

MATRICULATION AND SECONDARY EDUCATION CERTIFICATE EXAMINATIONS BOARD
UNIVERSITY OF MALTA, MSIDA
MATRICULATION EXAMINATION
ADVANCED LEVEL
SEPTEMBER 2016

| | |
|----------------------|--------------------------------|
| SUBJECT: | ECONOMICS |
| PAPER NUMBER: | I |
| DATE: | 2 nd September 2016 |
| TIME: | 9.00 a.m. to 12.05 p.m. |

Answer FOUR questions. TWO from each Section. All questions carry equal marks. This paper carries 60% of the global mark.

Section A

1. a) Describe the main opportunity cost of the following decisions:
 - (i) attending a full-time course at the university instead of taking up a job;
 - (ii) watching a movie instead of studying for an exam;
 - (iii) riding the bus instead of driving your car. (6 marks)
- b) Consider a simplified economy that produces only two goods.
 - (i) Using a production possibility frontier, explain the trade-off faced by this economy.
 - (ii) Also, explain how the combination of goods produced may lead to feasible but not efficient production. (5 marks)
- c) Using supply and demand diagrams, for each of the following cases, explain the possible effects on demand, supply, or both as well as the effects on the equilibrium price and equilibrium quantity:
 - (i) As the price of gasoline fell in the United States during the 1990s, more people bought large cars.
 - (ii) As technological innovation has lowered the cost of recycling used paper, paper made from recycled stock is used more frequently.
 - (iii) When a local cable company offers cheaper on-demand films, local movie theatres have more unfilled seats. (6 marks)
- d) A price ceiling pushes the price of a good down. A price floor pushes the price of a good up. Therefore, is it correct to assume that the effects of a price floor are the opposite of the effects of a price ceiling? Explain your reasoning. (8 marks)

2.
 - a) Suppose the consumption bundle of a consumer consists of good A that sells at a price of €10.00 per unit and good B that sells at a price of €5 per unit. Use a diagram to illustrate the consumption possibilities assuming that the consumer's income is €20.00. (6 marks)
 - b) Explain why a rational consumer who has diminishing marginal utility of a good would not consume an additional unit when it generates negative marginal utility, even when that unit is free. (6 marks)
 - c) Newspaper vending machines are normally designed so that once you have paid for one paper, you could take more than one paper at a time. However, soft-drink vending machines, once you have paid for one drink, dispense only one drink at a time. Use the concept of marginal utility to explain this observation. (7 marks)
 - d) Explain why the marginal utility per euro spent must be the same for all goods and services in an optimal consumption bundle. What action would you recommend to a consumer whose marginal utility per euro is higher for one good than for another good? (6 marks)

3.
 - a) Some goods that were once considered luxuries, like a telephone, are now considered necessities. As a result, the demand curve for telephone services has become steeper over time. Use an elasticity concept to explain this observation. (6 marks)
 - b) As the price of margarine rises by 20 per cent, a manufacturer of baked goods increases its quantity of butter demanded by 5 per cent. Are butter and margarine substitutes or complements for this manufacturer? Explain your answer. (6 marks)
 - c) Identify whether demand is elastic or inelastic if producers in an industry find that they can increase their total revenues by coordinating a reduction in industry output. Explain your reasoning. (6 marks)
 - d) Explain why changes in demand have no effect on price when supply is perfectly elastic. (7 marks)

4.
 - a) Suppose a firm's quantity of output depends on the quantity of a variable input. Sketch a total product curve and explain the significance of its slope. (5 marks)
 - b) Sketch a curve that shows how total cost depends on the quantity of output. In which way is this curve similar to the total product curve? In which way are these two curves different? (6 marks)
 - c) Determine whether each of the following statements is true or false. Explain your reasoning:
 - (i) The short-run average total cost can never be less than the long-run average total cost.
 - (ii) The short-run average variable cost can never be less than the long-run average total cost.
 - (iii) In the long run, choosing a higher level of fixed cost shifts the long-run average total cost curve upward. (9 marks)
 - d) What determines the shape of the long-run average total cost curve? What explains the scale effects (increasing, decreasing or constant returns to scale) in production? (5 marks)

5. a) (i) Identify the factors that characterise a perfectly competitive market. Explain why a firm operating in a perfectly competitive market faces an infinitely elastic demand curve.
- (ii) What would you recommend to a firm that is considering entering a market in which a perfectly competitive industry is presently operating in long-run equilibrium? (8 marks)
- b) Assume a monopolistically competitive industry, composed of firms with U-shaped average total cost curves. Describe how the industry adjusts, in both the short and long run, in each of the following situations:
- (i) A technological change that increases fixed cost for every firm in the industry.
- (ii) A technological change that decreases marginal cost for every firm in the industry. (6 marks)
- c) 'In both the short run and in the long run, the typical firm in monopolistic competition and a monopolist each make a profit.' Is this statement correct? Explain your reasoning. (5 marks)
- d) Explain why the monopolist produces less and sells its output at a higher price than a perfectly competitive industry would. (6 marks)
6. a) Explain the effect of each of the following on the demand curve for labour, the market equilibrium wage rate and the quantity of labour employed, assuming other things remain equal:
- (i) Service industries, such as retailing and banking, experience an increase in demand. These industries use relatively more labour than non-service industries.
- (ii) Due to overfishing, there is a fall in the amount of fish caught per day by commercial fishing vessels; this decrease affects their demand for workers. (6 marks)
- b) Assume a new legislation limits the maximum number of hours a worker can work per week. Explain under what circumstances the worker is made:
- (i) worse off;
- (ii) equally well off;
- (iii) better off. (6 marks)
- c) Explain in terms of the income and substitution effects, how a fall in the wage rate can induce the worker to work more hours than before. (6 marks)
- d) Define the market labour supply curve. Explain three main factors other than the wage that alter workers' willingness to supply labour. (7 marks)

Please turn the page.

Section B

7. a) Explain the difference between GDP and GNP. In which case is the value of GNP lower than that of GDP? (6 marks)
- b) Discuss whether a high level of GDP and GDP growth necessarily imply a higher quality of life and standard of living for a nation's citizens? (9 marks)
- c) Distinguish between the three main pillars (or determinants) of long run economic growth. For each pillar provide one example of a policy that can be implemented to speed up the process of economic growth. (10 marks)
8. a) Explain the economic implications of the accelerator principle. (6 marks)
- b) What factors can cause the consumption function to shift upwards? (8 marks)
- c) Explain, within the context of the income multiplier model, how an increase in government spending would affect the equilibrium level of national income? Provide an explanation as to why the multiplier effect associated with a given level of government expenditure in Malta is likely to be relatively small when compared to the same expenditure in a larger country. (11 marks)
9. a) What factors influence the demand for money? (8 marks)
- b) What are the objectives and main instruments of monetary policy? (8 marks)
- c) Explain, using appropriate graphical analysis, how a central bank can utilise open market operations to raise the equilibrium interest rate in the economy. (9 marks)
10. a) Describe how a Consumer Price Index, such as the HICP or RPI, is constructed. Which of these two indicators would you assess in order to compare inflation in Malta with that of other EU countries? (7 marks)
- b) Utilize the AS-AD model to explain the impact of a supply side shock, such as an increase in the price of oil on the equilibrium level of output and price level of the economy. Subsequently, discuss one example of a supply-side policy that could be implemented by the government in order to offset the impact of such a supply-side shock. (10 marks)
- c) Discuss whether or not the negative relationship between unemployment and inflation implied by the Philips Curve always holds. (8 marks)
11. a) Distinguish between a government budget deficit and government debt. In what way would a high level of government debt influence the government budget? (8 marks)
- b) Explain three types of unemployment and provide an example for each. (7 marks)
- c) Explain what you understand by the terms contractionary and expansionary fiscal policy. Suppose the government wanted to reduce its budget deficit which of the two would it implement? Provide one example of such a policy and evaluate its implications on the economy via the application of the AS-AD model. (10 marks)

12. a) Explain, by making use of examples, the difference between the law of absolute advantage and the law of comparative advantage. (7 marks)
- b) Distinguish between a floating (flexible) exchange rate system and a fixed exchange rate system. Is there a limit to how long a country can sustain a balance of payments deficit under a fixed exchange rate system? (9 marks)
- c) Describe the main components of the balance of payments. What would the likely impact be on the current account of the Maltese economy in the eventuality of a depreciation of the Euro against the British Pound? (9 marks)

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MATRICULATION EXAMINATION

ADVANCED LEVEL

SEPTEMBER 2016

| | |
|----------------------|--------------------------------|
| SUBJECT: | ECONOMICS |
| PAPER NUMBER: | II |
| DATE: | 3 rd September 2016 |
| TIME: | 9.00 a.m. to 12.05 p.m. |

Answer **THREE** questions, at least **ONE** from Section A and **ONE** from Section B. All questions carry equal marks. This paper carries **40%** of the global mark.

Section A**Question 1**

The demand and supply for a home appliance is represented by the following equations:

$$Q_D = 110 - 12(P + t)$$

$$Q_S = 12 + 4P$$

Where:

Q_D : quantity demanded

P : price

t : tax per unit

Q_S : quantity supplied

- What is the equilibrium market price and the equilibrium quantity when no tax is imposed? (6 marks)
- Assuming that tax is set at €3 per unit:
 - What is the new equilibrium market price and new equilibrium quantity? (4 marks)
 - Based on your answer to (c), explain the effect of such a tax on price and quantity. (5 marks)
- The price elasticity of demand and supply determine who incurs the largest share of this new tax (i.e. consumers or producers). Discuss, using diagrams where appropriate. (10 marks)
- Mention and briefly explain four factors that influence demand and another four factors that affect supply. (8 marks)

Total: 33 marks

Question 2

The following table contains data which represents the cost and revenue situation of a firm.

| Output (units/week) | Price received (€) | Total cost |
|------------------------|--------------------|------------|
| 1 | 27 | 13.7 |
| 2 | 24 | 21.7 |
| 3 | 21 | 28.2 |
| 4 | 18 | 37.4 |
| 5 | 15 | 53.8 |
| 6 | 12 | 81.4 |

- Calculate marginal cost as output increases. (6 marks)
- Calculate marginal revenue as output increases. (6 marks)
- Plot the marginal cost and marginal revenue curves on the same graph. (2 marks)
- At what level of output would profits be maximized? Why? (6 marks)
- What is the amount of total profit and average profit at this level of output? Is average profit also maximized at this level of output? Why or why not? (7 marks)
- Would the firm be maximizing profits if it wants to maximize revenue? Why? (6 marks)

Total: 33 marks

Question 3

The following table provides information on the demand for grain at different price levels.

| Quantity demanded (kgs of grain) | Price (€) per kg |
|-------------------------------------|------------------|
| 0 | 22 |
| 1 | 20 |
| 2 | 18 |
| 3 | 16 |
| 4 | 14 |
| 5 | 12 |
| 6 | 10 |
| 7 | 8 |
| 8 | 6 |
| 9 | 4 |

- Plot the quantity demanded on the x-axis and price on the y-axis. (3 marks)
- Calculate the price elasticity of demand for when price changes from €6 to €4 per kg. (8 marks)
- Interpret the results obtained in (b), indicating whether the demand for grain is price-elastic, unitary price elastic or price-inelastic. (7 marks)
- Would it benefit the supplier to decrease the price of grain from €10 to €8 per kg? Why or why not? (5 marks)
- What factors other than price are likely to influence demand for grain? (5 marks)
- Discuss the impact on demand following the imposition of a customs duty (tax on importation) in a country which is a net importer of grain. (5 marks)

Total: 33 marks

Section B

Question 4

In its spring economic forecasts, the European Commission (EC) has forecast that Malta's real GDP growth will slow to 4.1% towards the end of 2016 (2015 actual: 6.3%), and grow by a moderate but robust 3.5% in 2017.

According to the EC, the large energy projects – namely the gas-fired power station – that flattered investment in 2015 are expected to reach completion, while the expansion in residential construction is expected to moderate. Household consumption is projected to decelerate but is expected to remain robust reflecting strong employment growth and rising real wages, which will be partly offset by the normalisation of the saving rate. These developments will be partially offset by stronger net exports, reflecting weaker demand for imports as well as a pick-up in demand from trading partners.

According to the EC, growth could be stronger if the reduction in the household saving rate, supported by expected gains in disposable income and population growth, carries over for the rest of the forecast horizons.

Reference: *European Commission (2016), European Spring Forecasts.*
http://ec.europa.eu/economy_finance/publications/eeip/pdf/ip025_en.pdf

- a. Why is the European Commission (EC) interested in developments in the Maltese economy? (5 marks)
- b. What are the components of the typical GDP formula? Define each component. (5 marks)
- c. Could you argue that in Malta investment levels are more volatile than consumption? (5 marks)
- d. What could be the reason/s behind EC's comment that residential construction is expected to moderate? (5 marks)
- e. Why is household consumption said to be affected by (i) employment growth; (ii) real wages, and (iii) the saving rate? (9 marks)
- f. Mention two factors which could lead to "stronger net exports". (4 marks)

Total: 33 marks

Question 5

According to a National Statistics Office (NSO), in February 2016 the annual rate of inflation as measured by the Retail Price Index (RPI) stood at 0.31%, down from 0.51% in January 2016.

The main upward impacts on annual inflation were recorded in the recreation and culture index, the Beverages and Tobacco Index and the Household Equipment and House Maintenance Costs Index. This was mainly due to higher prices of entertainment and cultural visits, cigarettes and household appliances respectively.

The largest downward impacts were brought about by the Transport and Communication Index, the Food Index and the Water, Electricity, Gas and Fuels Index. This was mainly due to a reduction in the prices of fuel, vegetables and gas respectively.

Reference: *National Statistics Office (2016), Retail Price Index: January 2016.*
https://nso.gov.mt/en/News_Releases/View_by_Unit/Unit_A5/Price_Statistics/Documents/2016/News2016_028.pdf

Please turn the page.

- a. Give two examples of how inflation is used in price setting in Malta. (5 marks)
- b. “Inflation should be ideally 0%”. Do you agree with this statement? Why or why not? (6 marks)
- c. What is the ECB’s long-term inflation target for Eurozone countries? (4 marks)
- d. Many economists talk about negative inflation (i.e. deflation) as a serious phenomenon which could have negative implications on an economy. Provide three reasons why this could be the case. (9 marks)
- e. As an economy booms, one would expect inflation to increase. What could explain the declining or quite low Maltese inflation in recent times, despite current economic growth? (5 marks)
- f. Mention another measure of inflation which is also calculated by the NSO, and explain one potential difference between the two indices. (4 marks)

Total: 33 marks

Question 6

The following equations present key economic relationships within a closed economy:

$$Y = C + I + G \quad \text{eq. (1)}$$

$$C = 30 + 0.8(Y - T) \quad \text{eq. (2)}$$

$$I = 30 \quad \text{eq. (3)}$$

$$G = 25 \quad \text{eq. (4)}$$

$$T = 30 \quad \text{eq. (5)}$$

Where:

Y = Income

C = Consumption

I = Investment

G = Government spending

T = income taxes

All variables are measured in millions of euro at constant prices.

- a. What is the meaning of the Marginal Propensity to Consume and the Marginal Propensity to Save, and what are the values taken by each in the equations above? (6 marks)
- b. Using the five equations above, find the equilibrium value of income (Y). (10 marks)
- c. What is the value of the income multiplier in this economy? Explain the economic meaning of the income multiplier. (6 marks)
- d. If we were to assume an open economy (with exports and imports), would the value of the income multiplier be the same? Why or why not? (5 marks)
- e. Discuss the implications of:
 - (i) a change in government expenditure from 25 to 30. (2 marks)
 - (ii) a change in investment from 30 to 25. (2 marks)
 - (iii) an increase in the income tax rate. (2 marks)

Total: 33 marks