



# THE AMERICAN COLLEGE, MADURAI

(An Autonomous Institution Affiliated to Madurai Kamaraj University)  
Re-accredited (2<sup>nd</sup> Cycle) by NAAC with Grade “A”, CGPA – 3.46 on a 4-point scale

## Backlog Arrear Examination, March 2021

Course code: PHS 1563

Time: 3 Hrs

Course Title: Digital Electronics and its application

Marks: 75

### PART-A

Answer any five of the following questions.

5x15=75

1. Discuss the different types of logic gate with its truth tables.
2. (i) Convert  $(64)_{10}$  to binary.  
(ii) Convert the octal number  $(88)_8$  to decimal.  
(iii) Convert the binary number  $(10110110)$  to hexadecimal.
3. State and verify De Morgan’s law.
4. Explain JK flip flop with its circuit diagram and truth table.
5. With the help of block diagram and waveform explain the serial in – serial out shift registers.
6. What is Multiplexers? Explain the 4-to-1 multiplexer.
7. With a neat diagram and output waveform, explain the operation of asynchronous counter.

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