SE - Sem IV - ExTC - ADIDA

21/5/15

(OLD COURSE) **QP Code : 4136**

N. B.: (1) Question No. 1 is compulsory.

(2)Attempt any four questions out of remaining Six questions.

(3)Figures to the right indicate full marks.

(4)Assume suitable data whenever required.

(3 Hours) Total Marks:100

Q.1 a) Explain the principal of Antilog filter. 5

b) Compare Moore Machine and Mealy Machine. 5

c) Draw and Explain Schmitt Trigger. 5

d) Write the difference between Synchronous and Asynchronous sequential circuit. 5

Q.2 a) Explain the basic requirement of Instrumentation Amplifier and find output voltage expression for Instrumentation Amplifier using three Op-Amp. 10

Q.2 b) Design second order KRC high pass filter with cut off frequency F0=1KHz and Q=5. Draw circuit diagram. 10

Q.3 a) Design the circuit for an astable multivibrator to generate the output signal with frequency of 1KHz and duty cycle of 75% using IC 555.

Assume value of c=0.1μF. 10

Q.3 b) With the neat diagram explain positive Ramp generator using IC 566. 10

Q.4 a) Draw and explain the block diagram of IC 810 audio power amplifier. 10

Q.4 b) Explain the operation of sample and hold circuit and also draw input output waveforms. 10

Q. 5a) Write the VHDL code for 8 bit Shift Register. 10

Q. 5b) Design mealy state machine for sequence detector for the string 1110 10

Q. 6a)Design modulo 10 counter with the counting sequence 5,6,7,8,9,10,11,12,13,14,5,6,7,8,9....14... Using MSI 74X163 10

Q.6b) Explain Op-amp as a comparator and its applications 10

Q. 7 Write short note on any three. 20

a. Xilinx 4000 FPGA
b. Sequential circuit documentation standards
c. Function Generator IC 8038
d. Types of memory devices
