UNIVERSITY OF LONDON

BSc EXAMINATION 2013

For Internal Students of
Royal Holloway

DO NOT TURN OVER UNTIL TOLD TO BEGIN

EC3313: Industrial Economics - Spring Midterm

Time Allowed: ONE hour

Answer ALL questions .

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1. Consider a monopolist who sells two products, towels and face cloths, to two consumers. The marginal cost of each product is, for simplicity, zero. The consumers differ in tastes; consumer 1's willingness to pay is \$4 for a towel and \$1 for a face cloth, while consumer 2's willingness to pay is \$3 for a towel and \$2 for a face cloth. Each consumer's willingness to pay for a bundle containing a towel and a face cloth is simply the sum of the willingness to pay for the separate products. Should the monopolist bundle the products instead of selling them separately in order to maximize profits? Show your calculations and motivate your answer. In particular explain when bundling makes sense in general. Note: the answer does not have to be long, as long as it is precise and clear. **(10 marks)**

2. In 1998, the European Commission fined Volkswagen more than 100m euros for preventing its dealers in Italy from selling to foreign buyers. Knowing that Volkswagen is using price discrimination, is this the right decision from a Pan-European social welfare point of view? A concise answer should be enough, you can use graphs if you need to. **(10 marks)**

3. Consider two firms whose products are imperfect substitutes. The per-period demand for each firm's product depends, in part, on the price that the rival charges for its product. Specifically, suppose that

$$q_1 = 16 - 4p_1 + 2p_2$$

and

$$q_2 = 16 - 4p_2 + 2p_1$$

Suppose that both firms have zero marginal costs.

(a) What are the prices set by the two firms in a (static) equilibrium where the firms compete in prices? What is the level of profits obtained by each firm?

(b) Suppose now that the two firms collude by coordinating their prices. What common price p should they agree on in order to maximize total joint profits? What are the resulting profits?

(c) Suppose now that firm 1 deviates from the collusive price. Determine the firm's optimal deviation and its profits.

(d) Suppose now that the horizon is infinite and that the firms discount the future by the factor δ¡1. For what values of δ is a grim trigger collusive agreement a subgame perfect Nash equilibrium? (tip: every player follows a grim-trigger strategy where a deviation from any firm from the collusive agreement leads to the Nash equilibrium derived in part (a) being played forever after) **(30 marks)**

(Total 50 marks)

END