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Name.....

Reg. No.....

FIFTH SEMESTER B. Tech. (ENGINEERING) DEGREE EXAMINATION, DECEMBER 2004

EC 2K—504—LINEAR INTEGRATED CIRCUITS

Time : Three Hours Maximum : 100 Marks

Answer **all** *questions.*
Each correct answer carries 5 *marks.*

I. 1 Define PSRR and mention it's ideal and practical values.

2 Define virtual ground and explain its use.

3 What is the advantage of current source as load ?

4 What is meant by wide swing ?

5 Draw non–inverting amplifier using opamp and derive the expression for its input resistance.

6 What is zero crossing comparator ? Mention one of its uses.

7 What is Butterworth filter ? Why is this preferred mostly ?

8 What is Antoniou's gyrator ?

(8 × 5 = 40 marks)

Answer **all** *questions.*
Each correct answer carries 15 *marks.*

II. 1 Draw a differential amplifier circuit utilizing a Darlington pair and explain its operation. What are its merits ?

Or

2 How is slew rate and CMRR measured in laboratory ? Explain with the help of circuit diagrams.

III. 1 Draw a cascode located MOS differential amplifier and explain its operation.

Or

2 What are the important CMOS opamp parameters ? Define five of them and give their ideal and practical values.

IV. 1 Draw an instrumentation amplifier using four opamps and explain the need for each opamp. Derive the expression for its voltage gain.

Or

2 Draw a Wien Bridge oscillator using opamp and derive the expression for its frequency of oscillation. How is amplitude limiting done ?

Or

V 1 Draw a second order active HPF and derive the expression for its cut off frequency. Explain its operation.

Or

2 Draw BPF using delyannis configuation and derive the expression for its band of elimination. Explain the operation.

(4 × 15 = 60 marks)