2022 EXAMINATIONS

PART II

ECONOMICS

ECON 207 MICROECONOMIC ANALYSIS MAIN (2 hours 30 mins + 30 mins uploading time)

Candidates should answer THREE questions including ONE question from SECTION A and ONE question from SECTION B.

You have 2.5 hours to complete this paper. Within this time, you must answer and prepare a single response in digital PDF format (typing all large blocks of text and scanning of any formula, diagrams, graphs etc.), and most importantly, you must save your file before the end of the 2.5 hour window (evidenced in the file properties date/time). You then have a further 30 minutes in which to upload your examination file to the Moodle page. If you have any issues uploading your file, be sure to e-mail your file to economics.examhelp@lancaster.ac.uk before the end of the upload window to avoid penalty.

PLEASE TURN OVER

SECTION A

1. There are two mobile phone firms operating in a market; FF (Firm 1) and Wodaphone (Firm 2). The market demand is $P = 75 - 0.5(Q_1 + Q_2)$. The total costs for the two firms are $30Q_1$ and $30Q_2$.

   (a) If either FF or Wodaphone enjoyed a monopoly position in this market, what level of output would they produce?

   (b) Using a diagram, fully labelled, describe how the equilibrium outputs for the two firms are determined and solve mathematically for this solution.

   (c) The CEO of FF meets with her counterpart at Wodaphone and suggests that the two firms each produce 22.5 units. The CEO of Wodaphone accepts this suggestion. Why did the CEO of FF make this suggestion, and why did her counterpart at Wodaphone agree? Show this outcome on your diagram in (b).

   (d) After keeping to this agreement for 12 months, the CEO of Wodaphone notices that FF is actually producing more than 22.5 units. Why is FF doing this? Illustrate this on your diagram in (b). What action can Wodaphone take against FF?

2. A consumer buys only two goods, X and Y, with prices of $p_X$and p_Y and has an income of m. Use diagrams to indicate consumer preferences, including details of the marginal rate of substitution, in the cases where:

   (a) X is a Sierra Blue iPhone 13 Pro and Y is a Graphite iPhone 13 Pro. Assume that the consumer is indifferent between the two colours.

   (b) X is a right foot Nike Air Max Vapormax trainer and Y is a left foot Nike Air Max Vapormax trainer.

   (c) X is an iPad Pro and Y is a Balenciaga jacket.

   (d) Suppose that the consumer wins a substantial sum of money in the UK's National Lottery, how will this affect her consumption choices in each of the cases above? Illustrate the effects on your diagrams.

   (e) Suppose that due to supply change shortages, the price of X increases, how will this affect the consumer's choices in each of the cases above? Illustrate the effects on your diagrams.

PLEASE TURN OVER

SECTION B

3. Dancaster Utilities is a natural monopoly which is in charge of supplying water to the city of Dancaster. Competitive price and quantity are 10 and 5. Monopoly price and quantity are 12 and 3.

   (a) Illustrate graphically and explain the welfare loss that takes place due to monopoly behaviour.

   (b) Explain and illustrate graphically which is the desirable regulated price that the local government should impose.

   (c) Which is the socially efficient level of output?

   (d) Illustrate graphically the case where the government regulates the price at too low a level. What will occur in the market? And regarding social welfare?

4. Firm 1 and Firm 2 are in a duopoly, earning each annual profits of £10 million per year. Firm 1 could earn £20 million per year as a monopolist. Firm 1 drops its price to £40 when its marginal cost is £50 and holds it there for a year to be able to drive Firm 2 out of the market.

   (a) What pricing strategy is the manager of Firm 1 considering? Explain this strategy and how it helps to reduce competition in a market.

   (b) The year that it drops its price, Firm 1 will lose £10 million. At what level of interest rate *i* will the strategy of Firm 1 be profitable?

END OF PAPER