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22135107

ECONOMICS
HIGHER LEVEL
PAPER 3

Candidate session number								
0	0							

Friday 3 May 2013 (morning)

1 hour

Examination code

2	2	1	3	–	5	1	0	7

INSTRUCTIONS TO CANDIDATES

• Write your session number in the boxes above.
• You are permitted access to a calculator for this paper.
• Do not open this examination paper until instructed to do so.
• Answer two questions in the boxes provided.
• Unless otherwise stated in the question, all numerical answers must be given exactly or correct to two decimal places.
• You must show all your working.
• The maximum mark for this examination paper is *[50 marks]*.

*Answer **two** questions. Each question is worth **[25 marks]**. Write your answers in the boxes provided.*

1. (a) In the small town of Burbia, the weekly demand and supply functions for a pack of cigarettes are as follows

$$Q_D = 700 - 25P \qquad\qquad Q_S = 100 + 50P$$

Where Q_D and Q_S are quantities in packs per week and P is the price per pack in dollars.

(i) Calculate Q_D and Q_S at a price of \$14 per pack. *[2]*

(ii) Calculate the price which would result in a demand of 475 packs per week. *[2]*

(This question continues on the following page)

(Question 1 continued)

(iii)   Calculate the equilibrium price and quantity.   *[2]*

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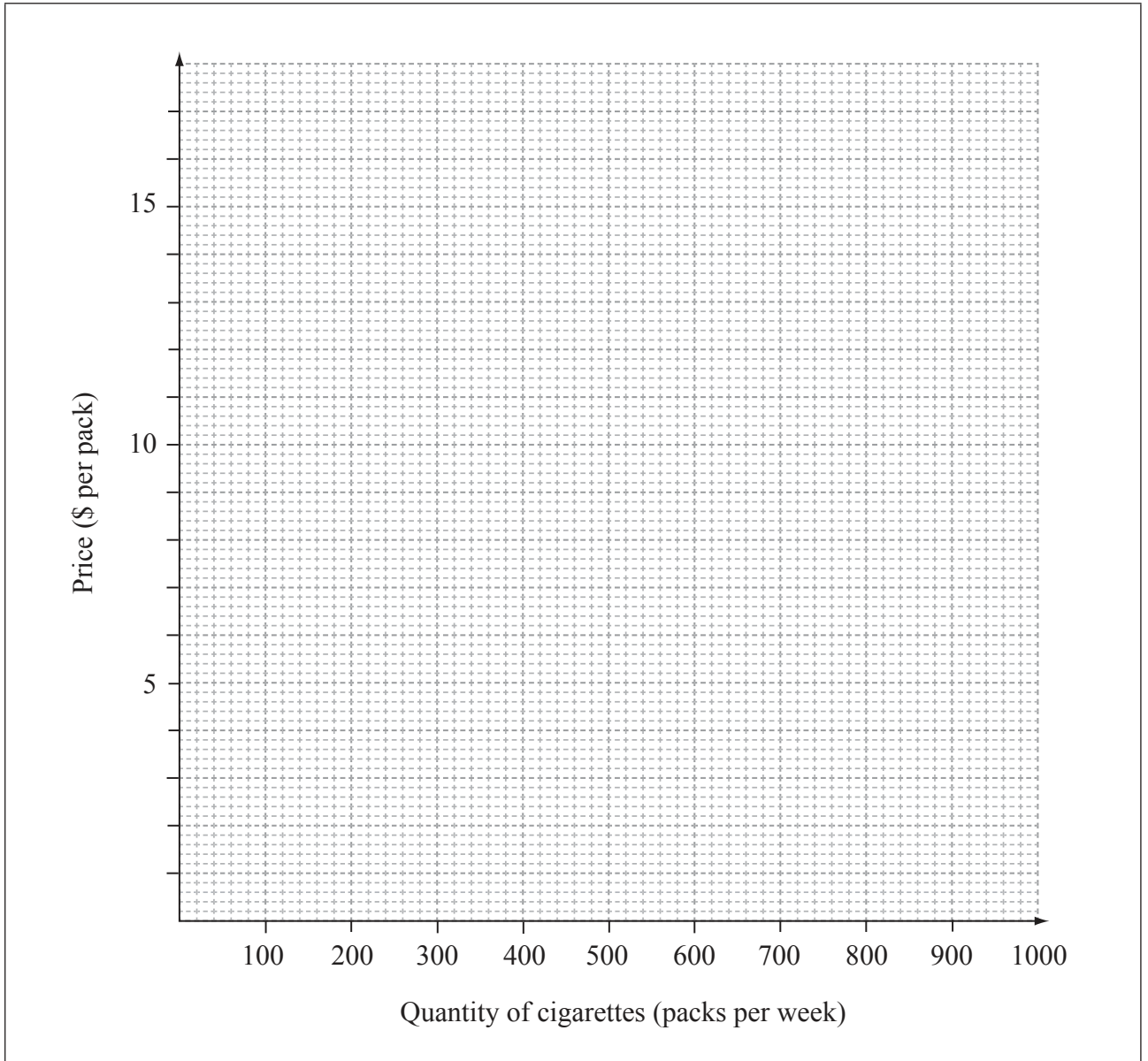*(Question 1 continued)*

(b) On the axes below, draw the demand and supply curves using a price range from $2 to $16 per pack. Each curve should be labelled. *[4]*

(graph with axes: y-axis labelled "Price ($ per pack)" with markings at 5, 10, 15; x-axis labelled "Quantity of cigarettes (packs per week)" with markings at 100, 200, 300, 400, 500, 600, 700, 800, 900, 1000)

(c) In order to discourage the consumption of cigarettes, the government imposes a specific indirect tax of $6 per pack.

On the above graph, plot the new supply curve to illustrate the effect of the indirect tax. *[2]*

(This question continues on the following page)

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(Question 1 continued)

(d) On the axes below, sketch a diagram and use it to explain how the new supply curve would have been different if the government had imposed an *ad valorem* tax on cigarettes. *[4]*
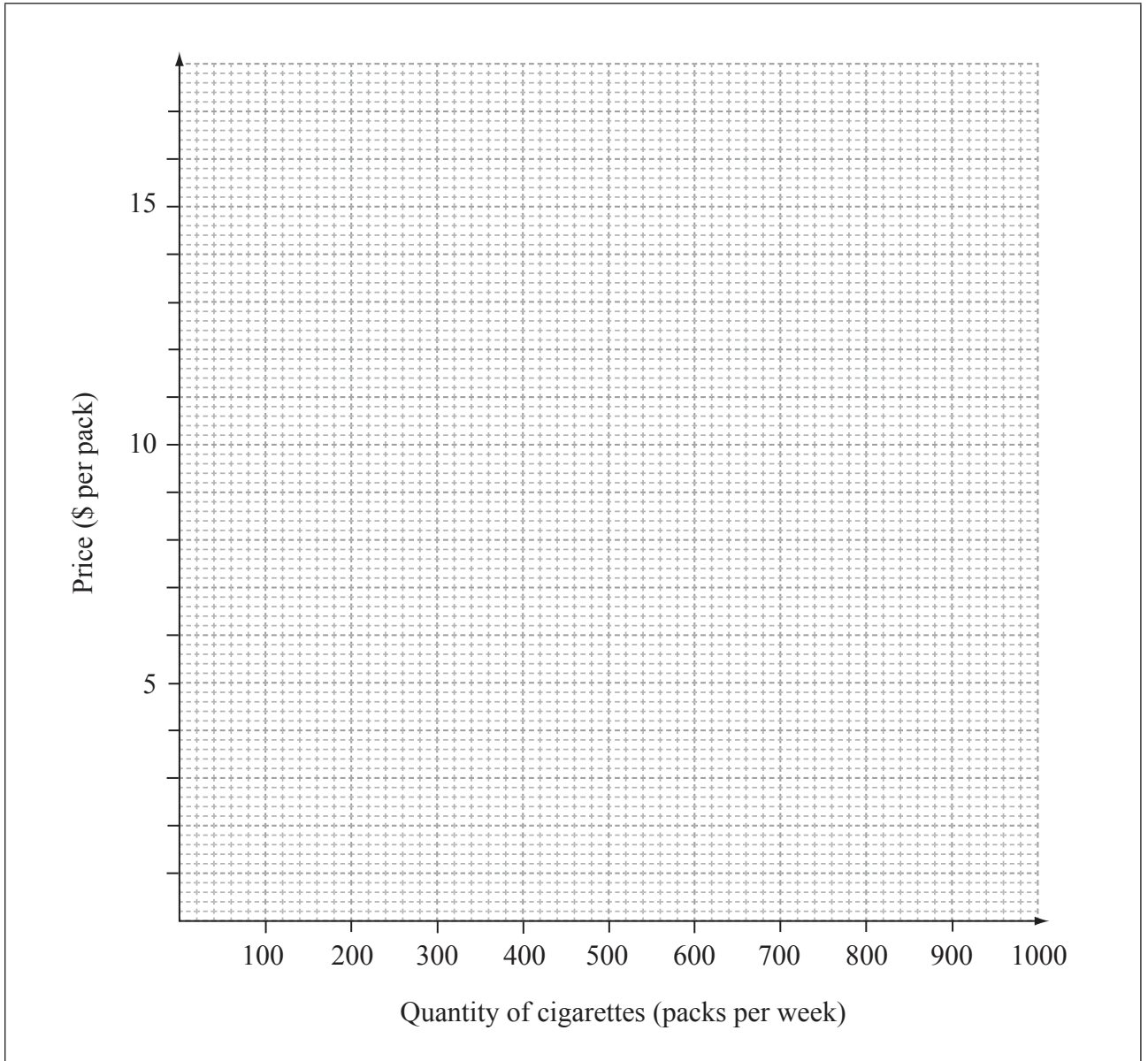
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(Question 1(d) continued)

(e)   Calculate the total weekly revenue earned by the government from the specific tax.   *[2]*

(f)   Calculate the change in weekly consumer spending on cigarettes in Burbia as a result of the tax.   *[3]*

(This question continues on the following page)

(Question 1 continued)

(g)   Explain why the value of price elasticity of demand is important for a government which is attempting to use taxation to discourage the consumption of a product.   *[4]*

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Answers written on this page
will not be marked.

2. In Ruritania the government measures changes in the cost of living by calculating a consumer price index (CPI), which measures changes in the cost of a typical basket of goods.

There are five items in the basket. The average prices of each item in 2011 and 2012 are given below, together with the weights used to calculate the index.

Prices are in dollars (\$). The average quantities of each item purchased per month by a Ruritanian family are used to determine the weights.

Data used to calculate the consumer price index in Ruritania, 2011 and 2012			
Good (Item)	**Average price in \$ (2011)**	**Average price in \$ (2012)**	**Average monthly quantity purchased by a Ruritanian family (= weight)**
A	\$2.00	\$2.20	20
B	\$10.00	\$12.00	15
C	\$1.20	\$1.50	10
D	\$1.60	\$3.20	5
E	\$5.00	\$5.00	10

(a) Calculate the monthly cost of the typical basket of goods in

   (i)   2011;   *[2]*

(This question continues on the following page)

(Question 2 continued)

    (ii)   2012. *[2]*

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           . . . .

(b)   From your results in (a), calculate the percentage change in the cost of living in Ruritania from 2011 to 2012. *[2]*

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Turn over

(Question 2 continued)

(c) (i) In neighbouring Urbania the cost, in yen (¥), of the typical basket of goods is shown below. Using 2009 as a base year (2009 = 100), construct the consumer price index (CPI) for Urbania from 2010 to 2012. Show your workings and enter your results in the table below. *[3]*

Year	Cost of the typical basket (¥)	Workings	consumer price index for Urbania (2009 = 100)
2009	1355	—	100
2010	1470		
2011	1705		
2012	1790		

(ii) From your answers to part (c)(i), calculate the rate of inflation in Urbania between 2010 and 2011. *[2]*

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(Question 2 continued)

    (iii)   With reference to the terms inflation and disinflation, describe the changes in the cost of living in Urbania during the period 2009 to 2012. *[2]*

(d)   Explain **two** problems which economists face when using a consumer price index (CPI) to measure the rate of inflation. *[4]*

(This question continues on the following page)

Turn over

(Question 2 continued)

(e)   The GDP of Urbania in 2009 was ¥60 billion, while in 2010 it was ¥65 billion.

The GDP deflator for the same years was

Year	GDP deflator
2009	100
2010	114

Calculate the percentage change in the real GDP of Urbania from 2009 to 2010.   *[4]*

(f)   When calculating inflation for the purpose of policy-making, economists might calculate a core/underlying rate of inflation. Explain why they do this.   *[4]*

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3. The information below represents the weekly cost and revenue conditions of a firm, measured in dollars ($).

Output (Q)	Price per unit	Total revenue (TR)	Average revenue (AR)	Marginal revenue (MR)	Total cost (TC)	Marginal cost (MC)
1	50				35	
2	45				45	
3	40				60	
4	35				80	
5	30				105	
6	25				135	
7	20				170	
8	15				210	

(a) Complete the table above by entering the total revenue (TR), average revenue (AR), marginal revenue (MR) and marginal cost (MC) information for all levels of output. *[4]*

(b) (i) Using your answers from part (a), identify the profit-maximizing level of output for the firm. You **must** outline the reason for your answer. *[3]*

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(Question 3 continued)

    (ii)   Calculate the economic profit/loss which the firm would make at this level of output. *[2]*

  (c)   (i)   Calculate the price elasticity of demand for the product when price falls from $25 to $20. *[2]*

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(Question 3 continued)

(ii) Using the table on page 16 to illustrate your answer, explain why the price elasticity of demand would change along the demand curve. *[4]*

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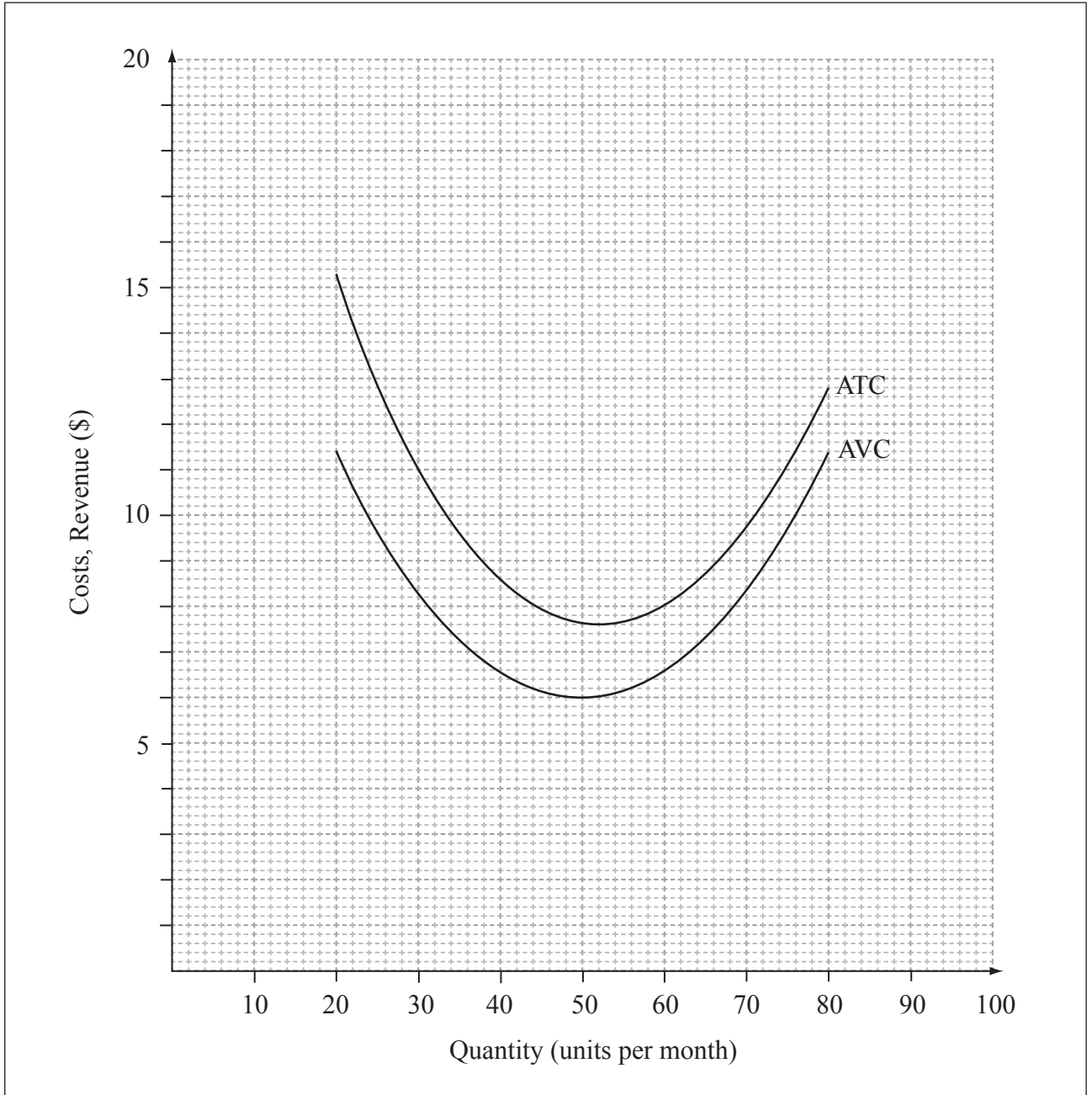1924

(Question 3 continued)

(d)   The graph below illustrates the average total cost and average variable cost information for a firm.

On the graph, identify the break-even price and the shut-down price for a perfectly competitive firm. *[2]*

(Question 3 continued)

(e)   From the graph in part (d)

(i)   calculate the total variable cost if output is 50 units per month;   *[2]*

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(ii)   calculate total cost if output is 30 units per month.   *[2]*

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(Question 3 continued)

(f)   With reference to the graph in part (d), explain the difference between the break-even price and the shut-down price. *[4]*

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