Roll No. ~~(scribbled)~~  Total Printed Pages : **3**

## 05BEC102

**B.TECH (ELEC. & COMM. ENGG.)**

V-SEM Examination, Dec.-2016

**SUB: LINEAR INTEGRATED CIRCUITS**

Time : 3 Hours] [Total Marks 60

Use of following supporting material is permitted during examination.

1. _____ Nil _____ . _____ Nil_____

Note: 1. Attempt any five questions selecting one question from each unit.

2. Each question carry equal marks.

## UNIT-I

1. Define 'unbalanced output'. Derive the expressions for DC and AC analysis of dual input balanced output differential amplifier.

### OR

1. What is **adder**? Explain non-inverting amplifier with expressions and diagrams.

LIC

## UNIT-II

2. Define an oscillator. What are the two requirements for oscillations? Describe the principle and frequency response of integrator.

### OR

2. Explain following—(any two)

i) Differentiator

ii) Square wave generator

iii) wein bridge oscillator

## UNIT-III

3. Explain low pass filter with first order and second order low pass Butterworth filter.

### OR

3. What is filter? Explain wide and narrow band pass filter.

## UNIT-IV

4. Explain operation of PLL with the help of block diagram. Also give brief description of each block.

### OR

4. What is a phase locked loop? Derive the expression for lock range in PLL.

## UNIT-V

5. Explain the 555 timer as astable and monostable multivibrators.

### OR

5. Write short notes on-

i) Zero crossing detector

ii) Schmitt trigger

iii) Multiplier.