

Code No: **R31043**

R10

Set No. 1

III B.Tech I Semester Supplementary Examinations, October/November - 2017

LINEAR IC APPLICATIONS

(Common to Electronics and Communication Engineering, Electronics and Instrumentation Engineering, Bio-Medical Engineering, Electronics and Computer Engineering)

Time: 3 hours**Max. Marks: 75**

Answer any FIVE Questions
All Questions carry equal marks

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| 1 | a) | Draw the ac equivalent circuit of dual input balanced output differential amplifier and derive the expressions for small signal voltage gain, input resistance and output resistance | [9M] |
| | b) | Explain the properties of dual input unbalanced output amplifier. | [6M] |
| 2 | a) | Explain the operation of a grounded load V to I converter using op-amp. | [7M] |
| | b) | What is thermal drift and mention the techniques to minimize the effect of thermal drift? | [8M] |
| 3 | a) | Derive the frequency response of a practical differentiator. | [7M] |
| | b) | Design a practical op-amp differentiator circuit for the frequency of 1KHz and explain its frequency response. | [8M] |
| 4 | a) | Discuss about triangular and square wave generators. | [8M] |
| | b) | Explain the characteristics of Log and Antilog amplifiers. | [7M] |
| 5 | a) | Design an inverting amplifier using 741 op amp. The voltage gain is 50 and voltage gain to be 3V. | [7M] |
| | b) | Explain the operation of Schmitt trigger circuit with input and output waveforms. | [8M] |
| 6 | a) | Explain the terms a) Capture range b) Locked range c) Pull up operation. In PLL | [7M] |
| | b) | Explain the applications of Monostable and Astable timer applications. | [8M] |
| 7 | a) | Explain the operation of astable multivibrator using 555 IC Timer. | [9M] |
| | b) | Design a mono stable multivibrator for 3ms pulse width. | [6M] |
| 8 | a) | With neat sketch explain the principle and operation of successive approximation ADC. | [8M] |
| | b) | Define modulator; explain the balanced modulator with one example. | [7M] |

