

T. E. Sem-V (CBSE) Electronics - DLIC 28/11/16  
 Design with Linear Integrated Circuits.  
 Q.P. Code : 591200

(3 Hours)

[ Total Marks : 80

- N.B. :** (1) Question No.1 is **compulsory** and Solve **any three** from remaining questions.  
 (2) Assume suitable **data** if **necessary**.

1. Solve **any four** questions :
  - (a) Explain the need of dual power supply in Op-amp. 5
  - (b) What is ideal integrator? How disadvantages of Basic integrator can be overcome? 5
  - (c) What is difference between normal rectifier & precision rectifier. Explain half wave precision rectifier. 5
  - (d) List important specifications of ADC 0808. 5
  - (e) Compare voltage regulator with IC 78XX with IC 723. 5
2. (a) Give complete analysis of inverting amplifier Op-amp circuit. Hence design it for voltage gain = 10. 10
- (b) Design RC phase shift oscillator for frequency equal to 10 kHz. 10
3. (a) Design Schmitt trigger circuit to achieve  $UTP = 2V$  &  $LTP = -2V$ . 10
- (b) Explain Dual slope ADC in detail with its advantages & disadvantages. 10
4. (a) Explain PLL using block diagram of 565 PLL. 10
- (b) Design voltage regulator for given specification using 78XX & 79XX IC's 10  
 $V_o = \pm 12V$ ,  $I_L = 100 \text{ mA}$ .
5. (a) Give different filter classifications and hence explain Butterworth & Chebyshev Response. 10
- (b) Explain triangular wave generator using Op-amp. 10
6. Attempt **any four** questions : 20
  - (a) Level detector
  - (b) Voltage to current converter
  - (c) Monostable multivibrator using IC 555
  - (d) Functional diagram of IC 723

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