

# 國立虎尾科技大學 109 學年度第一學期博士班資格考試題

系別：動力機械工程系機械與機電工程博士班

第 1 頁 共 1 頁

科目：機械製造

注意事項：

- (1) 本試題共有 5 題，每題 20 分，合計一百分。
- (2) 請依序作答於答案卷上並註明題號，若未註明選答題號及超過規定題數時，謹採計作答順序較前之題目計分。
- (3) 可使用計算機/close book

1. Explain the main construction and transmission steps of the indexing head?
2. What is the principle of punching shear processing? What kinds are there?
3. Discuss some of the defects that can occur in plastic injection molding?
4. What are the principal methods used to produce metallic powders?
5. A tensile test uses a test specimen that has a gage length of 50 mm and an area = 200 mm<sup>2</sup>. During the test the specimen yields under a load of 98,000 N. The corresponding gage length = 50.23 mm. This is the 0.2 percent yield point. The maximum load of 168,000 N is reached at a gage length = 64.2 mm. Determine (a) yield strength, (b) modulus of elasticity, and (c) tensile strength. (d) If fracture occurs at a gage length of 67.3 mm, determine the percent elongation. (e) If the specimen necked to an area = 92 mm<sup>2</sup>, determine the percent reduction in area.