Syer electronics

DIGITAL ELECTRONICS N411
(One 3-hour paper)

1.0 Number systems and codes: Binary number system basics and decimal equivalents; Boolean algebra - basic laws and manipulation techniques; Boolean functions of 2 variables with basic gate implementation; circuit drawing standards (IEC) - truth tables of Boolean functions.

2.0 Logic circuits and systems: Basic S-R flip-flop (Bistable) implementation using gates; delay flip-flops (D-type latch); clocked master/slave J-K flip-flops; multiple latches and shift registers; binary counters (e.g. up only, up/down, synchronous, non-synchronous, presetable; ring counters; Johnson counters; multiplexors and demultiplexors; S.S.I. and M.S.I. standard packages in T.T.L. and C-MOS.; interpreting device data (e.g. logic levels, current sink/source, transient response, frequency considerations).

3.0 A brief and basic treatment of interfacing elements and applications: Digital display elements (L.E.D.'s - seven segment displays, liquid crystal displays); quantitising analogue signals (successive approximation method); A D and D A conversion technique basics.