

**Question 13****(5 marks)**

A particle travels in a straight line so that its velocity  $v$  cm/sec and displacement  $x$  cm are related by the equation:

$$v = \frac{2}{x}$$

- (a) Determine the acceleration  $a$  in terms of its displacement  $x$ . (2 marks)

It is known that the initial displacement of the particle is  $x = 2$  cm.

- (b) Determine the displacement  $x$  as a function of time  $t$ . (3 marks)