

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -3 EXAMINATION- 2021

B.Tech V Semester(Backlog one-to-one basis)

COURSE CODE: 10B11EC514

MAX. MARKS: 35

COURSE NAME: COMMUNICATION SYSTEMS

COURSE CREDITS: 04

MAX. TIME: 2 Hours

Note: All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means. Marks are indicated next to the question.

1.
 - a. Write a short note on the classification of signals. 3
 - b. How to you differentiate between a power signal and energy signal? 2
 - c. Which signals are generally used in communication systems analysis? 1
2. Find the Fourier series representation for the signal $x(t) = t$ for $-1 < t < 1$ and $x(t) = x(t + 2)$. Plot the magnitude and phase spectrum for this signal. 5
3. Explain with neat drawings in time domain and frequency domain for the double sideband modulation and demodulation. 5
4. Compare all the linear modulation schemes for the bandwidth required, modulator type, demodulator type, power transmission efficiency along with the required mathematical equations. 4
5. What do you mean by Frequency modulation and phase modulation? Explain with mathematical and block diagram to generate one from the other. 4
6. What do you mean by line coding? List along with neat diagrams different types of line coding schemes. 4
7. What do you mean by amplitude shift keying, frequency shift keying and phase shift keying techniques? Write a short note on the coherent detection and non-coherent detection about these modulation schemes. 5
8. Write a short note on the significance of sampling theorem. 2