



OR

- 6 a. Using 741 opamp with supply voltage of  $\pm 12V$  design Schmitt trigger to have trigger points  $\pm 2V$ . (06 Marks)  
b. Explain sample and hold circuit using of opamp. (10 Marks)

Module-4

- 7 a. Explain second order active low pass filter and also write design equations. (08 Marks)  
b. Explain the function diagram of 723 general purpose regulator IC. (08 Marks)

OR

- 8 a. Design a second order active high pass filter using 741 opamp with cutoff frequency of 12 kHz. (06 Marks)  
b. What is meant by line regulation and load regulator with respect to IC regulators and mention the characteristics of 3 terminal IC voltage regulators. (06 Marks)  
c. Design a first order active low pass filter to have cutoff frequency of 1 kHz. Use 741 opamp. (04 Marks)

Module-5

- 9 a. Explain the operation of a Astable multivibrator using 555 timer. (08 Marks)  
b. Explain operation of PLL with block diagram. (08 Marks)

OR

- 10 a. Explain the operation of a VCO. (08 Marks)  
b. Explain analog to digital conversion using successive approximation method. (08 Marks)

\*\*\*\*\*