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BIEL-011

B.Tech. – VIEP – ELECTRONICS AND COMMUNICATION ENGINEERING (BTECVI)

Term-End Examination

00989 **December, 2017**

BIEL-011 : LINEAR INTEGRATED CIRCUITS

Time : 3 hours *Maximum Marks : 70*

Note : *Attempt any **seven** questions. All questions carry equal marks. Use of scientific calculator is permitted. Missing data, if any, may be suitably assumed.*

1. Draw the voltage transfer characteristic curve of an op-amp. List the three open-loop op-amp configurations. *5+5=10*

2. List the characteristics of an ideal op-amp. Also define the following terms : *7+3=10*

   CMRR, Slew Rate and SVRR

3. What are the two basic differential amplifier configurations ? Briefly compare and contrast these configurations. *5+5=10*

4. Define a filter. How are they classified ? List the most commonly used filters. *3+3+4=10*

5. What is the difference between a comparator and Schmitt trigger circuit ? List the important characteristics of a comparator circuit. *5+5=10*

6. (a) What do you mean by the term Voltage Limiting ? Explain the process to obtain voltage limiting. *5*

   (b) Draw a circuit for converting a square wave into a series of '+ve' pulses. *5*

7. Why is emitter resistance (R_E) replaced by a constant current bias circuit in a differential amplifier ? What is the use of cascode configuration in an op-amp ? *5+5=10*

8. How are analog voltages multiplied using a log-antilog amplifier ? Explain with the help of a neatly labelled circuit diagram. *10*

9. Design a 50 Hz active notch filter. *10*

10. Write short notes on any ***two*** of the following : *5+5=10*

(a) Absolute Value Detectors

(b) Clippers and Clampers

(c) Level Translator