# SHIVAJIRAO S. JONDHALE COLLEGE OF ENGINEERING DEPARTMENT OF IT ENGINEERING

**3 semester  
Subject : Principle of Communications**

**SEM III Date : 24-04-2020  
 Time : 3 hours Marks : 80**

**Intructions :**  
attempt all question

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## Q1. Answer the following 20 Marks

1. Write short notes on : properties of Fourier transform. **(5 Marks)**

2. What is diagonal clipping and explain how it can be avoided. **(5 Marks)**

3. State and prove the properties of Fourier transform :Time Shifting. **(5 Marks)**

4. Explain balanced modulator using FET's. **(5 Marks)**

## Q2. Answer the following 20 Marks

1. Compare the following: Analog and digital communication systems. **(5 Marks)**

2. what are energy signals and power signals? **(5 Marks)**

3. Explain pre-emphasis and de-emphasis. **(5 Marks)**

4. State advantage of digital communication system over analog communication.justify each point. **(5 Marks)**

## Q3. Answer the following 20 Marks

1. Write short note on balanced modulator. **(5 Marks)**

2. State and prove the following properties of Fourier transform : Convolution in time domain. **(5 Marks)**

3. Explain the generation and demodulation of SSBSC. **(10 Marks)**

## Q4. Answer the following 20 Marks

1. What are limitations of TRF receiver ? Explainhow these limitations are avoided using superheterodyne receiver ? **(10 Marks)**

2. What is meant by sensitivity of a radio receiver and how it is improved ? **(10 Marks)**