

III B. Tech I Semester Supplementary Examinations, May - 2019**LINEAR IC APPLICATIONS**

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

Time: 3 hours

Max. Marks: 70

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

1. a) What are the advantages of ICs over Discrete components? [2M]
- b) Define PSRR and give its ideal and practical values. [2M]
- c) What is the difference between Inverting and Non-inverting amplifiers? [2M]
- d) What is the significance of higher order filters? [3M]
- e) Define Capture Range and Lock in Range. [3M]
- f) Define settling time and stability of converters. [2M]

PART -B

2. a) Draw the circuit diagram of differential amplifier with Single input and balanced output. Derive expressions for differential gain A_d , input resistance R_i , and output resistance R_o . [7M]
- b) Explain the concept of level translator in detail. [7M]
3. a) Briefly explain the various types of IC packages. Mention the criteria for selecting an IC package. [5M]
- b) Discuss the features of 741 op amp. [4M]
- c) Explain how to measure Offset voltage? [5M]
4. a) Draw and explain the full wave precision rectifier. [7M]
- b) With neat sketch explain the operation of Schmitt trigger using op-amp. [7M]
5. a) With neat sketch explain the working of a band pass filter. [7M]
- b) Explain how a four quadrant multiplier be obtained from single quadrant multiplier. [7M]
6. a) What are the modes of operation of IC555? Derive the expression of time delay of a Astable multivibrator. [7M]
- b) Explain the frequency multiplication and frequency translation applications of PLL with neat diagrams. [7M]
7. a) Discuss about IC 1408 DAC. [7M]
- b) Explain with a neat circuit diagram the operation of 3-bit parallel ADC. [7M]
