Version JKR/3

EGT2
ENGINEERING TRIPOS PART IIA

Friday 9 May 2025 14.00 to 15.40

Module 3E1

BUSINESS ECONOMICS

*Answer not more than **two** questions.*

All questions carry the same number of marks.

*The **approximate** percentage of marks allocated to each part of a question is indicated in the right margin.*

*Write your candidate number **not** your name on the cover sheet.*

STATIONERY REQUIREMENTS
Single-sided script paper.

SPECIAL REQUIREMENTS TO BE SUPPLIED FOR THIS EXAM
CUED approved calculator allowed.

10 minutes reading time is allowed for this paper at the start of the exam.

You may not start to read the questions printed on the subsequent pages of this question paper until instructed to do so.

You may not remove any stationery from the Examination Room.

1 A jazz-club owner has students as well as other adults as customers. The demand curve for drinks for a typical student is $Q^S = 18 - 3P$. The demand for drinks for other adults is $Q^A = 10 - 2P$. The marginal cost of each drink is £2. Provide your reasoning/calculations when answering the questions below.

(a) What price will the club owner set if it is not possible to differentiate between students and other adults? Compute the total profit. [20%]

(b) If the club owner can charge a different price to students and to other adults, what prices should be charged? Compute the total profit. [20%]

(c) Assuming the club owner can distinguish students from other adults would like to sell to each group by offering a number of drink tokens for a cover charge (a cover charge is a fixed fee paid for admission to a club, a bar or a restaurant), what will the cover charge and number of tokens be for students? For other adults? Compute the total profits. [15%]

(d) The club decides that is too difficult to distinguish students from other adults coming to the club. If the club owner would like to offer the same number of tokens calculated in part (c) for each type, what cover charge should be charged for students? For other adults? [20%]

(e) Comment on the feasibility and welfare consequences of the different pricing strategies proposed. [25%]

2 Answer all questions below.

(a) Global supply chains have been affected by the prospects of higher tariffs on goods and services. Assuming a perfectly competitive model, explain the effect of tariffs on price, quantity and welfare. Who are more likely to bear the burden of higher tariffs, consumers or producers? Explain. Include diagrams in your answer to illustrate the effect of tariffs. [50%]

(b) Consider the following differentiated Bertrand game and justify your answers.

		Firm 2	
		Charge $6	Charge $4
Firm 1	Charge $6	4, 6	3, 2
	Charge $4	6, 1	5, 3

(i) Find all Nash Equilibria in pure and mixed strategies. [15%]

(ii) What would happen if the game is played for three periods of time? Is played repeatedly over time? [20%]

(iii) Now suppose that the payoffs shown are for a sequential game that will be played just once. Is there a first mover advantage in this game? Explain and include diagram(s). [15%]

3 Answer all questions below.

(a) An amusement park is considering two alternative forms of sales promotions.

(i) One promotion would give one free day to customers who pay for three days at the normal rate. For any additional days, regular price is charged. Discuss the effect of this promotion for a typical consumer that would take part in the promotion and another that would not take part in this promotion. Include a diagram in your answer. [20%]

(ii) Another promotion would give two visits at half price, after a customer has visited the park for two days at full price. For more than four days, however, full price is charged. How does the promotion affect the budget constraint? Would more consumers participate? Include a diagram in your answer. [20%]

(iii) Which promotion should the amusement park adopt? What does your answer depend on? [10%]

(b) "Markets are efficient, and governments should not intervene". Discuss. [50%]

END OF PAPER