KURUKSHETRA UNIVERSITY KURUKSHETRA
Course: B.Sc. (Hons) IT
Semester-IV

Paper Code: BSIT-401
Nomenclature:-Digital Electronics-III

Max. Marks: 40+10*
Time: 3hrs.

UNIT -I

Sequential Circuits-II : Counters: Asynchronous Counters- Mod-N or divided by N Counter. Synchronous Counter-Modulo Counters, Decade Counter. UP-Down Counters, Basic principle of digital clock.

Unit- II

Registers: Shift Registers, Serial-in serial out (SISO), serial-in-parallel out (SIPO), parallel-in-serial-out (PISO) parallel-in-parallel-out (PIPO), bi-directional shift register, Universal Shift Register Applications of shift register – Ring counter, Twisted Ring Counter, Sequence Generator.

Unit -III

Digital Memories : Memory System Parameters, ROM, PROM, EPROM, EEPROM, RAM (Static and dynamic), PLA's, Expanding Memory Size.

Unit -IV

D/A and A/D converters : Digital and Analog representation, D/A Converters: Weighted Resistor DAC, R-2R Ladder Type DAC, Specification of DAC. A/D converters: Single slope A/D converter, Dual slope A/D converter, Successive approximation A/D converter, Specification of ADC.

Reference Books:

1) Digital E1ectroics & Micro computers - R. K. Gaur (4 th edition).
2) Modern Digital Electronics by R.P. Jain.

Note:

1. Syllabus in each Theory Paper is divided in 4 units.
   I. A Student is required to attempt 5 questions in all.
   II. Question No 1 is compulsory, consisting of short answer type questions based on all the 4 units.
   III. Two questions will be set from each unit. A student is required to attempt one question from each unit.
   IV. All questions carry equal marks.
2. Use of simple calculator is permissible.
3. Instructions should be imparted using SI system of units. Familiarity with CGS system of units should also be ensured.
4. Distribution of Marks: 40+10.
   * Each theory question paper will be of 40 marks of 3 hours duration and 10 marks in each theory paper are to be awarded through internal assessment in each semester.
5. Work load – 3 periods per week per theory paper