5 **(a)** Explain what is meant by *angular velocity*. State its SI unit.

……..……..

……..……..

……..…… [2]

(b) A particle is suspended from a point A by an inextensible string of length *L*. It is projected from B with a velocity *V*, perpendicular to AB, which is just sufficient for it to reach point C, as shown in Fig. 5.1.

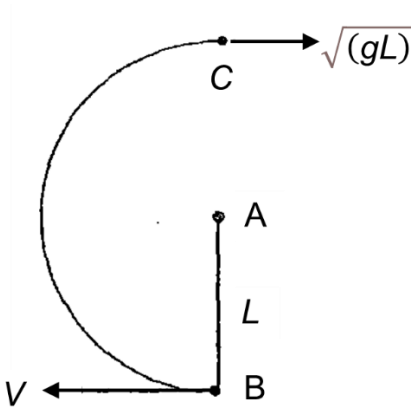

Fig. 5.1

(i) Show that, if the string is just taut when the particle reaches C, its speed at C is $\sqrt{(gL)}$.

[2]

(ii) Determine *V* if *L* is 1.0 m.

V = …… m s^{-1} [2]