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Roll No.

221031

**3rd Sem / Electronics & Communication Engg.,
ECE (For Speech and Hearing Impaired)**
Subject : Analog and Digital Communication

Time : 3 Hrs. M.M. : 60

SECTION-A

Note: Multiple choice questions. All questions are compulsory (6x1=6)

Q.1 For efficient transmission and reception of electromagnetic signal, the height of antenna should be equal to

- a) Half wavelength
- b) One wavelength
- c) Quarter wavelength
- d) One third wave length

Q.2 The most power consuming component of AM wave is

- a) Carrier
- b) Modulating signal
- c) Lower sideband
- d) Upper sideband

Q.3 _____ is a type of digital modulation.

- a) Amplitude modulation
- b) Frequency modulation.
- c) Phase modulation.
- d) Frequency shift keying

Q.4 The range of modulation index in AM is

- a) 0 to 1
- b) 1 to 100
- c) 1 to 1000
- d) None of above

Q.5 In FM, the frequency deviation is proportional to

- a) Modulating frequency
- b) Amplitude of Modulating frequency
- c) Carrier frequency
- d) None of above

Q.6 Quantizing noise occur in :

- a) PCM
- b) TDM
- c) FDM
- d) PPM

SECTION-B

Note: Objective/ Completion type questions. All questions are compulsory. $(6 \times 1 = 6)$

Q.7 In pulse position modulation, the amplitude and frequency of pulse is kept constant. (T/F)

Q.8 The bandwidth of AM signal is _____.

Q.9 Is it possible to obtain FM from PM.

Q.10 In FM, the significant sideband increases with increase of frequency. (T/F)

Q.11 In AM, both sideband have same information. (T/F)

Q.12 PSK stands for _____.

SECTION-C

Note: Short answer type questions. Attempt any eight questions out of ten questions. $(8 \times 4 = 32)$

Q.13 Write a note on DSB-SC Modulation system.

Q.14 Explain the block diagram of modern communication system.

Q.15 Explain the following terms:

- a) Demodulation b) carrier signal

Q.16 Explain the Carson's rule.

Q.17 Compare the FSK and PSK modulation system.

Q.18 Explain the role of limiter in FM modulation.

Q.19 Write a short note on ASK modulation system.

Q.20 Explain the advantage and disadvantage of PCM.

Q.21 Explain the modulation index in AM signal and derive the equation of modulation index.

Q.22 State the sampling theorem and sampling frequency for pulse modulation

SECTION-D

Note: Long answer type questions. Attempt any two questions out of three questions. $(2 \times 8 = 16)$

Q.23 Draw and explain the block diagram of digital and data communication system.

Q.24 Derive an expression for an amplitude modulated wave. Also draw the waveforms.

Q.25 Write a short note on following:

- a) PAM
- b) PWM