National Institute Of Technology, Hazratbal
Department Of Electronics and Communication Engineering
Major Examination, Spring 2019

Course: B.Tech – CSE
Subject: Communication System
Max Marks: 60

Semester: IV
Duration: 3 Hours
Dated: 22-06-2019

Note: Attempt any four questions. Draw diagrams wherever necessary.
Q1:CO-3 CO-5, Q2:CO-2, Q3:CO-3 CO-2, Q4:CO-5, Q5:CO-6 CO-2

Q1. (a) Explain AM super heterodyne receiver in detail. What do you understand by image frequency and intermediate frequency? Explain how super heterodyne receivers overcome the interference caused by image frequency?

(b) Explain Time Division Multiplexing.

[10, 5]

Q2. (a) Discuss the generation of FM using Arm Strong method.

(b) What do you mean by WBFM? Derive an expression for WBFM and draw its spectrum.

[7, 8]

Q3. (a) Explain the process of Pre-emphasis and De-emphasis in detail and also draw the required circuit.

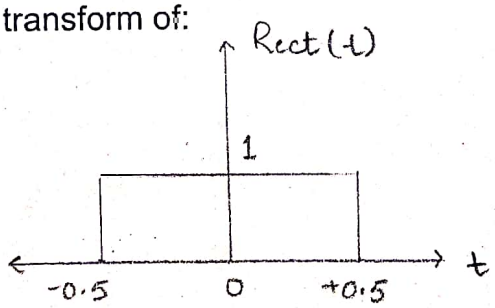
(b) Discuss the generation of SSB-AM using phasing method.

[8, 7]

Q4. (a) Express the binary data 110010101 using the following line codes:
Unipolar NRZ, Bipolar RZ, Manchester coding, Alternate Mark Inversion, Coded Mark Inversion

(b) With the help of a circuit diagram, explain the Sample and Hold operation in detail.

(c) Calculate the Hilbert transform of:



[5, 6, 4]

Q5. (a)Explain ASK and PSK in detail.

(b) Calculate the Fourier transform of Gaussian pulse.

[8, 7]