

- 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 :
- Explain the need of dual power supply in Op-amp. **5**
  - What is ideal integrator? How disadvantages of Basic integrator can be overcome? **5**
  - What is difference between normal rectifier & precision rectifier. Explain half wave precision rectifier. **5**
  - List important specifications of ADC 0808. **5**
  - 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**
- Level detector
  - Voltage to current converter
  - Monostable multivibrator using IC 555
  - Functional diagram of IC 723

Course: T.E. (SEM.-V)

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Correction:

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In Question 6 correction is "Solve all" instead of solve any 4

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