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 2454 **Time: 3hrs**

Course Title: Electronics **Max: 75 marks**

PART - A

Answer ANY FIVE questions **(5 X 15 = 75)**

1. State and prove Thevenin's and Norton's theorems.

2. Explain the operation of a common emitter transistor amplifier with a neat circuit diagram.

3. State Barkhausen criterion for oscillation. With a neat circuit diagram, explain how Colpitt's oscillator generates oscillations by using a tank circuit.

4. Describe the operation of an op-amp as inverting and non inverting amplifiers with neat circuit diagrams.

5. Explain the operation of R-S and J-K flip flops with necessary diagrams.

6. How will you construct a half and full subtractor circuits by using logic gates? Discuss their operation with truth tables.

7. Describe the operation of an astable and monostable multivibrators by using IC 555 timer.

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