SP - 22

Total No. of Pages : 3

Seat No.	

S.Y.B. Tech. (ETC) (Semester - III) (CBCS)
Examination, January - 2024
PCC-ETC-304 - : ANALOG COMMUNICATION
Sub. Code : 73246

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Day and Date : Thursday, 04 - 01 - 2024 **Total Marks : 70**
Time : 10.30 a.m. to 01.00 p.m.

Instructions :
1) **All questions are compulsory.**
2) **Assume suitable data wherever necessary.**
3) **Figures to the right indicate full marks.**

Q1) Attempt following Multiple choice questions **[14]**

a) The amplitude modulation is categorized into _____.
   i) One ii) Two
   iii) Three iv) Four

b) Which modulation consists of only upper or lower sidebands
   i) DSBSC ii) VSB
   iii) SSBSC iv) None of the above

c) In amplitude modulation amplitude
   i) Varies ii) Constant
   iii) Doesn't varies iv) None of the above

d) The major advantage of FM over AM is _____
   i) Reception is less noisy ii) Higher carrier frequency
   iii) Smaller bandwidth iv) Small frequency deviation

e) Phase shift method is _____
   i) Includes two balanced modulators
   ii) Two phase shifting networks
   iii) Avoids the use of filters
   iv) All of the above

f) If the deviation is 75 kHz and maximum modulating frequency is 5kHz, what is the bandwidth of an FM wave?
   i) 80 KHz ii) 160 KHz
   iii) 40 KHz iv) 320 KHz

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g) The standard value for Intermediate frequency (IF) in AM receivers is

i) 455 KHz ii) 580 KHz

iii) 10.7 MHz iv) 50MHz

h) Sensitivity is defined as

i) Ability of receiver to amplify weak signals

ii) Ability to reject unwanted signals

iii) Ability to convert incoming signal into Image Frequency

iv) Ability to reject noise

i) Low frequency noise is

i) Transit time noise ii) Flicker noise

iii) Shot noise iv) None of the above

j) Noise is added to a signal _____

i) In the channel ii) At receiving antenna

iii) At Transmitting antenna iv) During generation of information

k) Pulse time modulation (PTM) includes

i) Pulse width modulation ii) Pulse position modulation

iii) Both (i) and (ii) iv) None of the above

1) The carrier is suppressed in _____

i) Mixer ii) Frequency multiplier

iii) Transducer iv) Balanced Modulator

m) Conversion of continuous time signal into discrete time signal is called as

i) Sampling ii) Filtering

iii) Extraction iv) None of the above

n) In _____ modulation, the pulses of the carrier wave are varied according to the message signal

i) PTM ii) PAM

iii) PWM iv) PPM

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Q2) Solve any two : **[2×7=14]**

a) Explain Low level DSBFC.

b) Explain concept of angle modulation with respect to Frequency Modulation.

c) Explain Classification of noise.

Q3) Solve any two : **[2×7=14]**

a) Draw and Explain Block Diagram of Analog Communication System.

b) Compare AM with FM.

c) Explain Signal to Noise ratio, Noise factor, Noise figure, Noise Temperature

Q4) Solve any two : **[2×7=14]**

a) Draw and explain Negative peak clipping and diagonal clipping with Waveforms.

b) Comment on pre-emphasis and de-emphasis used in FM.

c) Explain PWM and PPM generation with waveforms.

Q5) Solve any two : **[2×7=14]**

a) Explain super heterodyne receiver with advantages and disadvantages.

b) Explain with block diagram double conversion FM receiver.

c) Compare PAM and PWM.

10679