

Roll No.

OLE-3218

B. Tech. 5th Semester (ECE)

Examination – April, 2021

COMMUNICATION ENGINEERING

Paper : PCC-ECE-305-G

Time : Three Hours]

[Maximum Marks : 75

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Question No. 1 is *compulsory*. Attempt any *four* questions selecting at least *one* from each Unit. All questions carry equal marks.

1. (a) What do you mean by auto correlation of a function ? What is its purpose to calculate ? 3
- (b) What is channel Noise ? How it can be minimized ? 3
- (c) Discuss the Probability Density function. 3
- (d) What is error function ? 3
- (e) Discuss the Transmission Rate of the channel. 3

UNIT – I

2. Discuss the Fourier Transform. Explain its properties of in details. 15
3. Explain the following : 5
- (a) Convolution theorem.
 - (b) Cross-Correlation and auto-correlation.

UNIT – II

4. Discuss the concept of Entropy. Find the Relation amongs the different Entropies. Also discuss the Mutual Information. 15
5. Write short notes on : 15
- (a) Shannon-Hartley theorem
 - (b) Hullman and Shannon fannno coding.

UNIT – III

6. How To represent a Random Signal ? Discuss the Discrete probability theory. 15
7. Explain the following : 15
- (i) Ergodic Process
 - (ii) Optimum filters

UNIT – IV

8. (a) Explain the joint probability density function. 7.5
(b) Discuss the central limit theorem. 7.5
9. Write short notes on :
- (i) Linear Block code (Encoding and Decoding process). 7.5
(ii) Cross special density. 7.5
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