

Q8. Explain the following :

a) Stereophonic FM broadcast receiver

b) Modems and line drivers

Q9. Explain a TDM system in detail with a block diagram and write briefly about the Frame, Signaling rate, Transmission band width, Synchronization, Cross talk and Guard time.