

# 國立虎尾科技大學 102 學年度第二學期博士班資格考試題

所別：機械與機電工程研究所

第一頁 共一頁

科目：材料力學

注意事項：

- (1) 本試題共有一題，合計一百分。
- (2) 可使用計算機。
- (3) CLOSE BOOK

1. For the beam and loading shown, (a) draw free body diagram and calculate the reaction forces (15%); (b) draw the normal, shear and bending-moment diagrams (20%); (c) find the location of maximum shear force; determine and draw the distribution of stresses over the cross section area (20%); (d) find the location of maximum bending-moment; determine and draw the distribution of stresses over the cross section area (20%); (e) determine the state of plane stress on the neutral axis of point B; draw the Mohr's circle; determine the principal stresses and maximum in-plane shear stress; specify the orientation of the element in each case (25%).

