S.V.S.S.C.GOVERNMENT DEGREE COLLEGE
SULLURPET, SPSR NELLORE DISTRICT, ANDHRA PRADESH

DEPARTMENT OF PHYSICS
ADD-ON-PROGRAMME -SYLLABUS
Digital Electronics

Course Outcomes

1. Understand of the number system and their conversion
2. Understand the operation of basic logic gates and their truth tables
3. Understand the applications of different logic circuits
4. Understand the working and applications of sequential digital circuits

UNIT-I (5hrs)
NUMBER SYATEM

Decimal number system, Binary number system, decimal to binary and binary to decimal Conversion, complement of a number, octal number system, octal to decimal and decimal to octal conversion, Hexadecimal number system and conversion.

UNIT-II (5hrs)
BOOLEAN ALGEBRA

Postulates and theorems of Boolean Algebra, Digital logic gates, OR gate, AND gate, NOT gate, NAND gate, NOR gate, Exclusive OR gate, Demorgan's Theorem.

UNIT-III (5hrs)
APPLICATIONS OF LOGIC CIRCUITS

Half Adder, Half Adder Subtractor, Full Adder, Full Adder Subtractor, Parallel Binary Adder, Analog to Digital and Digital to Analog converters Multiplexers, De Multiplexers.

UNIT-IV (5hrs)
SEQUENTIAL DIGITAL CIRCUITS

Flip-Flops, RS, JK, D, T, Master – Slave JK Flip flops, Shift Registers, Counters, Asynchronous or Ripple counter, Decade Counter, Synchronous Counters

Reference Books:

1. Digital electronics - VK Puri
2. Switching Theory & Logic design - A.Anand Kumar
3. Unified Electronics - Agarwal and Agarwal

List of Practicals:

Minimum of 8 experiments to be done and recorded

1. Logic Gates
2. Half adder & Full adder
3. Demorgan's Theorems
4. Flip-Flops
5. Astable Multivibrator
6. Schmitt-Trigger Circuit
7. Parallel Binary adders
8. Encoder and Decoder
9. Synchronous Counter
10. Asynchronous Counter

MODEL PAPER
Theory

SECTION – A

Answer any Four Questions 4x10=40M
1.
2.
3.
4.
5.
6.
7.
8.
SECTION – B
Answer All the Questions 2x5=10M
9.
10.
11.
12.
13.

Practical

1. **Experiment – 30 M**
2. **Viva –voce – 10 M**
3. **Record - 10M**