14.a) Design a monostable multivibrator for 0.6 s ON time. (10)

b) Outline the process for creating higher order filters and explain why cascades of similar order filters donot give appropriate results. (10)

Module III

15.a) An 8 bit A/D converter accepts an input voltage signal of range 0 to 12 V.

What is the minimum value of input voltage required to generate a change of 1 LSB? (3)

What input voltage will generate all 1's at A/D converter output? (3)

What is the digital output for an input voltage of 6V? (4)

b) Explain the operation of switched capacitor integrator with neat figures. (10)

16 .a) For a 4 bit R-2R ladder D/A converter assume that the full scale voltage is 10V. Calculate the step change in output voltage when input changes from 1001 to 1110. (10)

b) Design a 3 bit simultaneous type A/D converter. (10)

Module IV

17.a)Using 7805 voltage regulator,design a current source to deliver 400mA current to a 50 ohm ,5W load. (10)

b) Find the lock and capture frequencies for PLL 565,with free running frequency of 120Khz,demodulation capacitor of 1μF and supply voltage of +/- 5V. (10)

18.a)Explain the circuit operation of a high voltage regulator using IC 723 with a circuit diagram. Write the equation for output voltage , its range and current that can be obtained using the circuit. (10)

b) Explain how a four quadrant multiplier can be obtained from single quadrant multipliers (10)