University of Mumbai

Examination Summer 2022

Program: Electronics and Telecommunication Engineering

Curriculum Scheme: Rev2019

Examination: **SE** Semester: **IV**

Course Code: **ECC405** and Course Name: **Principles of Communication Engineering**

Time: 2 hour 30 minutes Max. Marks: 80

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Q1.	**Choose the correct option for the following questions. All the questions are compulsory and carry equal marks**
1.	Medium which sends information from source to receiver is called _____
Option A:	Channel
Option B:	Transmitter
Option C:	Loudspeaker
Option D:	Transducer
2.	What is modulation?
Option A:	Process of separating a carrier signal and analog signal
Option B:	Recovering information from a modulated signal
Option C:	Process of varying one or more properties of a modulating signal
Option D:	Involvement of noise
3.	The ability of receivers to select the wanted signals among various incoming signals is called _____
Option A:	Fidelity
Option B:	Selectivity
Option C:	Sensitivity
Option D:	Modulation
4.	For low level amplitude modulation, amplifier must be _____
Option A:	Class C amplifier
Option B:	Class B amplifier
Option C:	Class D amplifier
Option D:	Class A amplifier
5.	In a radio receiver, noise is generally developed at _____
Option A:	IF stage
Option B:	Receiving antenna
Option C:	Audio stage
Option D:	RF stage
6.	A superheterodyne receiver with an IF of 450 kHz is tuned to a signal at 1250 kHz. The image frequency is
Option A:	1700 kHz
Option B:	2150 kHz
Option C:	1650 kHz
Option D:	2100 kHz

7.	Standard intermediate frequency used for AM receiver is
Option A:	455 MHz
Option B:	455 KHz
Option C:	455 Hz
Option D:	20 KHz
8.	Pre-Emphasis Circuit is used to amplify what kind of frequencies?
Option A:	Low
Option B:	High
Option C:	Moderate
Option D:	Oscillator
9.	Natural and flat top sampling are the types of _____
Option A:	PWM
Option B:	PPM
Option C:	PCM
Option D:	PAM
10.	Which is a circuit used to generate a double sideband suppressed carrier signal?
Option A:	Sideband suppressor
Option B:	Anti-modulator
Option C:	Balanced modulator
Option D:	Carrier suppressor

Q2.	**Solve any four Questions out of Six, (5 marks each)**
A	Explain the use of VSB in broadcast television
B	A transmitter radiates 9kW of power with carrier unmodulated and 10.125 kW when modulated. Calculate the depth of modulation.
C	Explain types of AGC.
D	Define and explain SNR, Noise Figure, Noise factor, Noise Temperature, and Friss Formula.
E	Explain how PPM is generated from PWM?
F	Explain FDM and TDM applications

Q3.	**Solve any Two Questions out of Three (10 marks each)**
A	Draw a neat block diagram of a superheterodyne radio receiver and explain each block in detail.
B	What are different methods for SSB generation? Explain any one method in detail.
C	With the help of a block diagram explain the concept of PCM. What is DPCM?

Q4.	**Solve any Two Questions out of Three (10 marks each)**
A	What are different methods for FM demodulation? Explain any one method in detail.
B	State and prove sampling theorem for low pass band-limited signal.
C	Explain Frequency Division Multiplexing (FDM) transmitter & receiver with a neat block diagram.