

Exam.Code:0937  
Sub. Code: 6892

1079  
B.E. (Electrical and Electronics Engineering)  
Seventh Semester  
EE-710: Analog and Digital Communication

Time allowed: 3 Hours

Max. Marks: 50

**NOTE:** Attempt five questions in all, including Question No. 1 which is compulsory and selecting two questions from each Part.

I. Answer the following:-

x-x-x

Q.No. 1 (i) Differentiate between amplitude and frequency modulation.

(ii) What is the principle of pulse modulation?

(iii) What do you mean by intersymbol interference?

(iv) State Shannon's fundamental theorem of information theory.

(v) What are the various elements of optical fiber transmission link. (5 × 2 = 10)

#### Part - A

Q.No. 2. (a) Explain the phase method of generation of SSB-SC signal. (4)

(b) An angle modulated signal has the form  $v(t) = 100 \cos(2\pi f_c t + 4 \sin 2000\pi t)$  where  $f_c = 10$  MHz. Find:

(i) The average transmitted power

(ii) Peak phase deviation

(iii) Peak frequency deviation

(iv) Is this FM or a PM signal? Explain. (6)

Q.No. 3. (a) Explain pulse code modulation system with the help of neat diagram. (5)

(b) With the relevant diagram explain the adaptive delta modulation technique. (5)

Q.No. 4. (a) Explain the principle of AM modulation with mathematical analysis. Draw the AM wave and explain its power distribution. (6)

(b) Write short note on companding. (4)

#### Part - B

Q.No. 5. (a) Draw the ASK, FSK, BPSK and QPSK waveforms for the bit stream 10110001. (8)

(b) What is MSK? (2)

Q.No. 6 (a) What is source coding? Explain the steps involved in Shannon Fano coding with suitable example. (8)

(b) What do you mean by channel capacity? (2)

Q.No. 7. (a) What are the various elements of a satellite communication? Explain the Kepler's law. (6)

(b) Explain optical communication system with block diagram. (4)

x-x-x