S.B. Roll No……

PRINCIPLES OF COMMUNICATION ENGINEERING

3rd/ECE/EMP/ETV/ECE(II)/0615/Nov'15

Duration: 3 Hrs **M. Marks=75**

SECTION A

Note: Attempt all questions **15x1=15**

Q.1Fill in the blanks:

i. The Bandwidth requirement of telephone channels are……..

ii. SSB-SC stands for……..

iii. Vestigial sideband modulation is used in……

iv. The ……. in FM wave is less than in AM wave.

v. Pre-emphasis is used to amplify …….. frequencies.

vi. Modulation index of phase and frequency modulation are……

vii. A Balanced modulator produces …….. type of AM wave.

viii. Armstrong modulator generates……

ix. VCO stands for……

x. ……. is indirect method of generating FM.

xi. Sensitivity of radio receiver is……..

xii. ……. is the most common semiconductor device used for AM demodulation.

xiii. FM discriminator changes the FM signal into……

xiv. Foster seelay discriminator is used for……..

xv. PPM stands for……..

SECTION B

Q.2 Attempt any FIVE questions **5x6=30**

i. Explain the need for modulation.

ii. Discuss the advantages of SSB-SC system.

iii. Difference between AM and FM.

iv. Discuss the principle of balanced modulator.

v. Describe demodulation of AM wave using synchronous detection.

vi. Explain Pulse Code modulation system.

vii. What are the advantages and disadvantages of Delta modulation?

SECTION C

Q.3 Attempt any THREE questions **3x10=30**

i. What is modulation? Derive an expression for an AM modulated Wave.

ii. Draw and explain Armstrong method for FM generation.

iii. Explain the principle and working of collector modulator with the help of diagram.

iv. Write a short note on any **TWO:**

(a) Adaptive delta modulation.

(b) Pre- emphasis

(c) Ring modulator.