

Code No: 55009

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY, HYDERABAD

B. Tech III Year I Semester Examinations, May/June - 2015

IC APPLICATIONS

(Common to EEE, ECE, ETM)

Time: 3 hours

Max. Marks: 75

Answer any five questions

All questions carry equal marks

- 1.a) Define and explain various op-amp parameters.
b) Give the ideal and practical values of op-amp. [8+7]
- 2.a) With a neat circuit diagram and relevant wave forms explain the operation of monostable multivibrator using op-amp.
b) Design a square wave generator with free running frequency of 1 kHz using Op-amp with supply voltage + /- 15V. [8+7]
- 3.a) Compare active and passive filters.
b) Draw the circuit diagram of first order LPF and HPF and derive the expressions for cut-off frequency. [7+8]
- 4.a) Draw the 555 timer circuit in astable mode to get output waveform with 50% duty cycle.
b) Explain the Pin configuration 565 IC. [8+7]
- 5.a) Explain weighted resistor type DAC with the a neat circuit.
b) With a neat diagram and necessary waveforms explain the operation of Dual slope ADC. [7+8]
- 6.a) With a neat circuit diagram explain the analysis and characteristics of standard TTL NAND gate.
b) With a neat circuit diagram explain the operation of a CMOS transmission gate. [7+8]
- 7.a) Implement full adder with 4 to 1 multiplexer.
b) Implement 64×1 multiplexer with four 16×1 and one 4×1 multiplexer. [7+8]
- 8.a) Explain the operation R-S master slave flip flop. Explain its truth table
b) Explain about the realization of SR flip-flop, JK flip-flop using D flip-flop. [8+7]