Summer Examinations 2016

ECN201316N

Module Title: Intermediate Microeconomics
Level: Five
Time Allowed: Two hours

Instructions to students:

- Enter your student number not your name on all answer books.
- Section A carries 20% of the overall marks.
  Section B carries 20% of the overall marks.
  Section C carries 30% of the overall marks.
  Section D carries 30% of the overall marks.
- Answer all questions.
- The use of a non-programmable calculator is permitted.

No. of Pages: 5
No. of Questions: 5
Section A

1. Calculate the Marginal Rate of Substitution (MRS) for the following utility functions:
   
   a. \( U_1 = X^{0.5} \ Y^{0.5} \)
   
   b. \( U_2 = 4X + 2Y^{0.5} \)
   
   c. \( U_3 = Y/X^2 \)

2. Calculate the level of risk aversion according to the Arrow – Pratt formula for the following utility functions:
   
   a. \( U_1 = X^{0.5} \ a^{-0.5} \)
   
   b. \( U_2 = 2X \)
   
   c. \( U_3 = a - 2 + b^{0.5} - 1/X^2 \)

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End of Section A
Section B follows overleaf
Section B

3. A consumer has Utility Function \( U = X^2 + 0.5 \, Y^2 \) and his income is equal to 50£. The price for the good X is 1£ and the price for the good Y is 2£.

a. Calculate the optimum quantity of the good X, Y and the marginal utility of money \( \lambda \).

b. How much is the value of the Utility?
Section C

4. Two firms produce with constant marginal cost and average cost £147. The market demand is \( Q = 339 - P \), where \( Q = Q_1 + Q_2 \) and \( Q_1 \) is firm 1’s output and \( Q_2 \) is firm’s 2 output.

a. If the two firms compete a la Cournot, write down marginal revenues, and so derive their reaction functions.

b. Solve this, finding prices, outputs and the two firms’ profits in a Cournot- Nash equilibrium.

End of Section C
Section D follows overleaf
Section D

5. Explain what is

   a. Adverse Selection
   b. Moral Hazard

   and give some examples (maximum half page).

End of Section D
End of Paper