Reg. No. : | | | | | | | | | | |

Question Paper Code: 31445

B.E. / B.Tech. DEGREE EXAMINATION, MAY 2017

Fourth Semester

Electronics and Communication Engineering

01UEC405 – ANALOG COMMUNICATION

(Regulation 2013)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions.

PART A - (10 x 2 = 20 Marks)

1. Write the need of modulation index.
2. Give a note on non-linear distortion.
3. Define frequency deviation.
4. Write the advantages and disadvantages of FM compared to AM.
5. List out the properties of correlation function.
6. Define Central limit theorem.
7. Define thermal noise.
8. Define pre-emphasis and De-emphasis.
9. Define Sampling theorem.
10. Define quantization error.

PART - B (5 x 16 = 80 Marks)

11. (a) Explain with the suitable diagrams the generation of AM using square law modulator and degeneration of AM using envelope detector. (16)

Or

(b) Explain about the generation of SSB-SC using Weaver's Method. (16)

12. (a) Explain the indirect method of generation of FM wave and any one method of demodulating an FM wave. (16)

Or

(b) Derive an expression for Wideband FM wave and Narrowband FM wave. (16)

13. (a) Consider a sinusoidal signal $X(t) = A\cos(2\pi f_c t + \theta)$.Assume θ is a random variable t hat is uniformly distributed over the interval $[-\pi, \pi]$. Find auto correlation. (16)

Or

(b) Define autocorrelation. Discuss the properties of autocorrelation function. (16)

14. (a) Derive an expression for the noise in DSB-SC receiver system using coherent detection. (16)

Or

(b) Obtain an expression for output signal to noise ratio and Channel signal to noise ratio for FM Receiver .Hence derive the expression for figure of merit. (16)

15. (a) Explain about the generation and degeneration of Pulse Amplitude Modulation with diagram. (16)

Or

(b) Discuss the generation and degeneration of PWM. Explain how you will convert PWM to PPM with diagram. (16)

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