

Name: **Key**

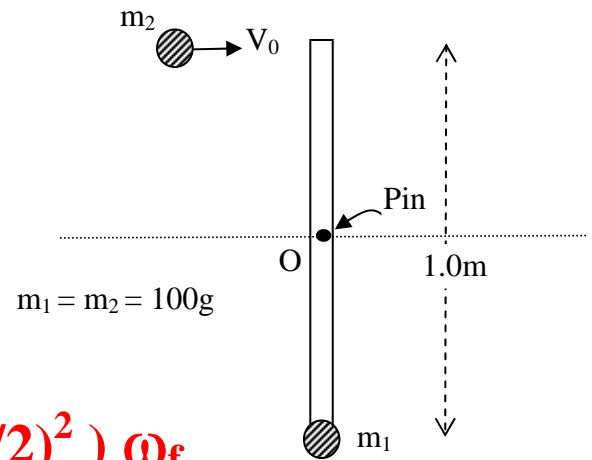
Quiz ( 8)-Sec (7 & 8 )-Ch(11&12)

S.N:

ID : Phys 101 ( Term 041)-(*F. Enaya*)

*Show your steps clearly for full credit!!*

Q1. A 1.0 m massless rod with a mass  $m_1 = 100$  g at the lower end is pivoted at O. The rod is at rest when a mass  $m_2 = 100$  g moving with velocity  $V_0$  strikes the top end and stick to it (see Fig). If the angular velocity of the system just after this collision is 32 rad/s, find  $V_0$ .



$$\mathbf{L_i = L_f}$$

$$\mathbf{m \times V_0 \times (L/2) = ( m(L/2)^2 + m (L/2)^2 ) \omega_f}$$

$$\mathbf{(0.1).(0.5) V_0 = ( 2 (0.1).(0.5)^2 ) 32}$$

$$\mathbf{V_0 = 32 \text{ m/s}}$$