S.B. Roll No.....

PRINCIPLES OF COMMUNICATION ENGINEERING

3RD Exam/ECE/ETV/ECE(II)/0615/May'17

Duration: 3hrs **M. Marks: 75**

SECTION – A

Q1. Fill in the Blanks. **15x1=15**

a. Thermal noise is a type of _____ noise.
b. Amplitude modulation produces _____ additional frequencies.
c. HF range is from ____ to _____.
d. The maximum power saving in SSB-SC is _____.
e. The Carson's rule determines _____.
f. Phase modulation can be derived from frequency modulation by_____.
g. Varactor diode may be used to _____.
h. The bandwidth of an AM signal is_____ .
i. In a communication system, noise is most likely to affect the signal in the _____.
j. Slope detector is used for _____.
k. Sampling theorem states that _____.
l. Companding is used in _____.
m. In which type of modulation quantization noise occurs_____.
n. FM discriminator change the FM signal into _____.
o. PWM stands for _____.

SECTION – B

Q2. Attempt any five Questions. **5x6=30**

i. Compare AM & FM systems.
ii. What do you understand by pre-emphasis and de-emphasis? Explain.
iii. Describe the principle of delta modulation.
iv. A 300 w carrier is modulated to a depth of 60%. Calculate the total power in modulated wave.
v. Explain the basic principle of FM detection using slope detector.
vi. Explain the need for modulation in a communication system.
vii. Write down the applications of transmission lines.

SECTION – C

Attempt any three Questions. **3x10=30**

Q3. Draw the block diagram of a modern communication system and explain the function of each stage.

Q4. With the help of a neat diagram explain the principle of working of a Foster Seeley discriminator.

Q5. Write short note on **any two**

(i) Role of limiter
(ii) Noise triangle
(iii) Capture effect

Q6. Explain the working principle of balanced modulator with the help of neat circuit diagram.

Q7. Draw the block diagram of PCM system and explain the function of each block in detail.