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SUBJECT:	<b>Economics</b>
PAPER NUMBER:	I
DATE:	3 <sup>rd</sup> September 2018
TIME:	9:00 a.m. to 12:05 p.m.

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

**SECTION A**

**Answer TWO questions from this Section.**

1. a) Briefly answer the following questions:
- i. What is the relationship between scarcity and choice?
  - ii. What is the relationship between scarcity and opportunity cost?
  - iii. What does a straight-line production possibility frontier represent?
  - iv. What does a bowed-outward production possibility frontier represent? (8)
- b) Suppose that years of drought had raised the cost for farmers of raising cattle. At the same time, suppose that consumer tastes have been changing, leading to a decline in the demand for beef. Answer the following questions:
- i. Given this information, can one be certain whether the equilibrium quantity of beef will increase or decrease?
  - ii. Given this information, can one be certain whether the equilibrium price of beef will increase or decrease?
- Use a diagram of the demand and supply curves of beef to explain your answer. (10)
- c) Suppose that the government decides to impose a price floor on cartons of milk. Also, assume that the government does not purchase any surplus milk. On a diagram, indicate:
- i. the competitive equilibrium price,
  - ii. the price floor, and
  - iii. the quantity that is sold to consumers after the price floor has been imposed.

Will milk producers benefit from the price floor? Briefly, explain your answer. (7)

**(Total: 25 marks)**

***Questions continue on next page***

2. a) i. Define marginal utility.  
ii. When would a good's total utility and marginal utility be the same?  
iii. What is the Law of Diminishing Marginal Utility?  
iv. Why is Marginal Utility more useful than Total Utility in consumer decision making? (9)
- b) Briefly answer the following questions on the Marginal Utility Theory.  
i. Carla purchases two goods, X and Y, and the utility gained for the last unit purchased of each good is 4 utils and 6 utils, respectively. The prices of X and Y are €2 and €1 respectively. Is Carla maximizing (total) utility if she spends a total of €3 by buying one unit of each good? If not, how can more utility be obtained?  
ii. As a person consumes fewer units of a good, his total utility decreases. In such circumstances, will the consumer's Marginal Utility increase or decrease? Why? (8)
- c) A pizza chain recently offered the following special promotion: 'Buy one pizza at full price and get your next three pizzas for just €5.00 each.' Assume that the full price of a pizza is €10.00, your daily income is €40.00, and the price of all other goods is €1 per unit.  
i. Draw the budget constraint for pizzas and all other goods before the introduction of the special promotion. How would the special promotion change your budget constraint?  
ii. How is this special offer likely to alter your buying behaviour? (8)
- (Total: 25 marks)**
3. a) Briefly answer the following questions:  
i. List **THREE** main determinants of the price elasticity of demand for a product and briefly explain how each of these determinants affects the elasticity of demand.  
ii. If the demand for apples is inelastic, will an increase in the price of apples increase or decrease the seller's revenue? (10)
- b) Consider Firms A, B and C that each sell a different good. One study found that Firm A sells a good with an income elasticity of demand less than zero, Firm B sells a good with an income elasticity of demand greater than zero but less than one, and Firm C sells a good with an income elasticity of demand greater than one.  
i. In a recession when incomes fall, which firm is likely to see its sales decline the most?  
ii. Which firm is likely to see its sales increase the most? Briefly explain your answer. (9)
- c) Evaluate and state whether each of the following statements is true. Explain the reasoning for your answer.  
i. The elasticity of demand is the same as the slope of the demand curve.  
ii. The cross-price elasticity for complementary goods is positive.  
iii. The supply of houses is more inelastic in the short-run than in the long-run. (6)
- (Total: 25 marks)**

4. a) Sketch a production function that exhibits diminishing marginal product of labour. Draw the associated total cost curve. Explain the shapes of the **TWO** curves. (9)
- b) i. Explain why the average total cost curve and the average variable cost curve move closer together as output expands.  
 ii. Suppose a manufacturer estimates that the average total cost and the marginal cost at the current level of output are both equal to €7.81. Explain the relationship between these marginal cost and average total cost figures.  
 iii. What is the difference between the Law of Diminishing Marginal Returns and Diseconomies of Scale? (12)
- c) What effect, if at all, might a decrease in the demand for televisions have on the short-run average total cost curve for this product? Explain your reasoning. (4)  
**(Total: 25 marks)**
5. a) These questions concern a Perfectly Competitive Market Structure.  
 i. Why is a perfectly competitive firm a price taker?  
 ii. The horizontal demand curve for the perfectly competitive firm signifies that it cannot sell any of its product for a price higher than the market equilibrium price. Why not?  
 iii. Would firms in a perfectly competitive market want to produce more output if the market were in long-run equilibrium? (9)
- b) i. Why does the monopolist's demand curve lie above its marginal revenue curve?  
 ii. Is a monopolist guaranteed to earn profits?  
 iii. Is an oligopolistic firm a price taker or a price maker? Explain your answer. (9)
- c) Define the term 'economies of scale'. Explain how economies of scale may act as a barrier to entry. (7)  
**(Total: 25 marks)**
6. a) i. The demand for labour is a derived demand. What could cause a perfectly competitive firm's demand curve for labour to shift rightward?  
 ii. Suppose the elasticity of demand for labour is 3. What does this mean?  
 iii. Why are wage rates higher in one competitive labour market than in another? In short, why do wage rates differ? (12)
- b) The following questions concern the Supply of Labour:  
 i. Explain **TWO** main factors that affect labour supply in a single competitive labour market.  
 ii. At which point on the labour supply curve is the substitution effect equal to the income effect? (8)
- c) Suppose a boom in books sold on the internet raises the demand for authors of such books. How would this affect the interest (demand) in these authors and the equilibrium compensation paid to them? What long-run effect, if at all, would this have on the labour market? (5)  
**(Total: 25 marks)**

## SECTION B

Answer **TWO** questions from this Section.

7. a) Define GDP and discuss **FOUR** problems of using the GDP measure to assess the level of welfare within a country. (9)
- b) Describe the **THREE** different methods which can be utilized to measure GDP within a national accounting framework. (6)
- c) Describe **THREE** determinants of long run economic growth and for each determinant provide an example of a policy that can be implemented by policy makers in order to accelerate the process of long run economic growth. (10)
- (Total: 25 marks)**
8. a) Explain the relationship between household disposable income and aggregate household consumption expenditure as put forward by the Keynesian consumption function and discuss **ONE** other determinant of consumption. (9)
- b) Discuss **THREE** determinants of aggregate investment behaviour. (7)
- c) Explain, within the context of the Keynesian income multiplier model, how an increase in investment would affect the equilibrium level of national income in the economy. (9)
- (Total: 25 marks)**
9. a) What are the **FOUR** main functions of money? (8)
- b) Describe the tools that a Central Bank has at its disposal to undertake monetary policy. (8)
- c) Explain, with the aid of the appropriate diagram, how a contraction in the money supply by the Central Bank would impact the equilibrium interest rate in the economy. (9)
- (Total: 25 marks)**
10. a) Describe how a Consumer Price Index, such as the HICP or RPI is constructed. Which of these two measures of inflation would you assess if you wanted to compare the inflation rate in Malta with that of other EU countries? (7)
- b) Explain, utilizing the aggregate supply and aggregate demand model, the impact of an increase in the price of oil on the aggregate level of output and price level in the economy. (9)
- c) Distinguish between the short run and the long run Philips curve. (9)
- (Total: 25 marks)**

11. a) Distinguish between Frictional, Structural and Seasonal unemployment and provide an example of a policy that can be implemented by policy makers to alleviate each type. (9)
- b) Explain the difference between a government budget deficit and national government debt. What impact, if any, would rising national debt have on the government budget? (8)
- c) What is the government's main motive for implementing supply-side policies? Provide **TWO** examples of such policies and discuss whether the implementation of supply side policies can cause any undesired effects. (8)
- (Total: 25 marks)**
12. a) Explain, by means of an appropriate example, how it is possible for two countries to mutually benefit from trade based on the law of comparative advantage. (8)
- b) Distinguish between tariffs, quotas and export subsidies. Provide one motive which could explain why a government may want to implement such policies. (8)
- c) Describe the components of the balance of payments. Explain the likely impact on the balance of trade of the Maltese Economy if the British Pound had to appreciate against the Euro. (9)
- (Total: 25 marks)**




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SUBJECT:	<b>Economics</b>
PAPER NUMBER:	II
DATE:	4 <sup>th</sup> September 2018
TIME:	9:00 a.m. to 12:05 p.m.

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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**

1. The demand for a new electric car is represented by the following equation:

$$Q_D = 49000 - 2 P_O + 3 P_S + 0.5 Y$$

where:

$Q_D$  is quantity demanded;  
 $P_O$  is the average price of the good itself;  
 $P_S$  is the average price of a substitute good;  
 $Y$  is personal income.

- a. Plot the demand function by assuming that  $P_S$  is equal to €12,000,  $Y$  is equal to €20,000 and the price  $P_O$  takes a value from €10,000 up to €40,000. Does the demand function conform with the law of demand? Explain your answer. (6)
- b. Find the own price elasticity of demand when  $P_O$  is equal to (i) €10,000 and (ii) €40,000. Comment about how price elasticity of demand changes with the price level. (6)

The supply equation for the same good is:

$$Q_S = 5000 + 1.5P_O + 2 T$$

where:

$Q_S$  is quantity supplied;  
 $P_O$  is the average price of the good itself;  
 $T$  is an index of technology.

- c. On the same graph paper where you have plotted the demand function, plot the supply function by assuming that  $T$  takes the value of 1250 and the price  $P_O$  takes a value from €10,000 up to €40,000.
- Find the equilibrium price and quantity.
  - Mention and discuss **FOUR** factors that determine the supply of new electric cars. (10)
- d. Suppose that in order to help producers to supply more electric cars, the government introduces a subsidy of €12,500. Find the new equilibrium price and quantity. (4)
- e. Instead of a subsidy, the government could instead give tax rebates to consumers who purchase an electric car. Discuss the market effects of such a policy measure and compare and contrast it to a case where the government gives a subsidy to the producers of electric cars. (7)

**(Total: 33 marks)**

2. A firm printing economics textbooks faces the following average cost and average revenue table:

Output (Economics Textbooks)	Average Cost (€)	Average Revenue (€)
1	8.96	36.00
2	8.40	35.00
3	8.26	34.00
4	8.40	33.00
5	8.82	32.00
6	9.52	31.00
7	10.50	30.00
8	11.94	29.00
9	13.58	28.00
10	15.54	27.00

- a. Construct a table to show the Total Cost (TC), Marginal Cost (MC), Total Revenue (TR) and Marginal revenue (MR) at each level of output. (8)
- b. Plot the Average Cost (AC) and the Average Revenue (AR) and the Marginal Revenue (MR) and the Marginal Cost (MC) figures in separate graphs and find the profit-maximising level of output. (8)
- c. Is the profit-maximising level of output the same as the revenue-maximising level of output? (4)
- d. Why is the gap between Average Revenue (AR) and Marginal Revenue (MR) increasing as output increases? (5)
- e. Briefly explain what would happen if:
  - i. the firm invests in new technology which increases productivity;
  - ii. the price of one of the factors of production increases. (8)

**(Total: 33 marks)**

3. A start-up firm is considering the number of workers it needs to employ to produce life-jackets. It faces the following costs and output figures:

Number of Workers	Total Labour Costs in Euro per hour per employee	Total Output per hour
1	12	1
2	13	9
3	14	16
4	15	22
5	16	27
6	17	31
7	18	34
8	19	36

Assume that each life-jacket sells at €8 per unit and that each employee works a total of 8 hours per day.

- Construct a table to show the Total Cost of Labour per day ( $TC_L$ ), Marginal Cost of Labour ( $MC_L$ ), the Total Revenue Product per day ( $TRP_L$ ), and the Marginal Revenue Product ( $MRP_L$ ). (10)
- How many workers will the firm employ in order to maximize profits? Explain your answer. (4)
- What will its total hourly wage bill be at this level of employment? How much hourly revenue will it earn at this level of employment? What is the profit per unit at this level of output? Explain your answer. (6)

Suppose that in order to help incumbent firms, the Government introduces a business-aid policy measure whereby it agrees to pay 10% of the labour costs for the first three employees, 6.5% of the labour costs for the next three employees and 5.3% of the labour costs of the remaining employees if the firm invests in new health and safety equipment which involves a variable cost of €0.5 per employee (i.e. the policy measure also covers the health and safety costs).

- Do you think that it makes sense for the firm to apply for the business-aid policy measure given the firm's size? Discuss your answer using calculations. (8)
- Assuming that the firm applies for the business-aid measure, how many workers would the firm employ? And what would the firm's profit be? (5)

**(Total: 33 marks)**



**SECTION B**

4. The Central Bank of Malta publishes a wide range of monetary statistics and indicators, including broad measures of money supply, its components and its counterpart assets. The table below highlights the monetary aggregates according to the May 2018 release:

<b>MONETARY AGGREGATES (€ million)</b>	<b>Apr-18</b>	<b>Apr-17</b>
Currency issued	989.1	941.4
Overnight deposits	14,084.0	13,162.5
Deposits redeemable at notice up to 3 months	57.0	94.1
Deposits with agreed maturity up to 2 years	3,577.1	4,116.9
Marketable instruments	724.8	867.9

Reference: Central Bank of Malta (May, 2018). The Contribution of Resident MFIs to Euro Area Monetary Aggregates  
<https://www.centralbankmalta.org/>

- a. Work out the value of:
  - i. Narrow Money (M1);
  - ii. Intermediate Money (M2);
  - iii. Broad Money (M3). (9)
- b. What are marketable instruments? Give **TWO** examples. (6)
- c. On 1<sup>st</sup> January 2008, Malta officially adopted the euro. The Central Bank of Malta thus became a member of the Eurosystem which meant that it no longer had 'autonomous' monetary policy. Discuss **SIX** functions of the Central Bank of Malta and their importance for the Maltese economy. (6)
- d. The ECB has a target rate of 2% inflation, but individual members of the euro area have persistently recorded different inflation rates. What are the implications of these differentials within the framework of a common monetary policy? (6)
- e. Suppose that the ECB had to increase interest rates in the coming months. What possible economic effects could this have on the European economy? (6)

**(Total: 33 marks)**

5. According to the Medium-Term Fiscal Strategy for Malta submitted by the Ministry for Finance to the European Commission at the end of April 2018, in 2017, the fiscal surplus reached 3.9 per cent of GDP. Concomitantly, the public debt ratio fell below the 60 per cent target to 50.8 per cent of GDP in 2017. The fiscal strategy presented is expected to reduce the debt burden even further to 36 per cent of GDP by 2021. Government considers the fiscal development that took place over the last four years as an important achievement to provide the necessary fiscal space to allow fiscal policy to act in a countercyclical manner. Furthermore, the budget surplus allows more room for manoeuvre to address other structural challenges such as infrastructural bottlenecks and further investments in human capital and technology, thus further strengthening potential growth and supporting the process of convergence to higher living standards. In this context, it is opportune to note that in 2016, GDP per capita in Purchasing Power Standards had already reached 94 per cent of the EU average, up from 84 per cent in 2010. At the same time Government is conscious of persistent challenges in the external environment which support the need for continued prudence in the fiscal targets and the creation of additional buffers. The budget balance is targeted to reach 1.1 per cent of GDP in 2018 and to remain at 0.9 per cent of GDP in both 2019 and 2020 before rising further to 1.6 per cent of GDP in 2021. Such targets are themselves based on prudent fiscal assumptions which create an extra buffer in these projections.

Reference: *Ministry for Finance of Malta (2018). Medium-Term Fiscal Strategy for Malta: Update of Stability Programme 2018 – 2021.*  
<https://ec.europa.eu/>

- a. Why does Malta have to report on government deficit and debt levels to the European Commission? Are there any fiscal rules which Malta must adhere to? Explain in detail. (7)
- b. Discuss the relationship between fiscal surplus and public debt. Is fiscal surplus the only way to reduce public debt? (8)
- c. "Government considers the fiscal development that took place over the last four years as an important achievement to provide the necessary fiscal space to allow fiscal policy to act in a countercyclical manner." Discuss. (6)
- d. "Furthermore, the budget surplus allows more room for manoeuvre to address other structural challenges such as infrastructural bottlenecks and further investments in human capital and technology, thus further strengthening potential growth..." What do you understand by potential growth? Mention **FOUR** different types of investments that the government is undertaking to improve technology, human capital and address infrastructural bottlenecks. (6)
- e. "... Government is conscious of persistent challenges in the external environment which support the need for continued prudence in the fiscal targets and the creation of additional buffers." Highlight **THREE** important challenges in the external environment at the current juncture. (6)

**(Total: 33 marks)**

6. Consider an open economy whose economic relationships are represented by the following equations:

GDP identity:	$Y = C + I + G + X - M$	Equation 1
Consumption function:	$C = a + b (Y^p - T)$	Equation 2
Tax equation:	$T = t Y^p$	Equation 3
Imports equation:	$M = m Y$	Equation 4
Corporate retained income:	$R = r Y$	Equation 5
Personal income equation:	$Y^p = (1 - r) Y$	Equation 6

Where:

- Y = National Income
- C = Consumption Expenditure
- I = Investment Expenditure
- G = Government Final Consumption Expenditure
- X = Exports
- M = Imports
- a = exogenous consumption expenditure
- b = marginal propensity to consume
- $Y^p$  = personal income
- T = income tax
- t = the marginal tax rate
- m = marginal propensity to import with regards to Y
- R = retained corporate income
- r = marginal retained income out of GDP

All variables are measured in millions of euro.

- a. Determine which of the above are final expenditures and which are leakages. (8)
- b. Using the above equations, find an expression for the equilibrium level of income (Y). (8)
- c. Suppose that  $b = 0.8$ ,  $t = 0.2$ ,  $m = 0.67$  and  $r = 0.1$ . What is the value of the income multiplier in this economy? Explain the economic meaning of income multiplier. (6)
- d. If we assume that there is no corporate sector, no government and the economy is closed, what is the value of the multiplier coefficient? (6)
- e. Discuss the implications of a change in the marginal propensity to consume from 0.8 to 0.9 on the marginal propensity to save and on GDP. (5)

**(Total: 33 marks)**