C14-EC-**402**

4435

BOARD DIPLOMA EXAMINATION, (C-14)

MARCH / APRIL - 2019

DECE - IV SEMESTER EXAMINATION

LINEAR INTEGRATED CIRCUITS

Time : **3** Hours] [Total Marks : **80**

PART - A **3×10=30**

Instructions : *(1) Answer **ALL** questions.*
*(2) Each question carries **THREE** marks.*
(3) Answer should be brief and straight to the point and shall not exceed five simple sentences.

1 List the advantages of integrated circuits over discrete circuits.

2 Draw the circuit of first order active Low Pass Filter using op-amp.

3 List the characteristics of ideal operational amplifier.

4 Define Input offset voltage and Input offset current of operational amplifier.

5 Distinguish between voltage and current time base generators.

6 Mention the merits of active filters.

7 What is the principle of clamping circuit ?

8 Define Lock range of PLL.

9 List the applications of current to voltage converter.

10 Define the terms resolution and accuracy.

PART - B 10×5=50

Instructions : *(1) Answer any **FIVE** questions.*
*(2) Each question carries **TEN** marks.*
(3) Answer should be comprehensive and the criterion for valuation is the content but not the length of the answer.

11 Explain the fabrication of diode on monolithic IC.

12 Explain the use of operational amplifier as differentiator and integrator with neat circuits.

13 Draw and explain the working of Schmitt trigger circuit using operational amplifier.

14 Draw and explain the RC phase shift oscillator circuit using op-amp.

15 (a) Explain the operation of fixed voltage regulator using 78XX series.

(b) Explain the operation of adjustable voltage regulator LM317.

16 (a) Explain the frequency multiplier using PLL.

(b) Explain the FM demodulator using PLL.

17 Explain the operation of A/d converter using successive approximation method.

18 Draw and explain the instrumentation amplifier using three op-amps. Mention the advantages of instrumentation amplifier.
