

Code No: RT31042

R13**SET - 1****III B. Tech I Semester Supplementary Examinations, May - 2018****LINEAR IC APPLICATIONS**

(Common to Electronics and Communication Engineering, Electronics and Instrumentation Engineering and Electronics and Computer Engineering)

Time: 3 hours

Max. Marks: 70

- Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B**)
2. Answering the question in **Part-A** is compulsory
3. Answer any **THREE** Questions from **Part-B**
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PART -A

- 1 a) What are the properties of dual input unbalanced output differential amplifier? [3M]
- b) Define CMRR of op-amp. [3M]
- c) Derive the gain of non inverting amplifier. [4M]
- d) Draw the schematic of a second order High-pass filter and sketch the frequency response. [4M]
- e) Mention the applications of 555 timer used as Monostable and Astable operations. [4M]
- f) What are the specifications of AD 574 (12 bit ADC) [4M]

PART -B

- 2 a) Analyze the dual input balanced output configuration of differential amplifier using DC. [8M]
- b) Write and Explain about DC coupling and cascaded differential amplifier stages. [8M]
- 3 a) Briefly explain the various types of IC packages. Mention the criteria for selecting an IC package. [8M]
- b) With a neat sketch explain the frequency compensation using pole – zero method. [8M]
- 4 a) Explain, how to obtain triangular wave using a square wave generator. [8M]
- b) Draw the circuit of Log and Anti log Amplifiers explain its operation. [8M]
- 5 a) Compare Active filters with passive filters. [6M]
- b) Discuss in detail about band pass and band reject filters. [10M]
- 6 a) Explain the operation of astable multivibrator using 555 IC Timer. [8M]
- b) Design a Mono stable multivibrator for 3ms pulse width. [8M]
- 7 a) Draw the circuit of weighted resistor DAC and derive expression for output analog voltage V_o . [10M]
- b) Find out step size and analog output for 4 -bit R-2R ladder DAC, when input is 0 1 1 1 and 1 1 1 1, assume $V_{ref}=+5V$. [6M]
