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SUBJECT CODE NO:- 2176
FACULTY OF SCIENCE & TECHNOLOGY
B.Sc. S.Y Sem-IV
Examination March/April-2022 (To be held in June/July-2022)
Electronics Paper-XI
Communication Electronics

[Time: 1:53 Hours]

[Max. Marks: 50]

- N.B Please check whether you have got the right question paper.
1. Attempt all questions.
 2. Illustrate your answers with suitable labeled diagrams.
- Q.1 What is amplitude modulation? Draw the wave form of amplitude modulated wave and derive expression of amplitude modulated voltage. 20
- OR
- Explain in brief with neat circuit diagram square law diode modulation. 20
- Q.2 What is pulse code modulation? With neat circuit diagram explain pulse code modulation. 20
- OR
- Write short notes on any four of the following:- 20
- a. Varactor diode frequency modulator.
 - b. Pulse amplitude modulation.
 - c. Comparison of frequency modulation and phone modulation.
 - d. Pulse frequency modulation.
 - e. Super heterodyne, receiver
 - f. Side band produced in amplitude modulation.
- Q.3 Attempt the following multiple choice questions. 10
- 1) The amplitude modulation spectrum consists of _____
 - a. Carrier frequency
 - b. Upper side band frequency
 - c. Lower side bank frequency
 - d. All of the above
 - 2) Modulation is done in _____
 - a. Transmitter
 - b. Radio receiver
 - c. Between transmitter and radio receiver
 - d. Neither transmitter nor receiver

- 3) Which type of digital modulation is widely used for digital data transmission?
- Pulse amplitude modulation
 - Pulse width modulation
 - Pulse position modulation
 - Pulse code modulation
- 4) If the position of the fixed width pulse is varied with a modulating signal then it is _____
- Pulse amplitude modulation
 - Pulse width modulation
 - Pulse position modulation
 - All of these
- 5) The modulation index should be in the range _____
- $0 \leq m \leq 1$
 - $b \leq m \leq 2$
 - $-1 \leq m \leq 1$
 - $1 \geq m \leq 1$
- 6) In asynchronous transmission _____
- Code words are preceded by a start symbol and followed by a state symbol and followed by stop symbol
 - Code words are preceded by stop symbol and followed by start symbol
 - Both a and b
 - Code words are not preceded in asynchronous transmission
- 7) The commonly used methods for production of frequency modulation is _____
- Reactance of frequency modulations is _____
 - Varactor diode modulation
 - Armstrong modulation method
 - All of these
- 8) Square law modulation circuits make use of _____ current voltage characteristics of diode.
- Linear
 - Non linear
 - Both linear and non-linear
 - No relation of current and voltage
- 9) Frequency modulation signal is less affected by _____
- Loss
 - Temperature
 - Noise
 - Amplitude
- 10) If the carrier frequency is shifted in steps corresponding to the levels of digital modulating

signal then it is _____

- a. Amplitude shift keying
- b. Phase shift keying
- c. Frequency shift keying
- d. Differential phase shift keying