

35. a) Derive the transfer function of low pass filter and plot its frequency response.

b) Design a low pass filter with a cutoff frequency of  $10\text{ kHz}$  and ~~pass~~ band gain of 8.

36. a) Derive the transfer function of high pass filter and plot its frequency response.

b) Design a high pass filter with a ~~cut~~ cutoff frequency of  $10\text{ kHz}$  and pass band gain of 10.

37. Design a weighted resistor DAC for the input 11011. Find the output voltage,  
 $V_R = 20\text{ V}$ ,  $R_F = R$ .

38. Explain the operation of four bit R-2R ladder DAC and find the output voltage for the following inputs  
a) 100  
b) 101  
 $V_{FS} = 15\text{ V}$

39. Explain the operation of parallel comparator (Flash) A/D converter.