

淡江大學九十一年度日間部轉學生招生考試試題

系別：機電工程學系三年級

科目：工程力學(含靜力學、動力學、材料力學)

准帶項目請打「○」否則打「×」
計算機
○

本試題共 / 頁

1. The 1000kg block is held in equilibrium by means of the pulley and continuous cable system shown in Figure 1. If the cable is attached to the pin at B , compute the forces that this pin exerted on each of its connecting members. (25%)

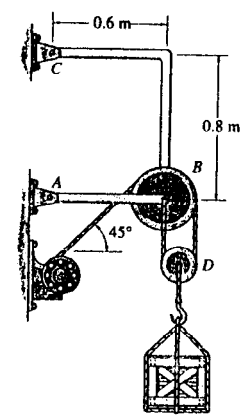


Figure 1

2. The collar at B in Figure 2 slides along the circular bar, causing the pin B to move at constant speed v_0 in a circular path of radius R . Bar BC slides in the collar at A . At the instant shown, determine the angular velocity and, angular acceleration of bar BC . (25%)

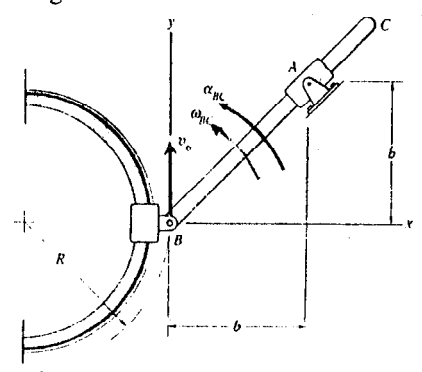


Figure 2

3. A cast iron machine part in Figure 3 is loaded by the 3 kN.m couple shown. (Neglect the effect of fillets)
 (1)(15%) Determine the maximum tensile and compressive stress in the machine part ($E=175\text{ Gpa}$).
 (2)(10%) Determine the radius of curvature of the machine part.

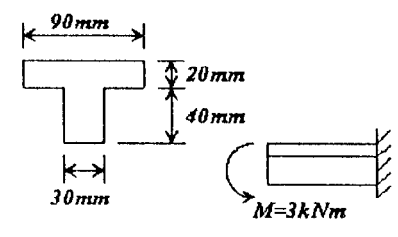


Figure 3

4. Find the equation of the elastic curve for the uniformly loaded, two-span continuous beam shown in Figure 4. (25%) (The EI is constant.)
 (q : uniform load, v : deflection)

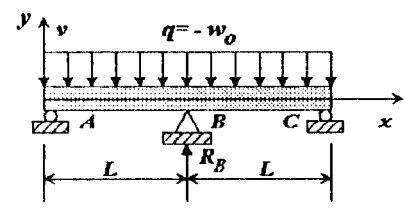


Figure 4