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Total No. of Printed Pages: [01]

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**B. Tech. (EE) (Semester – 5<sup>th</sup>)**  
**FUNDAMENTALS OF ELECTRONIC COMMUNICATION SYSTEMS**  
**Subject Code: BECEO1001**  
**Paper ID: [18OE111522]**

**Time: 03 Hours**

**Maximum Marks: 60**

**Instruction for candidates:**

1. Section A is compulsory. It consists of 10 parts of two marks each.
2. Section B consist of 5 questions of 5 marks each. The student has to attempt any 4 questions out of it.
3. Section C consist of 3 questions of 10 marks each. The student has to attempt any 2 questions.

**Section – A**

**(2 marks each)**

Q1. Attempt the following:

- a. Which modulation will be preferred between AM and FM for music transmission? Justify your answer.
- b. How much power is saved by suppressing the carrier in DSB-SC?
- c. What are the advantages of VSB?
- d. What is the Effect of noise on angle modulation?
- e. Differentiate between analog and digital signals.
- f. Explain aliasing and how can we avoid it?
- g. Give the significance of eye diagrams.
- h. Give various types of Line Coding Schemes.
- i. What are the disadvantages of delta modulation?
- j. Explain envelope detector.

**Section – B**

**(5 marks each)**

- Q2. Draw and explain balanced modulator used in AM.
- Q3. Derive the expression for Power distribution in angle modulated signal.
- Q4. With the help of block diagram, explain PCM.
- Q5. Briefly describe role of equalizer in line coding.
- Q6. Explain Pulse Amplitude Modulation.

**Section – C**

**(10 marks each)**

- Q7. Derive the expression for AM. Also explain modulation index for AM.
- Q8. Draw and explain pre-emphasis and de-emphasis in FM.
- Q9. Explain general methods for derivation of power spectral density of a broad class of line coding scheme.