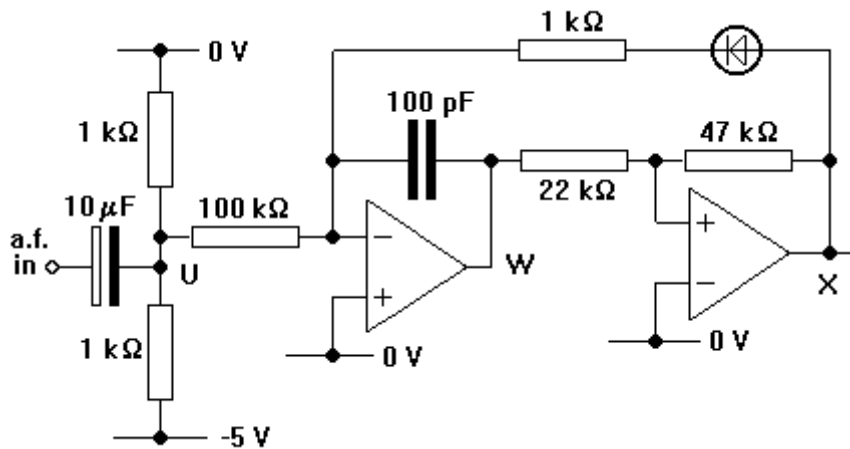
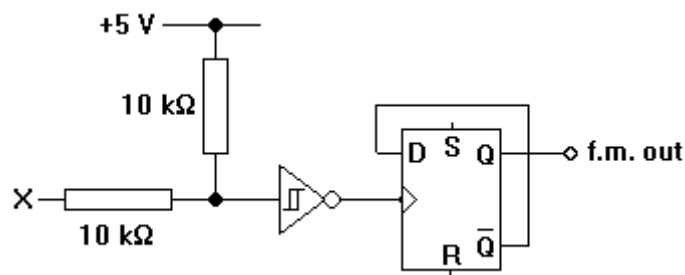


Frequency modulation

- 1 Assemble the frequency modulator circuit shown below.



- 2 Use an oscilloscope to look at the signal at X. If all is well, it should spend most of its time at -4 V, pulsing to +4 V at intervals of 16 s.
- 3 Now add the pulse shaper shown below. It generates a square wave output for the modulator. Think carefully about what to do with the R and S inputs of the D flip-flop.



- 4 Use a signal generator to feed an a.f. signal at 330 Hz into the modulator. Trigger the oscilloscope on the a.f. signal. Note what happens to the f.m. output as the amplitude of the a.f. signal is increased.
- 5 Don't take your circuit apart if you are going to tackle the f.m. demodulator practical.