St. Francis Institute of Technology
Borivali (West), Mumbai-400103

Department of Information Technology

Academic Year: 2023-24   Semester: III
Class / Branch / Division: SE - IT A/B   Subject: Principle of Communication

MODULE - 3

QUESTION BANK FOR AT-1

Q1. Discuss the need for modulation.

Q2. Define the following: -
- Modulation
- Modulation index for AM wave
- Sensitivity
- Selectivity
- Fidelity
- Image frequency
- Double spotting

Q3. Derive the mathematical expression for AM modulation. Derive the expression of total power of AM waveform. Draw frequency spectrum in terms of amplitude as well as power.

Q4. Draw the block diagram of a superheterodyne receiver highlighting the major function of each block and explaining how it overcomes the limitations of superheterodyne receiver.

Q5. Draw the block diagram of a TRF receiver highlighting the major function of each block. Discuss its limitations.

Q6. Derive the mathematical expression, draw the frequency spectrum and compute the amount of power saving for the following: -
- DSB-SC AM
- SSB-SC AM

Q7. Draw and explain the block diagram of LLM and HLM.

Q8. Discuss generation of AM using diode.

Q9. Discuss generation of DSB using balanced modulator.

Q10. Discuss generation of SSB using phase shift method.

NUMERICALS – Calculation of modulation index, amplitude of carrier, modulating signal and sidebands, frequency of carrier and modulating signal, expression of AM wave, frequency spectrum, BW, carrier power, total power, sideband power, transmission efficiency

Subject Incharge

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