Printed Pages: 02 **Sub Code: EEC608**

Paper Id: 131236 **Roll No.** | | | | | | | | | | |

B TECH
(SEM VI) THEORY EXAMINATION 2018-19
COMMUNICATION ENGINEERING

Time: 3 Hours ***Total Marks: 100***

Note: Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt *all* questions in brief. 2 x 10 = 20

a. Define amplitude modulation.
b. What are AM transmitters and receivers?
c. Explain frequency modulation.
d. Describe phase modulation.
e. Differentiate between external and internal noise.
f. Explain adaptive delta modulation.
g. What is sky wave propagation?
h. Explain colour transmission and reception.
i. Discuss fibre characteristics.
j. Explain data communication with PCS.

SECTION B

2. Attempt any *three* of the following: 10x3=30

a. Derive the expression for the instantaneous value of an AM signal and define modulation index.
b. Draw the block diagram of the indirect method of generation of frequency modulation system and explain the functions of each block.
c. How PPM signal can be generated and detected? Explain with the help of suitable diagram.
d. What is the difference between a geostationary satellite and a low altitude satellite? Give applications of the two.
e. What is meant by T.V. raster scanning? Explain vertical and horizontal deflection system in a T.V.

SECTION C

3. Attempt any *one* part of the following: 10x1=10

a. When a broadcast AM transmitter is 50 percent modulated, its antenna current is 12A. What will the current be when the modulation depth is increased to 0.9?
b. What is super heterodyne receiver? Explain the working operation using suitable block diagram.

4. Attempt any *one* part of the following: 10x1=10

a. What is noise? Explain various types of noise which are external to a communication system.
b. Explain the working of reactance modulator used as FM generator.

5. Attempt any *one* part of the following: 10x1=10

a. State and explain "Sampling theorem" for low pass signals. Explain how will you recover the original signal from the samples.
b. What is Time Division Multiplexing? Explain with suitable diagram

6. Attempt any *one* part of the following: 10x1=10

a. What do you understand by look angles? Explain with reference to a Geostationary Satellite.
b. What are the advantages of cellular communication system? Draw the system architecture of a GSM system.

7. Attempt any *one* part of the following: 10x1=10

a. Draw the basic block diagram of a color television transmitter, and briefly explain the function of each block.
b. What are the advantages of optical communication over electrical communication or radio communication?