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**24-PH-44**

**M.Sc. IV SEMESTER [MAIN/ATKT] EXAMINATION  
JUNE - JULY 2024**

**PHYSICS  
Paper - IV  
[Communication Electronics]**

*[Max. Marks : 75]**[Time : 3:00 Hrs.]**[Min. Marks : 26]*

**Note :** Candidate should write his/her Roll Number at the prescribed space on the question paper.  
Student should not write anything on question paper.  
Attempt five questions. Each question carries an internal choice.  
Each question carries **15 marks**.

**Q. 1** Explain the term detection ? Explain the need of modulation in transmission of signals. Draw linear diode detector circuit and explain it. (15 Marks)

**OR**

a) What is balanced modulator ? Explain it. (05 Marks)

b) Draw circuit diagram of suppressed carrier transmitter for SSB modulation and explain it. (10 Marks)

**Q. 2 a)** Explain the term maximum usable frequency, skip distance and fading. (09 Marks)

b) Explain microwave transmission system. Give its advantage and disadvantages. (06 Marks)

**OR**

a) What is Satellite System ? Explain. (07 Marks)

b) What is Orbital Satellite ? Explain. (08 Marks)

**Q. 3 a)** Explain Pulse Modulation. Give its advantages. (05 Marks)

b) Describe natural sampling method for PAM transmission. (10 Marks)

**OR**

a) Explain continuously variable slope delta modulation (CVSD). (07 Marks)

b) What is the quantization process in communication ? Give its types. (08 Marks)

**Q. 4** Draw block diagram of base band signal receiver and explain it. (15 Marks)

**P.T.O.**

**OR**

**a)** What is coherent in a communication system ? Explain

(07 Marks)

**b)** Explain FSK and PSK.

(08 Marks)

**Q. 5** Write short notes on (**any two**) -

(7½ Marks each)

i) Probability of Error.

ii) Adaptive Delta Modulation.

iii) Orbital Spacing.

iv) Vestigial Sideband Modulation.

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