

國立臺北科技大學九十八學年度碩士班招生考試

系所組別：1511 自動化科技研究所甲組

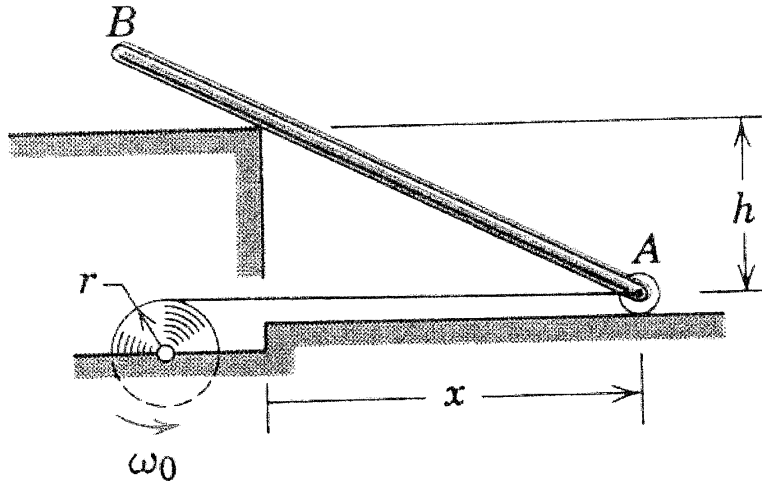
第二節 工程力學（選考）試題

第一頁 共二頁

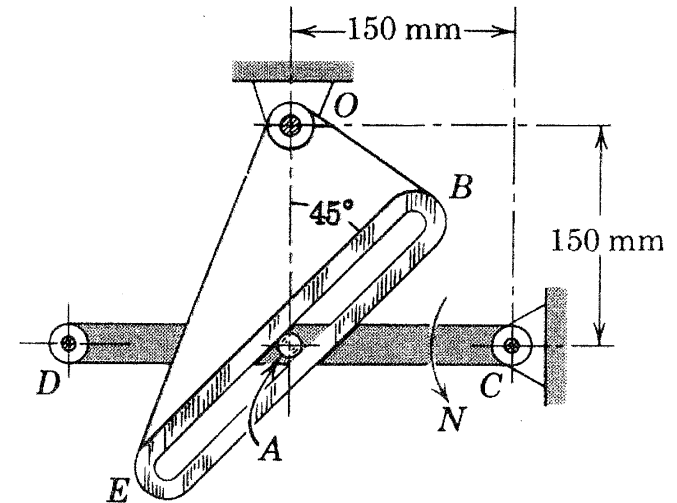
注意事項：

1. 本試題共 4 題，配分共 100 分。
2. 請標明大題、子題編號作答，不必抄題。
3. 全部答案均須在答案卷之答案欄內作答，否則不予計分。

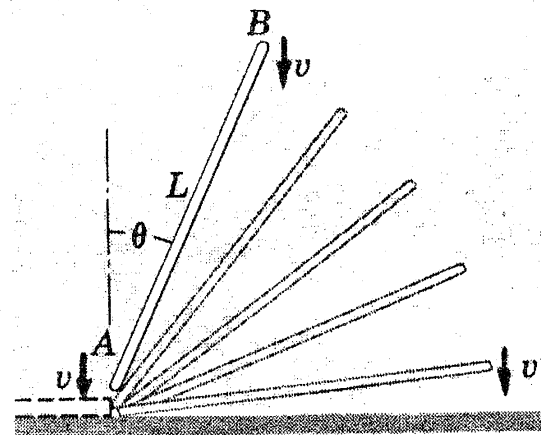
1. Determine the angular velocity of the bar AB as a function of the distance x and the constant angular velocity ω_0 of the drum. (25%)



2. The bar DC is rotating counterclockwise at the constant rate N rad/sec. Determine the angular velocity ω and the angular acceleration α of EBO at this instant. (25%)



3. A uniform pole of length L is dropped at an angle of θ with the vertical axis, and its both ends have a velocity v when End A hits the ground. If End A pivots about its contact point during the remainder of the motion, determine the hitting velocity, v' , with which End B hits the ground. (25%)



注意：背面尚有試題

4. The two circular disks having each of mass m_1 are connected by a curved bar into a quarter-circular arc and welded to the disks. The curved bar has a mass m_2 . The total mass of the assembly is $m = 2m_1 + m_2$. If the discs roll without slipping on a horizontal plane with a constant velocity v of the disc centers, determine the friction force under each disc at the instant represented when the plane of the curved bar is horizontal. (25%)

