

Total No. of Printed Pages:02

**SUBJECT CODE NO:- H-281**  
**FACULTY OF ENGINEERING AND TECHNOLOGY**  
**S.E. (EEP/EE/EEE)**  
**Analog and Integrated Circuits**  
**(REVISED)**

[Time: Three Hours]

[Max. Marks: 80]

Please check whether you have got the right question paper.

- N.B
1. Question No.1 and Q. No. 6 are compulsory.
  2. Attempt from each section any two Questions from the remaining question.
  3. Assume suitable data where necessary.

## Section A

- Q.1 Answer any five 10
1. What is peak detector?
  2. Define CMRR?
  3. What is BICMOS?
  4. List the applications of instrumentation amplifier?
  5. Draw pin diagram of IC 555
  6. In which two modes IC 555 timer operates?
  7. What is voltage transfer curve of an op-amp?
  8. List the ac and dc parameters of op-amp?
- Q.2 07
- a) Explain with circuit diagram concept of virtual short and virtual ground concept?
  - b) What are the compensation techniques of op-amp. Explain noise and frequency compensation? 08
- Q.3 07
- a) What is zero crossing detectors explain with circuit diagram and output wave forms?
  - b) Explain operation of monostable multivibrator using IC 555. With circuit diagram and output wave forms. 08
- Q.4 07
- a) Explain application of op-amp as a differentiator with neat circuit diagram and output wave forms.
  - b) Explain working of square wave generator with circuit diagram & output wave forms. 08
- Q.5 Write short notes on (any three) 15
1. Schmitt trigger using op-amp
  2. Low voltage ac and dc voltmeter
  3. Precision rectifier
  4. Instrumentation Amplifier.

Section B

- Q.6 Solve any five 10
1. What is band reject-filter?
  2. State applications of PLL?
  3. Define voltage regulator?
  4. What is PLL?
  5. What is switching regulator?
  6. What is all pass filter?
  7. Define frequency response of filter.
  8. List most commonly used active filters?
- Q.7 07
- a) Explain the difference between band-pass and band reject filters?
  - b) With neat circuit diagram describe the working of high pass active filter? 08
- Q.8 07
- a) Explain application of PLL as frequency demodulation?
  - b) Describe the operating principle of PLL with block diagram. 08
- Q.9 07
- a) Describe the function of voltage regulator IC 723 with pin diagram?
  - b) Explain the circuit diagram of basic op-amp series voltage regulator. 08
- Q.10 Write short notes on (any three) 15
1. Passive filters
  2. Switching regulator IC78S40
  3. ICLM565 PLL
  4. Butterworth filter.