

中國文化大學 105 學年度碩士班考試入學招生考試試題

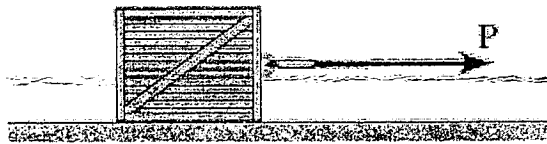
系所組：機械工程學系數位機電碩士班 節次：第 2 節

科目：動力學

1. If a rigid body rotates about point O , the sum of the moments of the external forces acting on the body about point O equals which of the following? (20%)

| | |
|-----------------|-----------------|
| A) $I_G \alpha$ | B) $I_O \alpha$ |
| C) $m a_G$ | D) $m a_O$ |
2. The average speed is defined as _____. (20%)

| | |
|--------------------------|--------------------------|
| A) $\Delta r / \Delta t$ | B) $\Delta s / \Delta t$ |
| C) $s_T / \Delta t$ | D) None of the above. |
3. If the 50-kg crate is subjected to a force of $P = 200$ N, determine its speed when it has traveled 15 m starting from rest. The coefficient of kinetic friction between the crate and the ground is $\mu_k = 0.3$. (30%)



4. The disk is originally rotating at $\omega_0 = 8$ rad/s. If it is subjected to a constant angular acceleration of $\alpha = 6$ rad/s², determine the magnitudes of the velocity and the n and t components of acceleration of point B just after the wheel undergoes 2 revolutions. (30%)

