UNIVERSITY COLLEGE LONDON

EXAMINATION FOR INTERNAL STUDENTS

MODULE CODE	:	**ECON3012**
ASSESSMENT PATTERN	:	**ECON3012B**
MODULE NAME	:	**Economics of Competition Policy**
DATE	:	**26 May 2016**
TIME	:	**2:30 pm**
TIME ALLOWED	:	**2 hours**

This paper is suitable for candidates who attended classes for this module in the following academic year(s):

2015/16

TURN OVER

SUMMER TERM 2016

ECON3012: ECONOMICS OF COMPETITION POLICY

TIME ALLOWANCE: 2 HOURS

*Answer **THREE** Questions: **TWO** questions in **Part A** and **ONE** question in **Part B**.*

The Part A questions are worth 30 marks each. The Part B question is worth 40 marks. You are advised to take account of this marking scheme when allocating your time in the exam. This exam is worth 80% of your total mark for the course. The remaining 20% is for the group case study wiki project already submitted.

In cases where a student answers more questions than requested by the examination rubric, the policy of the Economics Department is that the student's first set of answers up to the required number will be the ones that count (not the best answers). All remaining answers will be ignored.

PART A - 60 MARKS

Answer **BOTH** questions from this part.

You can round all numbers to two decimal places.

A1 Two pharmaceutical companies, Pharma A and Pharma B, are the only producers of Vitamin C supplements. The cost of producing Vitamin C supplements for each firm is:

$$C_i(q_i) = 40q_i$$

Market demand for Vitamin C supplements is:

$$Q = 1000 - 10P$$

a) The companies compete in one period by announcing how many Vitamin C supplements they will sell simultaneously. What is the industry equilibrium (price, output and firm profits)?

b) Say the two firms compete over an infinite time horizon. What discount rate would be sufficient for them to sustain a collusive outcome? You can assume that the collusive agreement takes the following form: firms set collusive prices as long as both firms played the collusive strategy in the previous period. If either firm deviates, both firms resort to producing the competitive quantities (in part a) for all future periods.

c) How, if at all, would the condition on the discount rate change if there were five firms, with the same marginal costs, in the market for Vitamin C supplements? Intuitively explain your answer and provide relevant calculations. You can assume that if there is collusion all firms will be part of the collusive agreement and the collusion contract will be the same as in part b.

d) Is the scale of the discount rate the only factor that influences whether or not firms would collude in this market? Provide a brief explanation for your answer.

A2 Two firms, Date1 and Date2, provide online dating services. For each firm the cost of providing the online dating service is:

$$C_i(q_i) = 4q_i$$

Market demand for dating services is

$$Q = 22 - P$$

a) Say, from the perspective of consumers, the two online dating services are exactly the same. Date1 and Date2 compete on the price that they charge. What will be the equilibrium price and output if they compete simultaneously in one period?

b) The firms change their services so that consumers now perceive the online dating services to be similar but slightly different. Demand for the two services is now:

$$q_1 = 22 - 2p_1 + p_2$$

$$q_2 = 22 - 2p_2 + p_1$$

What will the new equilibrium prices and outputs be if they continue to compete on price simultaneously in one period? Draw and calculate your answers.

c) Imagine the costs of Date2 increase as a result of efforts to make their service different. The costs of the two firms are now:

$$C_1(q_1) = 4q_1$$

$$C_2(q_2) = 10q_2$$

What will the new equilibrium prices and outputs be if they continue to compete on price simultaneously in one period? Draw and calculate your answers.

d) Considering Date1, Date2 and consumers of online dating services, who benefits and who loses out when the market transforms from a homogeneous product market with symmetric costs to a differentiated market with asymmetric costs? Is this consistent with your expectation of the welfare effects of product differentiation?

PART B - 40 MARKS

Answer **ONE** question in this part.

B1 *In April 2015 the European Commission formally opened an anti-competitive investigation against Google. Amongst other matters, the European Commission is investigating whether Google's strategies that tie different Google applications, services and software together could be detrimental for competition in the Android market.*

UCL Economics students are interested in understanding the economics of tying better. You have been asked to write a short article for the Drayton Tribune, the UCL Economics Society Student Newspaper, to explain what the potential economic benefits and economic risks of tying might be for competition in any market. Your ideas should be supported by solid economic analysis and should include examples of tying from the Google case and/or other markets.

B2 *Advertising will always enhance consumer welfare in an oligopoly market.*

Do you agree with this claim? Explain your answer and make sure your ideas are supported by solid economic analysis.

B3 *If it is known that firms compete on price, Competition Authorities do not need to intervene in a market as the outcome will be consistent with perfect competition.*

Discuss this statement, explaining the circumstances under which the claim may be true and exploring at least three situations in which the claim may not be true. Your ideas should be supported by solid economic analysis.

B4 *Three companies sell books to consumers online. One of the companies, AmaBig, had 45% market share in 2012 and 80% market share in 2015. In 2013 and 2014 AmaBig's prices were lower than those of its competitors.*

You have access to pricing and cost data for all three companies over the period 2012 to 2015 and you have been asked to investigate whether AmaBig may be guilty of predatory pricing.

What cost tests could you use to assess whether prices are predatory? What are the limitations of these tests and what else could you do to test for predatory pricing? Your ideas should be supported by solid economic analysis.