

## Questions on Capacitors

### Q1

- (a) What does it mean if a capacitor is marked '0.1  $\mu\text{F}$  250 V'?
- (b) Why should a capacitor rated at 250V not be used on a 240V a.c. supply?

### Q2

Arrange the following capacitances in order of increasing value:  
100 pF, 4.7  $\mu\text{F}$ , 2.2nF

### Q3

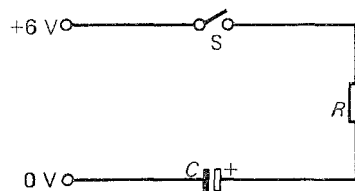
If you wanted to stop d.c. passing through a component but allow a.c. to pass, what would you do?

### Q4

What precaution must be taken when connecting an electrolytic capacitor into a circuit?

### Q5

- (a) For the resistor R-capacitor C circuit shown draw a graph of voltage (y-axis) against time (x-axis) to show what happens to the voltage across C when S is closed. (b) On the same axes draw another two graphs, one for a smaller value of C (label it 'smaller C') and one for a larger value of R (label it 'larger R').



### Q6

- (a) Write down 3 combinations of R and C which will give a time constant of 10s.

- (i) R ..... C.....
- (ii) R ..... C.....
- (iii) R ..... C.....

- (b) How long would it take for the capacitor in an RC circuit with this time constant to become fully charged?