

211104

M. Sc. (Fourth Semester) Examination, June 2021

PHYSICS

Paper : Fourth (Optional)

(Communication Electronics)

Maximum Marks : 42

*Note: Attempt questions of all **three** section as directed. Distribution of marks is given with sections..*

Section-A

(Objective Type Questions)

1×7=7

Note : Attempt all questions. Each question carries 1 mark.

1. Choose the correct answer :

- (i) What happens when the amplitude of the modulating signal is greater than the amplitude of the carrier?
- (a) Decay
 - (b) Distortion
 - (c) Amplification
 - (d) Attenuation
- (ii) What is the condition for greatest output power at the transmitter without distortion?
- (a) Modulating signal voltage > Carrier voltage
 - (b) Modulating signal voltage < Carrier voltage
 - (c) Modulating signal voltage = Carrier voltage
 - (d) Modulating signal voltage = 0
- (iii) The atmospheric sphere which reflect high frequency radio wave back to the earth's surface is called the :

- (a) Biosphere
 - (b) Stratosphere
 - (c) Ionosphere
 - (d) Troposphere
- (iv) Which communication technique belong to fully digital communication?
- (a) PAM
 - (b) AM
 - (c) PCM
 - (d) FM
- (v) Which correct statement?
- (a) Modulating Signal + Carrier Signal = Modulated Signal
 - (b) Modulated Signal + Carrier Signal = Modulating Signal
 - (c) Carrier = Modulated Signal + Modulating Signal
 - (d) All of the above
- (vi) The advantage to microwave is :
- (a) High Penetration power
 - (b) High directive
 - (c) S/N ratio is high
 - (d) Move at the speed of light
- (vii) Which is correct sequence of performance regarding low to high?
- (a) PCM < DPCM < dM < AdM
 - (b) Adm < dM < DPCM < PCM
 - (c) DPCM < PCM < AdM < dM
 - (d) DM < PCM < AdM < DPCM

Section-B
(Short Answer Type Questions)

5×2=10

Note : Attempt all five question. One question from each unit is compulsory. Each questions carries 2 marks.

Unit-I

2. What do you mean by vestigial sideband Modulation.

Or

Explain technique of amplitude modulation.

Unit-II

3. Explain about look angles.

Or

Describe the fading of signals.

Unit-III

4. Write only two advantages and disadvantages of Micro-wave Communication.

Or

Write about atmospheric effect on Microwave propagation.

Unit-IV

5. Describe and state the sampling theorem.

Or

How to generate Pulse Amplitude Signal (PAM)?

Unit-V

6. What do you understand by probability of error?

Or

Describe the QPSKA technique.

Section-C
(Long Answer Type Questions)

5×5=25

Note : Attempt all five questions. One question from each unit is compulsory. Each questions carries 5 marks.

Unit-I

7. Explain the generation and detection of SSR signal.

Or

Write about delection of DSBSC signal.

Unit-II

8. Describe the orbital pattern in detail.

Or

Write a note on satellite communication.

Unit-III

9. Write on essay on Microwave Communication.

Or

Explain the fresnel zone problem used in Microwave Communication System.

Unit-IV

10. Differential Delta Modulation and adaptive Delta Modulation.

Or

Describe the natural sampling and Flat-top Sampling in details.

Unit-V

11. Write notes on : (any two)

- (i) Optimum filled
- (ii) White noise
- (iii) FSK
- (iv) PSK