

Roll No

EC-4003 (CBGS)**B.E. IV Semester**

Examination, May 2018

Choice Based Grading System (CBGS)**Integrated Circuits and its Applications***Time : Three Hours**Maximum Marks : 70***Note:** i) Attempt any five questions out of eight questions.

ii) All questions carry equal marks.

iii) Assume suitable data, if required.

1. a) What are the advantages and disadvantages of negative feedback? 7
- b) With neat diagram explain single input balanced output differential amplifier? 7
2. a) Explain the construction and working of RC phase shift Oscillator. 7
- b) With neat sketches explain the operation of colpitt's oscillator. 7
3. a) Draw the block diagram of an Op-amp and write the function of each block. 7
- b) Discuss input bias current, Common Mode Rejection Ratio of an op-amp. 7

4. a) Draw the circuit of a first order Butterworth High pass filter and derive the gain and phase angle equation. 7
- b) Design a low pass filter with a cutoff frequency of 1 KHz and with the pass band gain 2. 7
5. a) Explain how an Op-amp can be used as summing amplifier. Draw the diagram of a three input summer and obtain the expression for the output. 7
- b) Explain how Op-amp is used as an Integrator and Differentiator. 7
6. a) Explain the operation of Monostable multivibrator using IC555 Timer. Derive the expression of time delay of a Monostable Multivibrator using IC555. 7
- b) Explain the function of each of the pins in IC555 timer and explain the functional diagrams of a IC555 timer. 7
7. a) What is an instrumentation amplifier? With neat diagram explain instrumentation amplifier with Transducer Bridge? 7
- b) What is a sample and hold circuit? With neat diagram, describe the operation of sample and hold circuit. 7
8. a) Explain fixed and adjustable voltage regulators with suitable diagrams. 7
- b) Draw and explain zero crossing detector with input and output waveforms. 7
