# THE AMERICAN COLLEGE, MADURAI

(An Autonomous Institution Affiliated to Madurai Kamaraj University)

Re-accredited (2nd Cycle) by NAAC with Grade "A", CGPA – 3.46 on a 4-point scale

## Backlog Arrear Examination, March 2021

**Course Code: PHY 3596** **Time: 3 hours**

**Course Title: Communication Systems** **Max. Marks: 75**

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I. Answer **ANY FIVE** questions. **(5 × 15 =75)**

1. Describe the theory of amplitude modulation and derive an expression for modulation index.
2. Describe frequency and phase modulation. Derive the formula for the instantaneous value of an FM voltage and the modulation index.
3. Describe the working of a superheterodyne receiver and discuss the advantages of superheterodyne receiver over TRF receiver.
4. Describe the working of a communication receiver with a suitable block diagram.
5. What are the advantages of digital communication over analog communication? Explain base band pulse transmission in detail.
6. Describe the fiber optic communication system with a neat block diagram and discuss the advantages of fiber optic communication system over radio communication system.
7. What is TDMA? Explain in detail about TDMA synchronization techniques.

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