

國立高雄應用科技大學
九十七學年度碩士班招生考試
模具工程系

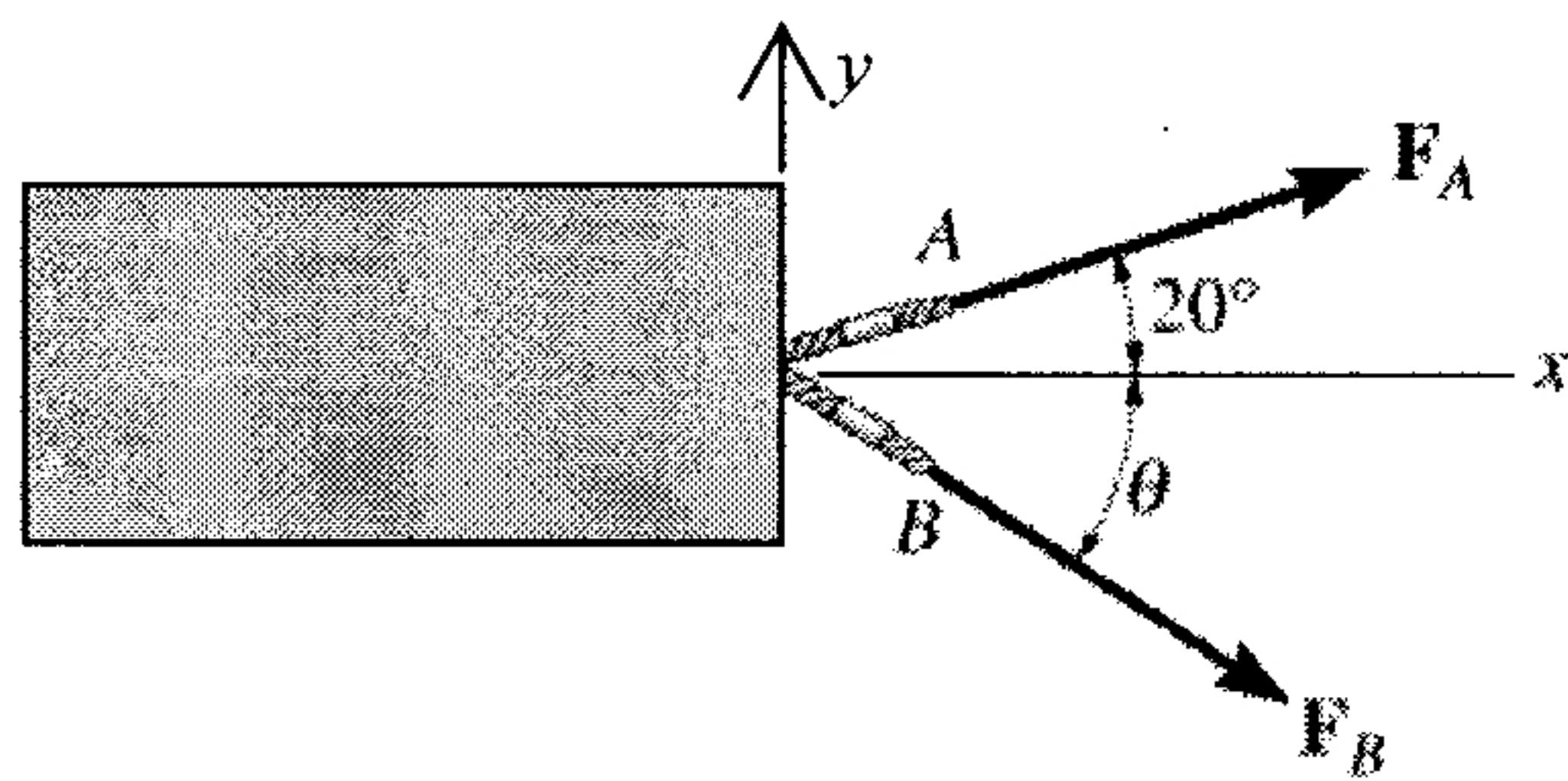
准考證號碼 (考生必須填寫)

靜力學

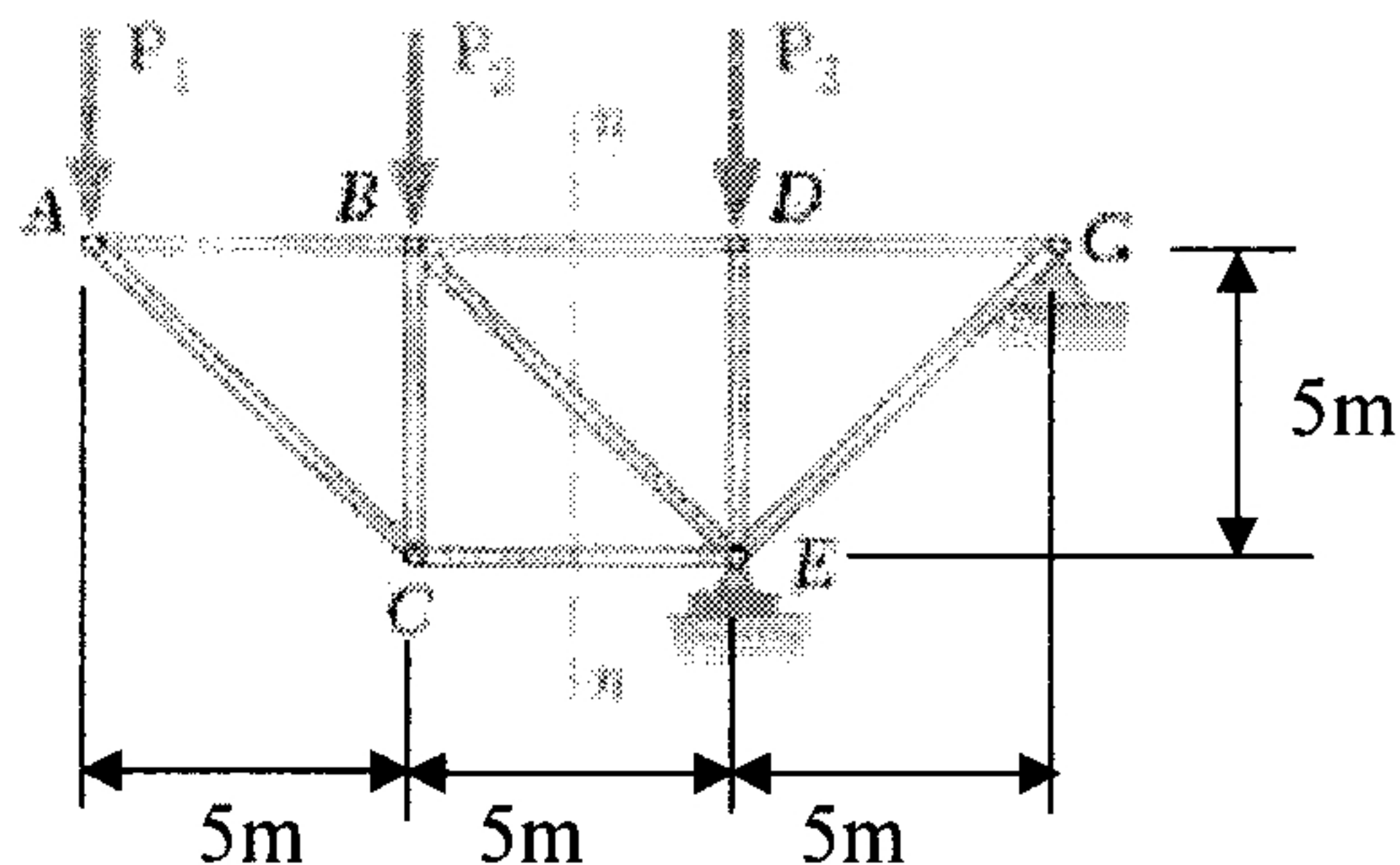
試題 共 2 頁，第 1 頁

- 注意：a. 本試題共 4 題，每題 25 分，共 100 分。
b. 作答時不必抄題。
c. 考生作答前請詳閱答案卷之考生注意事項。

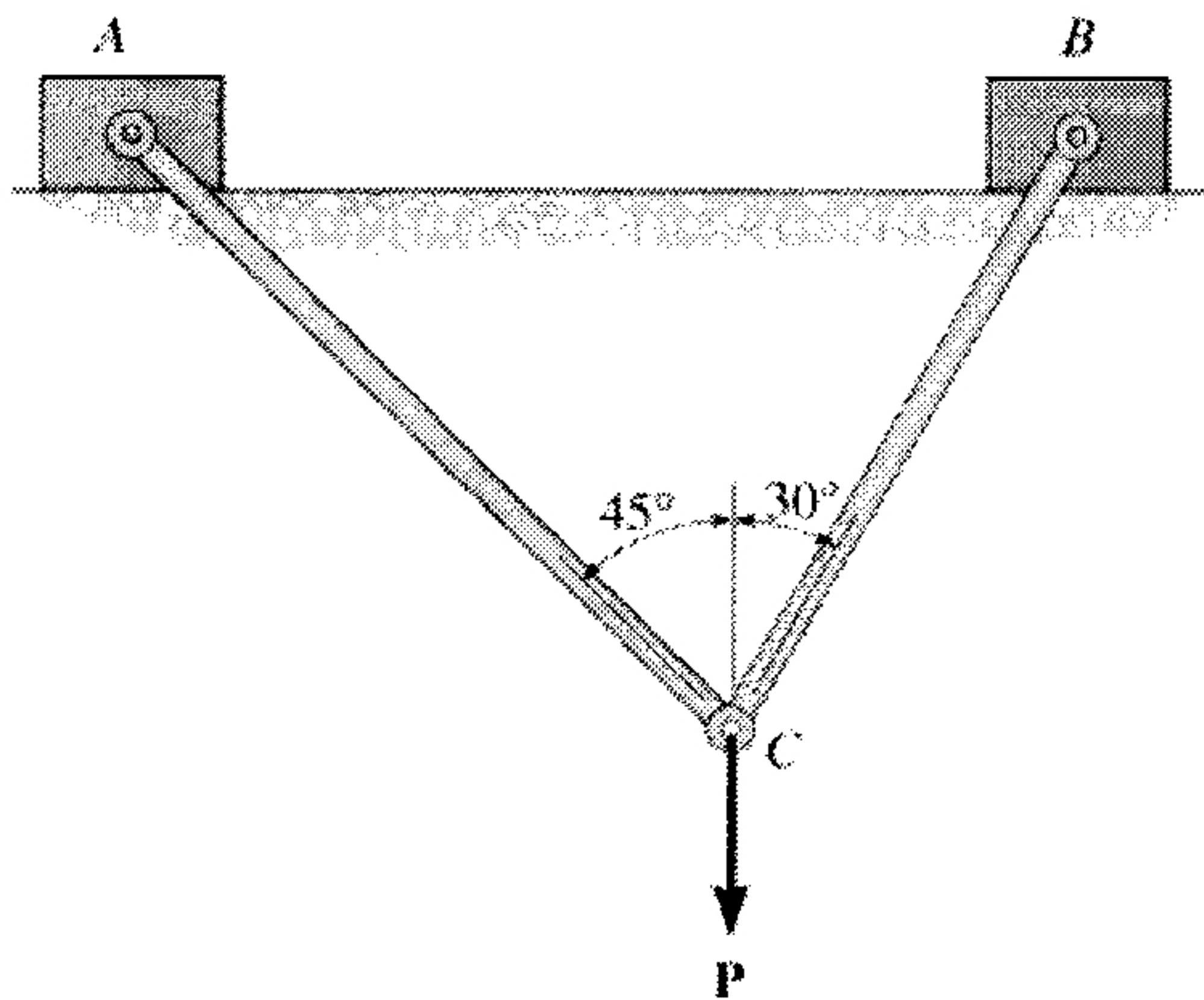
1. The box is to be towed using two ropes. If the resultant force is 1000 N, directed along the positive x axis, determine the magnitudes of forces F_A and F_B acting on each rope and the angle of θ of F_B so that the magnitude of F_B is a *minimum*. F_A acts at 20° from the x axis as shown. (25 分)



2. Determine the force in member BE of the truss as shown in the figure below. The forces P_1 , P_2 and P_3 are all 10 kN. (25 分)



3. Two blocks A and B , each having a mass of 10 kg are connected by the linkage shown. If the coefficients of static friction at the contacting surfaces are $\mu_A = 0.2$ and $\mu_B = 0.8$, determine the largest vertical force P that may be applied to pin C without causing the blocks to slip. Neglect the weight of the links. (25 分)



4. The piston C moves vertically between the two smooth walls. If the spring has a stiffness of $k = 15 \text{ N/mm}$, and is unstretched when $\theta = 0^\circ$ determine the couple M that must be applied to AB to hold the mechanism in equilibrium when $\theta = 45^\circ$. (25 分)

