COLLEGE	College of Business & Economics
SCHOOL	Economics
CAMPUS	APK
MODULE NAME	Economics 100
MODULE CODE	ECO100
SEMESTER	First
ASSESSMENT OPPORTUNITY	APS Assessment
MONTH & YEAR	July 2019

ASSESSMENT DATE	July 2019	SESSION	1
ASSESSOR(S)	Prof G Van Zyl Dr P Baur Mr F Kirsten		
MODERATOR(S)	Dr K Viljoen		
DURATION	2 hours	TOTAL MARKS	100

INFORMATION/INSTRUCTIONS

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|---|
| This is a fill-in paper. |
| The paper has 9 numbered pages. |
| There are four questions with sub-sections. |
| A noiseless calculator is allowed. |

MARK ALLOCATION

Question 1 [30]	Question 2 [25]	Question 3 [20]	Question 4 [25]
1.1 [5]	2.1 [4]	3.1 [4]	4.1 [4]
1.2 [4]	2.2 [2]	3.2 [4]	4.2 [7]
1.3 [4]	2.3 [2]	3.3 [4]	4.3 [7]
1.4 [5]	2.4 [3]	3.4 [2]	4.4 [7]
1.5 [2]	2.5 [3]	3.5 [3]	
1.6 [4]	2.6 [4]	3.6 [3]	
1.7 [4]	2.7 [4]		
1.8 [2]	2.8 [3]		

TOTAL	Mark awarded
[100]	

Question 1: Economic concepts & understanding changes in the economy [30]

1.1 The following are possible descriptions of positive or normative economic statements. **(5)**

Statement	Positive/Normative
The consumer price index rose 4.6% last month.	
The unemployment rate of 24% is too high.	
The average rate of interest on loans is 6.6%.	
The economy grew at an annual rate of 2.6%.	
The inflation target range in South Africa should rather be in the 2-4% range.	

1.2 Assume the following production possibilities curve. **(4)**
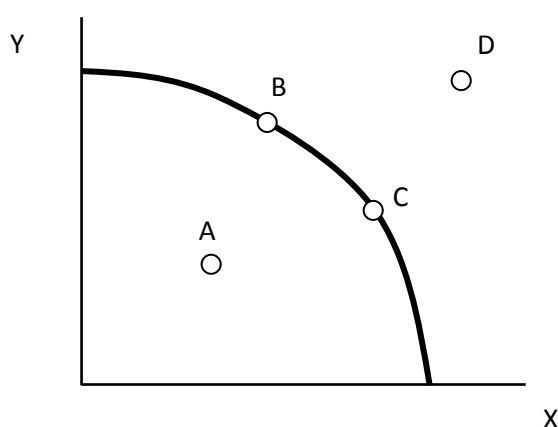
Indicate whether you agree or disagree with the following descriptions. (Use an **X** to indicate your preferences).

Description	Agree	Disagree
Moving from point C to point B indicates a trade-off.		
Point D indicates under-utilisation of resources.		
An increase in the price of product Y will result in a movement from point B to C.		
Moving from point B to point D indicates economic growth.		

1.3 Use the hypothetical information provided to complete the table. Calculations rounded off to two decimal points. No answers in pencil will be marked. **(4)**

Year	GDP at current/ nominal prices (Rm)	Economic growth rate	CPI index (2008 = 100)	Inflation rate
2005	1 494		83.1	
2006	1 692		85.1	
2007	1 915		91.0	

2

1.4 Assume the following CPI index and answer the questions that follow. **(5)**

Year	CPI index
20X2	100
20X3	104.5
20X4	106.3

Task	Answer
You bought some financial stock for R20 000 in 20X1. What is the real value of the financial stock at the end of 20X4? **(R)**	
Assume that your nominal salary at the end of 20X3 was R200 000 per annum. What is the real value of your salary at the end of 20X4? **(R)**	
Your employer has granted you a salary increase of 15% at the end of 20X4 in order to combat salary inflation. Indicate the improvement (+) or loss (-) in the real salary position. **(R)**	
Assume that for 20X5 the expected nominal GDP of country A is R6bn, the expected CPI index is 110.2 and the total population of country A is 5m people. What is the per capita GDP for 20X5? **(Rbn)**	
Assume that the GDP at market prices for country B is $15bn, the primary income earned by the citizens and firms of country B abroad is $800m and the national income at market prices is $6bn. What is the primary income generated by foreign firms & nationals in country B? **(Rbn)**	

1.5 Assume that 20% of the population of country D earns 80% of the total income. **(2)**

Task	Answer
What is the value of the Gini coefficient?	

1.6 Assume the following labour market information of a particular country. **(4)**

Total population: 100m people
People of working age: 87m people
Active labour force: 76m people
Employed: 49m people

Determine the following:

Task	Answers
Economically inactive population. **(only indicate numerical value i.e. 20)**	
Unemployed population. **(only indicate numerical value i.e. 20)**	
Unemployment rate. **(only indicate numerical value i.e. 20)**	
Labour force participation rate. **(only indicate numerical value i.e. 20)**	

1.7 Which of the following descriptions represents expansionary monetary policy, restrictive monetary policy, expansionary fiscal policy or restrictive fiscal policy actions? **(4)**

Description	Policy
Government changes the VAT from 15% to 16%.	
The South African Reserve Bank sells government bonds.	
The Government aims to reduce the ever-growing Budget deficit.	
The Central Bank decides to increase the reserve requirement of Banks.	

1.8 Indicate the concepts linked to the following descriptions. **(2)**

Description	Concept
The economic system in which the resources are collectively owned.	
Where buyers and sellers of goods and services meet.	

Question 2: Demand [25]

2.1 Assume a demand curve **P = 80 – 0.2Q.** Indicate/derive the following. (4)

Task	Answer
The price-intercept if demand should decrease by 5%.	
The marginal revenue output (use the new demand equation).	
The price if total revenue is to be maximised (use the new demand equation).	
Maximum total revenue (use the new demand equation).	

2.2 Indicate whether you agree or disagree with the following statements. (Use an **X**) (2)

Descriptions	Agree	Disagree
A decrease in the price-intercept will have no impact on the slope of the demand curve.		
An increase in demand, ceteris paribus will increase consumer surplus.		

2.3 Assume that the price of a pair of Kelvin shirts decrease. The result is a 5% decrease in the sales of a pair of Pringle shirts, but an increase of 8% in the demand for Kelvin trousers. (2)

Descriptions	Answer
What is the relationship between a pair of Kelvin shirts and a pair of Pringle shirts?	
What is the relationship between a pair of Kelvin shirts and Kelvin trousers?	

2.4 Assume the following descriptions and indicate the price elasticity or income elasticity or cross-price elasticity characteristics thereof. (3)

- The income of a consumer increases by 8% resulting in a 12% increase in the demand for a particular product.

Indicate whether the product is a luxury product, a necessity or an inferior product

- The price of product A decreases by 8% resulting in an increase in the demand for product B of 10%.

Indicate the relationship between the products and the strength of this relationship e.g. weak substitute

- The price of a product decreases by 10% and the resulting increase in the quantity demanded of the product is 6%.

Indicate whether the demand curve is elastic or inelastic

2.5 Assume a demand curve **P = 80 – 0.2Q.** Indicate what will happen to total revenue for the following price changes. (Apply the relationship between elasticity of demand and total revenue) **(3)**

Price change	Impact on total revenue (increase or decrease)
The price increases from R32 to R35.	
The price decreases from R48 to R45.	
The price increases from R25 to R28.	

2.6 Answer the following questions. **(4)**

Question	Answer
Assume that a 1% increase in the price of the product resulted in a total loss of demand for the product. Would you regard the product as relatively elastic, relative inelastic, perfect elastic or perfect inelastic?	
Assume that a 6% increase in price resulted in a 5% decrease in demand. Would you regard the product as relatively elastic, relative inelastic, perfect elastic or perfect inelastic?	
Assume a price insensitive range. Will an 8% decrease in price result in a more or less than 8% increase in quantity demanded?	
Assume a price sensitive range on a demand curve. Will the 8% change in price be greater or smaller than the 8% change in quantity demanded?	

2.7 The current income of consumers is R25 000 per household and the quantity demanded of the product is 200 units. An increase in the income of consumers to R30 000 per household resulted in an increase in the demand for the product to 300 units. Answer the following questions. **(4)**

Question	Answer
Calculate the income-elasticity coefficient. (Work with % changes).	
How would consumers classify the product?	
Assume a 10% decrease in the income of the consumers. Would the decrease in the demand for the product be greater or less than 10%?	
Assume a 12% increase in the income of the consumers. Will the increase in demand be greater or less than 12%?	

2.8 Assume the following cross-price elasticity coefficients for products A, B, C and D. **(3)**

$E_{CROSS\ A\&B}$	1.22
$E_{CROSS\ C\&D}$	-0.68
$E_{CROSS\ A\&D}$	-1.22
$E_{CROSS\ B\&C}$	+3.55

Question	Answer
What is the strength and relationship between products A & B and A & D?	
What is the strength and relationship between products C & D and C & B?	
What is the strength and relationship between products B & A and B & C?	

Question 3: Supply & cost   **[20]**

3.1 Answer the following questions. (Show all your calculations).   **(4)**

Question	Answer
Assume a demand curve **P = 80 – 0.2Q** and a supply curve **Q = -40 + 2P.** Calculate the market-clearing price.	
Assume that both the demand and supply increases simultaneously in the market. What will happen to the equilibrium price?	
Assume that demand decreases and supply increases simultaneously in the market. What will happen to equilibrium price?	
Will a maximum price be set lower or higher than the market-clearing price?	

3.2 Indicate the relationship between average variable cost and average output by applying the **applicable relation formula**.   **(4)**

3.3 Answer the following questions. **(4)**

Question	Answer
What does the increasing part of the LAC-curve indicate?	
What principle underpins the choice of productive capacity?	
Assume that an 8% increase in the input base resulted in a 10% increase in output. What kind of returns to scale are we dealing with?	
Define real labour cost.	

3.4 Answer the following. **(2)**

	Question	Answer
1	Assume that the credit interest rate is 8% per annum, the rate of depreciation is 5% per annum, the purchasing price of the real capital stock is R100 000 and the leasing-rate is R20 000 per annum. Should the firm buy or rent the real capital stock?	
2	You are applying the net present value (NPV) approach to determine the viability of investing in capital stock. Assume that the discount rate is 8% and the net present value is R5. Will you invest in the capital stock?	

3.5 Assume that the labour units increased by 8% and the real capital stock decreased by 6% (due to a 4% decrease in the marginal efficiency of capital and a 5% increase in the marginal efficiency of labour). Determine the following. (Show all your calculations). **(3)**

	Question	Answer
1	The % capital/labour ratio change. **(%)**	
2	The marginal efficiency ratio change. **(%)**	
3	The elasticity of substitution.	

3.6 The following descriptions deal with short- and long-run cost curves. Indicate with an **X** the correctness or incorrectness of the statements. **(3)**

Description	Correct	Incorrect
Average fixed cost will decrease when output increases.		
Marginal cost will decrease when marginal output increases.		
The decreasing part of the LAC curve is indicative of dis-economies of scale.		

Question 4: Market structures [25]

4.1 Assume that Colin is currently earning a salary of R400 000 per annum. He has a R300 000 fixed deposit at Nedbank on which he earns an interest of 5.5% per annum. To start his own business, he needs to withdraw the fixed deposit and use it as start-up capital. The projected present values of the operating annual costs are R150 000 for material and R300 000 for operating costs. Colin is expecting a present value annual sales revenue of R850 000. Calculate/determine the following. (4)

Question	Answer
Opportunity costs.	
Economic costs.	
Economic profit/loss.	
Should Colin start with his own business?	

4.2 Assume a perfect competitive business environment. Answer the following questions. (7)

Question/Task	Answer
Assume that the market price is lower than minimum average total cost but higher than average variable cost. Indicate the equilibrium profit/loss position of the competitive firm in the short run.	
CAFPO produces a product in a perfectly competitive market. The current market price is **R40** and the firm's total cost is **C = 100 + 2Q +0.5Q²**. Assume that the output is set on the principle that marginal revenue is equal to marginal cost. Calculate the optimal production level for the firm.	
Assume that the market price is equal to average total cost. What is the total economic loss for the competitive firm in the short-run?	
Assume increasing returns to scale. Indicate the sign of the slope of the long-run supply curve.	
Assume a decreasing cost industry. Are we dealing with an increasing cost industry or a decreasing cost industry?	
Assume decreasing returns to scale. Is the % increase in market demand greater or smaller than the % increase in market supply?	

4.3 Assume monopoly formation. Answer the following questions. (7)

	Question	Answer
1	The demand equation for the product is **P = 1200 - 0.4Q**. The firm's total cost function is **C = 400 000 + 100Q + 0.02Q²**. What is the monopoly price?	
2	Which one of a perfect competitive industry or a monopolist charges the higher price?	
3	Assume price discrimination. Would the monopolist charge a higher or lower price for the relative elastic market segment?	
4	Is the demand curve of the monopolist perfect inelastic?	
5	Will monopoly price increase or decrease consumer surplus?	
6	Can the monopolist realise economic profit in the long run?	

4.4 Assume monopolistic competitive and oligopolistic business environments.

Answer the following questions. (7)

	Questions	Answer
1	Can products be homogeneous and heterogeneous in a monopolistic competitive business environment?	
2	Can economic profits be realised in a monopolistic competitive market?	
3	Assume that a dominant firm sets price at R100 per unit. Will the other firms in the market set a price lower or higher than R100?	
4	Assume a decrease in the marginal cost of the price leader. Could this situation result in a higher or lower price?	
5	ASCO is a dominant price leader operating in an oligopolistic market structure. The following information applies: $4P = 20 - 4Q_M$ **(total market demand)** $Q_S = 4P$ **(combined supply of the smaller firms)** $MC_{ASCO} = 0.4Q_{ASCO}$ Calculate the price set by ASCO and the combined output of the other firms.	

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