MATRICULATION AND SECONDARY EDUCATION CERTIFICATE EXAMINATIONS BOARD
UNIVERSITY OF MALTA, MSIDA

MATRICULATION EXAMINATION
ADVANCED LEVEL
MAY 2017

SUBJECT:	ECONOMICS
PAPER NUMBER:	I
DATE:	27th April 2017
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

Answer TWO questions from this section.

1. a)   Draw a production possibility frontier, clearly marking the regions of inefficient production, efficient production and unattainable production.
    i)   How does the production possibility frontier show that every choice involves a trade-off?
    ii)   How does the slope of the production possibility frontier represent the opportunity cost?
    iii) Why is the frontier concave to the origin? (10)

    b)   For the two scenarios below, use supply and demand diagrams to illustrate the effect of the given shocks on the equilibrium price and quantity in the specified market.
    i)   In Autumn of 2005, Hurricanes Katrina and Rita damaged several oil wells in the Gulf of Mexico and shut down a number of gulf coast oil refineries. Explain how this disruption of oil production caused by these hurricanes affected the market for gasoline.
    ii)   As the world experienced a number of hijacked aeroplanes, people became apprehensive about flying on aeroplanes because they were concerned about the possibility of more hijackings in the future. Explain how the apprehension of potential airline travellers affected the market for airline tickets and the market for passenger train travel. (10)

    c)   Suppose the government imposes a price ceiling on bottled water. Show the effect on the bottled water market. (5)
    (Total: 25 marks)

2. a)   Why is it that diamonds, which have no intrinsic value, are expensive to buy, whereas water, which is a necessity, is so inexpensive? Use a diagram to illustrate your answer. (5)

    b)   Suppose inflation increases the prices of all goods by 20 per cent. Also, assume that Carla's income increases from €50,000 to €55,000. Explain your answer to the following two questions:
    i)   Has Carla's budget line become steeper, less steep, or remains equally steep?
    ii)   Has Carla's budget line shifted outward, inward, or not at all? (10)

Question continues on next page.

    c)   The following questions concern the Marginal Utility Theory.

        i)   Maria spends all her income on two goods: food and shelter. The price of food is €5 per kg and the price of shelter is €10 per square meter. At her current consumption levels, her marginal utilities for the two goods are 20 utils per kg and 30 utils per square meter, respectively. Is Maria maximizing her utility? If not, how should she reallocate her spending?

        ii)   'In order to maximize utility, an individual should consume the bundle that gives him the maximum marginal utility per euro for each good'. Is this statement correct? Explain your answer. (10)

(Total: 25 marks)

3.   a)   Suppose the elasticities for petrol are as follows:

Price elasticity of Demand: -0.39
Income elasticity: 1.2
Price elasticity of Supply: 0.7

        i)   Do there appear to be close substitutes for petrol?
        ii)   Does petrol appear to be a luxury or a necessity?
        iii)   Do firms appear to have excess capacity in the petrol industry? (9)

    b)   Suppose that when the price of lettuce doubles, one consumer reacts by consuming significantly less lettuce as he considers lettuce to be not that important. On the other hand, suppose that if the price of bread doubles his consumption of bread is only marginally affected.

        i)   For this consumer, which product (lettuce or bread) has the higher price elasticity of demand? Briefly explain.
        ii)   Is the cross-price elasticity of demand between lettuce and other green vegetables positive or negative for this consumer? Briefly explain. (10)

    c)   Suppose that, in an attempt to induce citizens to conserve energy, the government enacted regulations requiring that all air conditioners be more efficient in their use of electricity. After this regulation was implemented, government officials were then surprised to discover that people used even more electricity than before. Using the concept of price elasticity, explain how this increase might have occurred. (6)

(Total: 25 marks)

4.   a)   Evaluate and state whether each of the following statements is true. Explain the reasoning for your answer.

        i)   A decreasing marginal product tells us that marginal cost must be rising.
        ii)   An increase in fixed cost increases marginal cost.
        iii)   When marginal cost is above average total cost, average total cost must be falling. (9)

    b)   Sketch the Average Fixed Cost, Average Variable Cost, Average Total Cost and Marginal Cost curves and identify the capacity of the firm and its shut-down point assuming the firm is operating in the short-run. (6)

    c)   Are the concepts of diseconomies of scale and diminishing returns related? Why would a large automobile factory have lower average costs than a small company? (10)

(Total: 25 marks)

5. a) Suppose firms operating in a perfectly competitive industry face an increase in the cost of capital. What would be the effect of this increase on the price and output in the short run? Will this have an effect on the number of firms in the long run? (10)

   b) Suppose that a coffee growers' monopoly is broken into several smaller competing firms. How would you expect the coffee-growing industry to change its output and price? Illustrate your answer by means of a diagram. (10)

   c) Monopolistic competition is an efficient form of organisation as there are no profits above the normal in the long-run. Is this statement correct? Explain why. (5)
   (Total: 25 marks)

6. a) State whether each of the following events will result in a movement along or a shift of the market demand curve for labour in electronics factories in China. Explain your answer.
   i) The wage rate declines.
   ii) The price of televisions declines.
   iii) Several firms exit the television market in China.
   iv) Chinese high schools introduce new vocational courses in assembling electronic products. (12)

   b) Why is the supply curve of labour for any specific occupation likely to be upward-sloping? If the labour supply curve shifts to the left and the labour demand curve remains unchanged, what will happen to the equilibrium wage and the equilibrium level of employment? Illustrate your answer with a graph. (8)

   c) Suppose the minimum wage law mandates that employers must pay their employees at least €5.50 per hour, but some low-skilled workers would not earn this much were it not for the minimum wage law. With the help of a diagram, illustrate the impact of the minimum wage law on the market for low-skilled workers. (5)
   (Total: 25 marks)

SECTION B

Answer TWO questions from this section.

7. a) How and why is GDP measured in real terms? (7)

   b) Is the measure of GDP a good indicator of the overall level of welfare within a country? What are its main limitations? (10)

   c) Describe the main costs generally associated with the process of long run economic growth. (8)
   (Total: 25 marks)

8. a) What factors, other than disposable income, are likely to affect the behaviour of aggregate household consumption expenditure? (8)

   b) What are the primary determinants of the level of investment in an economy according to the accelerator principle? (7)

Question continues on next page.

c) Explain, within the context of the income multiplier model, how an increase in investment would affect the equilibrium level of national income. Provide **ONE** example of a factor that could cause an increase in the level of investment spending. (10)

(Total: 25 marks)

9. a) What are the main functions of money? (7)

b) Explain the process of credit creation once we account for the presence of commercial banks. What would the impact on the overall supply of money be in the eventuality of an increase in the reserve ratio? (9)

c) Discuss, and illustrate by means of the appropriate diagram, the effect of expansionary open market operations by the central bank on the equilibrium interest rate in the economy. (9)

(Total: 25 marks)

10. a) Distinguish between demand pull and cost push inflation. The inflationary effect caused by an increase in the price of utility tariffs would fall under which of these two causes of inflation? (8)

b) Explain **THREE** types of unemployment and provide **ONE** example of a policy that can be used to alleviate each type. (9)

c) Distinguish between the short run and long run relationship which exists between inflation and unemployment. (8)

(Total: 25 marks)

11. a) Why is an increase in the national debt considered undesirable? What effect would such an increase have on the budget deficit? (9)

b) Explain, by means of the appropriate diagram, how the implementation of a contractionary fiscal policy aimed at lowering the budget deficit may generate a deflationary gap. Provide an example of a contractionary fiscal policy that could be implemented to reduce the budget deficit. (9)

c) What is the government's main motive for implementing supply-side policies? Provide **TWO** examples of such policies. Can such policies also have demand side effects? (7)

(Total: 25 marks)

12. a) Explain the difference between a fixed exchange rate system and a flexible (or floating) exchange rate system. (7)

b) Describe the main components of the balance of payments. What must occur for the balance of payments to be in deficit? (8)

c) What would the expected impact on the balance of trade of the Maltese economy and the Euro/Pound exchange rate be in the eventuality of the United Kingdom experiencing a period of significant inflation? Explain your answer within the context of the demand and supply of Euro under a floating exchange rate system. (10)

(Total: 25 marks)

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MATRICULATION EXAMINATION
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MAY 2017

SUBJECT:	ECONOMICS
PAPER NUMBER:	II
DATE:	28th April 2017
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

1. The demand for an average second-hand car is represented by the following equation:

    $Q_D = 45000 - 3\,P_O + 2\,P_S + 0.5\,Y$

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 average personal income.

a) Sketch the demand function by using (i) a tabular and (ii) a graphical approach assuming that P_S is equal to €7,500, Y is equal to €10,000 and the price P_O takes a value from €4,000 up to €12,000. Does the demand function conform with the law of demand? Explain your answer. (5)

b) By assuming that P_S is equal to €7,500 and Y is equal to €10,000, find the elasticity of demand with respect to price P_0 when P_O is equal to (i) €8,000 and (ii) €12,000. Comment about how price elasticity of demand changes with the price level. (6)

c) Assuming that P_O is equal to €10,000, compute the income elasticity of demand when assuming a 50% increase in income. Why is knowledge of the income-elasticity of demand relevant for a car retailer in choosing the location of his/her establishment? (5)

Question continues on next page.

The supply equation for the same good is:

$Q_S = 1800 + 6P_O + 2\,T$

where:

Q_S is quantity supplied;

P_O is the average price of the good itself;

T is an index of technology.

d)   On the same graph paper where you have sketched the demand function, sketch the supply function by using a tabular and a graphical approach assuming that T takes the value of 100 and the price P_O takes a value from €4,000 up to €12,000.
   i)   Find the equilibrium price and quantity.
   ii)   Mention and discuss **FOUR** factors that determine the supply of second-hand cars.   (9)

e)   Suppose that the government had to introduce a lump-sum tax of €9,000 on second-hand cars to stimulate demand for more environmentally-friendly vehicles.
   (i)   Find the new equilibrium price and quantity.
   (ii)   What could determine the tax incidence (or tax burden) between the seller and the buyer? Illustrate on whom the tax incidence falls in the case of an inelastic supply and an elastic demand.   (8)
(Total: 33 marks)

2.   The following table shows the relationship between the use of labour and capital to produce output per week in a certain factory.

Output Unit	Labour Unit	Capital Unit
150	2	20
240	4	20
527	6	20
900	8	20
1313	10	20
1728	12	20
2058	14	20
2304	16	20
2493	18	20
2650	20	20
2767	22	20
2850	24	20
2925	26	20

The price of labour is €350 per unit while the price of capital is €300 per unit.

a)   Construct a table for the average and marginal cost curves and plot them.   (7)

b)   Construct a table for the total cost, variable cost and fixed cost curves and plot them.   (9)

c) What do you understand by the law of diminishing marginal product? Does the above data conform to the law of diminishing marginal product? Explain your answer using numerical illustrations. (6)

Assume that this factory operates in a perfectly competitive market where the price set by the market is €6.00 per unit of output.

d) What is the profit-maximising level of output? What would the profit be in this case? Is this outcome likely to be maintained in the long-run? Explain your answer. (Hint: round to 1 decimal place) (8)

e) What happens if this factory manages to obtain a patent on its product in the short-run? Explain your answer. (3)

(Total: 33 marks)

3. A newly set-up firm is considering the number of workers it needs to employ to run the business. The firm's decisions rest on the following output and cost figures:

Number of Workers	Total Labour Costs in Euro per hour per employee	Total Output per hour
1	2	1
2	3	9
3	4	16
4	5	22
5	6	27
6	7	31
7	8	34
8	9	36

Assume that output sells at €3 per unit and that each employee works a total of 8 hours per day.

a) 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)

b) How many workers will the firm employ in order to maximize profits? What will its total wage bill be at this level of employment? How much revenue will the firm earn at this level of employment? (9)

Question continues on next page.

Imagine that the firm is now considering the production of a product which requires substantial investment in new protective clothing for employees, improved first-aid facilities, and life insurance policies. Consequently, the firm faces the following additional variable costs per employee in Euro:

Number of Workers	Variable costs per employee
1	55
2	50
3	48
4	45
5	44
6	44
7	43
8	43

c)   If the firm decides to go forward with this production line, calculate the number of workers the firm will employ in order to maximize profits under this scenario. How much profit will it make at the point of equilibrium?   (8)

d)   Malta is currently facing historically low unemployment rates. Despite this, wage appreciation has remained relatively moderate. Briefly discuss **ONE** potential factor that is hindering rapid acceleration in wage appreciation. Illustrate your explanation through the use of a diagram.   (6)
                                                                                                                                          (Total: 33 marks)

SECTION B

4.   In its autumn forecasts published in the Draft Budgetary Plan (October, 2016), the Ministry for Finance forecasted that Malta's real GDP growth will slow down to 3.9 per cent in 2016 following the 6.2% growth rate recorded in 2015, and to slow down further to 3.5% in real terms in 2017. Real GDP growth in 2016 and 2017 is expected to be primarily driven by the domestic side of the economy, as the external side of the economy is expected to contribute marginally positively in 2016 but to act as a drag on Malta's growth in 2017.

Despite the expected slowdown in economic growth, headcount employment is expected to increase by 3.3 per cent in 2016, and 2.7 per cent in 2017. Furthermore, the unemployment rate (based on the Harmonised definition) is expected to settle at 4.9 per cent in 2016, increasing only marginally by 0.1 percentage points in 2017. This unemployment rate is well below the expected EU average rate and reflects efforts in ongoing labour market policies.

Inflationary pressures are expected to remain subdued for the remaining months and to stand at 1.0 per cent in 2016. In 2017, inflation is expected to increase to 1.5 per cent as oil prices are expected to marginally increase relative to 2016, while the USD/Euro exchange rate is expected to marginally decrease. The latter is also the result of marginally higher expected inflation in services when compared to 2016.

Main Macroeconomic Indicators

Table 2.1

	2013	2014	2015	2016[1]	2017
GDP growth at current market prices (% change)	6.4	5.5	8.6	5.7	5.8
GDP growth at chain linked volumes (2010) prices (% change)	4.5	3.5	6.2	3.9	3.5
Expenditure Components of GDP					
at chain linked volumes (2010) prices (% change)					
Private final consumption expenditure[2]	2.3	2.3	5.5	3.5	3.2
General government final consumption					
expenditure	0.1	7.0	4.6	2.8	5.9
Gross fixed capital formation	-1.4	8.7	43.1	2.2	10.8
Exports of goods and services	0.1	-0.2	2.1	1.9	2.8
Imports of goods and services	-0.9	-0.4	5.6	1.9	4.2
Contribution to GDP growth (in percentage points):					
Domestic Demand	1.1	4.1	11.7	3.0	5.4
Inventories	1.7	-0.9	-0.8	0.8	0.0
Net Exports	1.7	0.2	-4.7	0.1	-2.0
Inflation rate (%)	1.0	0.8	1.2	1.0	1.5
Employment growth (National Accounts definition) (%)	3.7	5.1	3.4	3.3	2.7
Unemployment rate (Harmonised definition) (%)	6.4	5.8	5.4	4.9	5.0

(1) Forecasts from 2016 onwards

(2) Includes NPISH final consumption expenditure

Reference: Ministry for Finance of Malta (October, 2016), Draft Budgetary Plan
http://ec.europa.eu/economy_finance/economic_governance/sgp/pdf/dbp/2016/2016-10-18_mt_dbp_en.pdf

a) The Ministry for Finance of Malta publishes forecasts of the Maltese economy on a bi-annual basis. Why is it important for the Maltese Government to regularly monitor and assess both current and expected developments in the Maltese economy? (4)

b) In 2016, employment growth was expected to remain relatively unchanged from that recorded in 2015. Despite this, private final consumption expenditure was expected to decelerate from a growth rate of 5.5 per cent in 2015 to 3.5 per cent in 2016. What other factors could explain this deceleration? (6)

c) For 2017, the Ministry for Finance is expecting an inflation rate of 1.5 per cent as oil prices are expected to increase while the USD/Euro exchange rate is expected to marginally decrease. How do these two components affect the inflation rate of Malta? (6)

d) In 2017, the external side of the economy is expected to act as a drag on economic growth. Why is this the case? What would you expect to happen to GDP growth if:
    i.   euro appreciates relative to the Dollar and the Sterling?
    ii. investment increases due to higher investment in machinery and equipment?
    iii. economic activity in Malta's main trading partners increases beyond expectations? (12)

e)   With Malta being a member in the Eurozone, the ECB is responsible for conducting monetary policy for the Euro Area. With the European economy still recovering from the financial and the sovereign crisis, interest rates are currently at very low levels in an attempt to stimulate growth. Despite this, Malta has managed to wither Europe's fragile recovery and record growth rates which highly outpace growth in Europe. Suppose that interest rates will remain low over the coming months, what potential effects could this have on the Maltese economy?   (5)

(Total: 33 marks)

5.   According to the National Statistics Office (NSO), in December 2016, the annual rate of inflation as measured by the Harmonised Index of Consumer Prices (HICP) went up to 1.0 per cent, from 0.8 per cent registered in November 2016.

The largest upward impacts on annual inflation were registered in the Food and Non-Alcoholic Beverages Index, the Restaurants and Hotels Index, the Furniture, Household Equipment and Routine Maintenance of the House Index. These were mainly due to higher prices of vegetables, restaurant services (including cafeterias and the like), and furniture and home furnishings, respectively.

The Recreation and Culture Index, the Clothing and Footwear Index and the Communication Index registered the largest downward impacts on annual inflation, mainly reflecting lower prices for package holidays, garments and communication services, respectively.

The twelve-month moving average rate for December 2016 remained unchanged to that of November 2016, with a rate of 0.9 per cent.

Reference: *National Statistics Office (2017), Harmonised Index of Consumer Prices: December, 2016.*
https://nso.gov.mt/en/News_Releases/View_by_Unit/Unit_A5/Price_Statistics/Documents/2017/News2017_010.pdf

a)   The National Statistics Office produces two measures of inflation, the Retail Price Index (RPI) and the Harmonised Index of Consumer Prices (HICP). What reasons could explain potential differences between the two indices?   (6)

b)   How does the European Central Bank define price stability and why is an inflation target of 0% discouraged?   (7)

c)   Why is it important for Malta's inflation rate to be in line with the inflation rates registered by the other economies in the Euro area?   (6)

d)   Briefly give an overview of different anti-inflationary policies and illustrate through practical examples how these policies could be implemented to combat inflation.   (8)

e)   What is the Phillips curve relationship? Is there a difference in this relationship between the short- and the long-run?   (6)

(Total: 33 marks)

6. In 2016, the general government deficit was forecast to decrease to 0.7% of GDP, from 1.4% in 2015. Current tax revenue was expected to grow more than nominal GDP, boosted by the positive outlook for the labour market and consumer demand as well as the rise in excise duties and the proceeds from the citizenship programme. Current expenditure was expected to continue growing, mainly driven by public sector wages and intermediate consumption related also to costs associated with the country's upcoming EU presidency.

    From 64% in 2015, the debt-to-GDP ratio was projected to fall to 62.1% in 2016, below 60% in 2017 and to reach 57.2% by 2018.

    Reference: European Commission (2016), Autumn 2016 Economic Forecast: Modest growth in challenging times: Country Forecasts: Malta.
    http://ec.europa.eu/economy_finance/eu/forecasts/2016_autumn/mt_en.pdf

a) The European Commission was expecting Malta to decrease its debt-to-GDP ratio to 62.1% in 2016 from 64.0% in 2015. At the same time, the European Commission was expecting a deficit in the general government balance for 2016. How could Malta's public-debt-to-GDP ratio be expected to fall when the country was also expected to record a deficit?   (6)

b) What is the difference between discretionary fiscal policy and automatic fiscal stabilisers?   (6)

c) There are different ways how a Government can reduce its deficit. Discuss how this could be achieved and whether any of these are preferable.   (7)

d) Taxation is an essential instrument of fiscal policy. Discuss the rationale behind taxation and briefly describe the different types of taxes at the Government's disposable.   (9)

e) What is the balanced budget multiplier? Explain your answer through an example.   (5)

(Total: 33 marks)