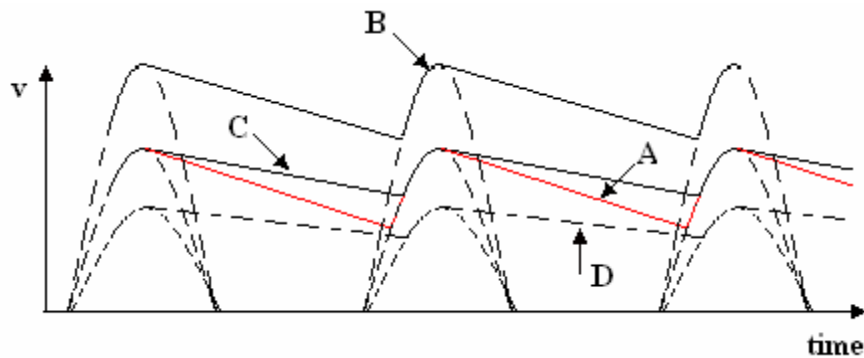
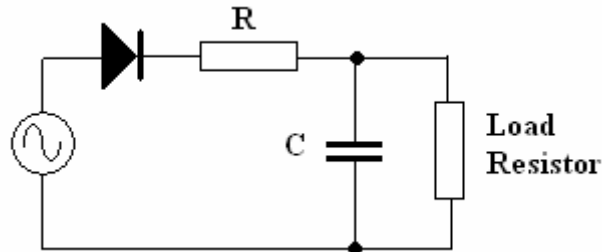


ENGINEERING SCIENCE C103
EXAM SOLUTIONS 2005

- Q 8 a) For the circuit shown, sketch the waveform which would be observed on an oscilloscope connected across the load resistor.
b) Sketch the effect on this waveform of increasing the load resistance.
c) Sketch the effect on this waveform of increasing the value of R.
d) Sketch the effect on this waveform of increasing the value of C.



Graph A shows a typical half wave rectified voltage. During the time the voltage is rising, the capacitor charges and when the voltage starts to fall, the capacitor discharges. The result is DC plus an AC ripple.

Graph B shows the effect of increasing the load resistance. A higher resistance means less current and so the voltage drop across R is reduced and the output voltage increases.

Graph D shows the effect of increasing R. The voltage drop across R is increased so the output voltage is reduced.

Graph C shows the effect of increasing C. A larger capacitor stores more charge so the voltage falls at a slower rate and the result is less AC ripple.