

UNIVERSITY OF LONDON
IMPERIAL COLLEGE OF SCIENCE, TECHNOLOGY AND MEDICINE

EXAMINATIONS 2003

MEng Honours Degrees in Computing Part IV
for Internal Students of the Imperial College of Science, Technology and Medicine

*This paper is also taken for the relevant examinations for the
Associateship of the City and Guilds of London Institute*

PAPER C442

MANAGEMENT - ECONOMICS AND LAW

Wednesday 7 May 2003, 10:00
Duration: 120 minutes

Answer THREE questions

Paper contains 4 questions
Calculators not required

Section A (*Use a separate answer book for this Section*)

1a Define what is meant by

- i) the marginal propensity to consume
- ii) the multiplier effect
- iii) the accelerator coefficient.

Describe how the multiplier and accelerator effects may interact to cause fluctuations in the level of economic activity in a country.

- b Discuss how fluctuations that occur in the level of stocks held within an economy may provide an alternative explanation for the cyclical movements that tend to arise in an economy.
- c Explain what is meant by *discretionary fiscal policy* and briefly discuss the problems associated with using it to 'fine tune' the economy.

The three parts carry, respectively, 45%, 25% and 30% of the marks.

2a Explain what is meant by *cost-push* inflation.

Discuss the circumstances under which a *wage-price spiral* may occur and suggest policies for halting such a spiral.

Discuss the possible effect of an increase in domestic prices on that country's balance of payments and explain how an *exchange rate-price spiral* may then arise.

b Explain the connection between changes in the level of domestic interest rates and

i) movements in the price of government bonds ('gilts')

ii) movements in the country's exchange rates.

c A recent article commenting on the growth of the Chinese economy stated that "... when a country's economy grows fast either real wages rise or the exchange rate starts to appreciate, or both".

i) Explain what is meant by *real wages* and why they may be expected to rise in these circumstances.

ii) Explain what is meant by an *appreciation* of the exchange rate and why it might be expected to occur in these circumstances.

The three parts carry, respectively, 50%, 20% and 30% of the marks.

Section B (*Use a separate answer book for this Section*)

- 3 Annabel purchases two computer programs. Zerco created the first program; it calculates the income tax and PAYE payments to be paid to Inland Revenue for the housekeeper Annabel employs. She purchased the program from an on-line retailer, Whizzit plc and downloaded it on to her computer over the Internet. The information from Zerco reads: 'Satisfaction guaranteed or your money refunded – Zerco guarantees your tax calculation success.'

The second program is from Yerco and Annabel installs it on her computer from a CD-ROM. The purpose of the Yerco program is to calculate the tax she owes to Inland Revenue on her own income. Annabel uses both programs.

Unfortunately, a virus corrupts Annabel's computer and she is unable to view some data. She has Vincent, a computer engineer, come and look at the computer. Vincent partly disassembles her computer and the computer short circuits. Annabel, seated next to Vincent, is electrocuted and badly injured. She is unable to work for several months and she loses all the data held in her computer. This included a series of articles she had already sold to a leading magazine on the topic of 'Your computer and you'.

While Annabel is recovering from her injuries, Inland Revenue notify her that she has only paid a third of the amounts owing on her own account and also on the account of her housekeeper (for whom she is liable). Inland Revenue inform her that she must make payment of the amounts outstanding and pay a substantial penalty.

Advise Annabel as to the aspects of law involved in these problems and any remedies she may be able to obtain.

- 4 Minton plc are booksellers who trade in new and antiquarian books. In an attempt to modernise their business practices, they decide to record all their inventory and sales in a computer database. They also decide to sell books over the Internet. They hire Norman to write the necessary computer programs. Oliver, a Minton employee, assists him. Norman writes three programs – one organises the inventory of new books, the second organises the inventory of antiquarian books, and the third allows Minton to sell books over the Internet. Norman prepares the first program after closely examining a program written by his flat-mate, Peter. Peter works for Congo plc, a competitor of Minton's.

Oliver installs the three programs on Minton's computers. He also prepares copies of Sentence, a word processing program, from his home computer. He brings these copies, on floppy disks, into Minton's with the intent of installing the program on their computers.

Norman receives an attractive offer of employment from Mississippi plc, another Minton's competitor. He accepts it and leaves Minton. Norman writes a program for Mississippi which is similar in operation to the program he prepared at Minton for the organisation of antiquarian books. When Minton learns of this, they write to him and order him not to use the program. Their letter angers Norman and he gives Oliver several floppy disks and informs him to run the programs on Minton's computers. Oliver follows these instructions. The disks contain viruses that are automatically e-mailed to all of Minton's customers. The effect of the virus is to cause a sentence to run across the bottom of the screen of an infected computer. The sentence reads 'never trade with Minton'.

Minton seeks your advice as to the legal effect of Oliver and Norman's actions.