Tutorial Letter 201/2/2018

Economics

ECS1500

Semester 2

Department of Economics

This tutorial letter contains a discussion of Assignments 01, 02 and 03 for the second semester.

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CONTENTS

Dear Student

In this tutorial letter, we will provide the answers to the multiple-choice questions in Assignments 01, 02 and 03 with brief explanations, where necessary. In some cases, we will merely refer you to the study material. If you do not understand an answer, please consult your lecturer or tutor.

We wish you success in preparing for the examination!

Kind regards

Your lecturers

1 DISCUSSION OF ASSIGNMENT 01, SECOND SEMESTER 2018

1.11 The correct option is [2], as the statement is false.

The economic problem is the fact of scarcity. In other words, there is not enough goods and services to satisfy everyone's goods and services. The lack of enough goods and services stems from the lack of resources (factors of production) (see section 1.1.1). Consequently, certain choices have to be taken by important role players of the economy (households, government and firms). These role players basically establish

- what should be produced in the economy
- how these goods and services should be produced
- for whom the various goods and services should be produced

Money, on the other hand, only serves as a medium of exchange. In other words, money can be exchanged for goods and services. Money, by its very nature, does not contribute to the production of goods and services. Thus, an increase in money will not decrease scarcity. You will learn more about the role of money in the economy in learning unit 9.

1.12 The correct option is [1], as the statement is true.

The effect of various factors on the market demand are summarised in table 3.3. An expected change in the future price of a good is one of the factors that is also summarised there. The statement is true, because, if prices are expected to decrease, consumers will realise that it will be cheaper to purchase the product in the future rather than in the present time. Therefore, they will reduce current consumption for future consumption, thus a decrease in current demand.

1.13 The correct option is [2], as the statement is false.

It is true that a car is not an intermediate good, which means that it cannot be used to produce other goods. However, we cannot include it as part of economic activity for the current period, as it was produced in a previous period. When calculating economic activity, the value that is *added* to the existing output should be considered.

However, because you will only learn about intermediate goods in section 6.2.2.1, which is not prescribed for Assignment 01, we decided not to let this question count for this assignment.

1.14 The correct option is [1], as the statement is true.

Opportunity cost is discussed in section 1.1.2. Opportunity cost means including the cost of the next best foregone opportunity that is not chosen. In this case, Peter went to the cinema, so he did not study, which we assume was the next best thing to do.

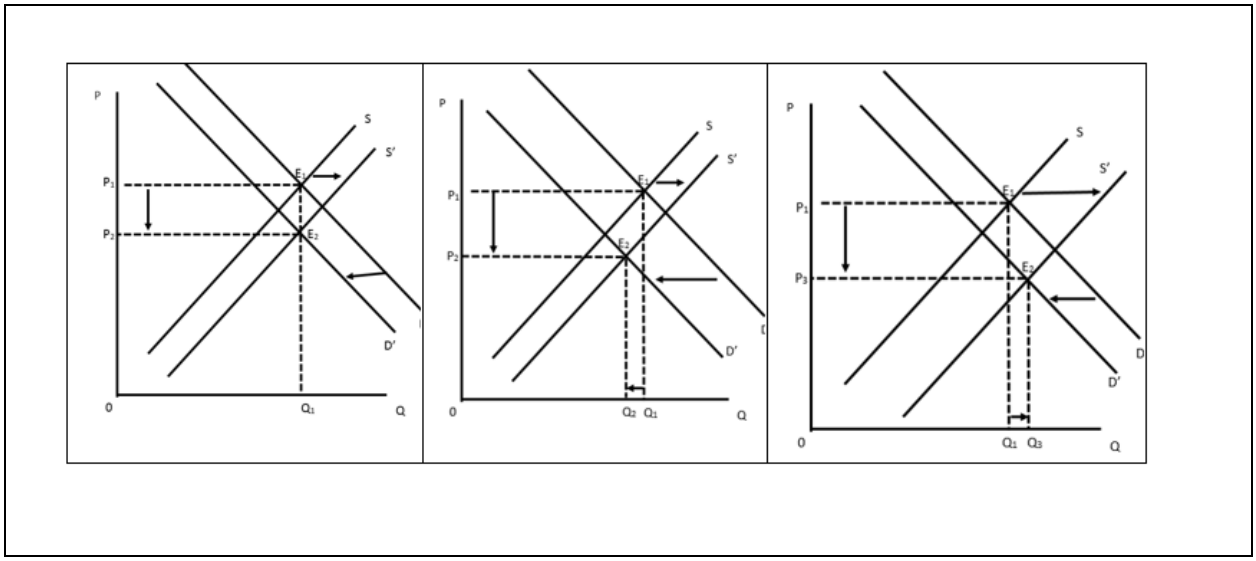
1.15 The correct option is [1], as the statement is true.

The resultant impact of a decrease in handbags is that it leads to a decrease in equilibrium prices of handbags and, equally, an increase in the supply of bags will lead to a decrease in the equilibrium price. However, we cannot predict what will happen to the equilibrium output. To determine the impact of the simultaneous change in demand and supply will require a further

study as the impact of the simultaneous changes on equilibrium quantity will depend on the relative magnitudes of the changes in demand and supply.

Figure 1.1 illustrates that the price will decrease, but that the change in the equilibrium output depends on the magnitude of the changes in demand and supply.

Figure 1.1



As you can see in figure 1.1, if demand and supply change by the same percentage (i.e. there are equal shifts in the demand and supply curves), the equilibrium quantity does not change. If the decrease in demand is relatively larger than the increase in supply, the equilibrium quantity decreases and if the decrease in demand is relatively smaller than the increase in supply, the equilibrium quantity increases.

1.16 The correct option is [3].

Wants consist of human desires for goods and services. For wants to be translated into demand, we need to have the necessary resources to pay for what we want. However, resources are limited. Due to the reality of insufficient resources (scarcity), we do not always get what we want (see section 3.2, first paragraph).

1.17 The correct option is [2].

The economic problem of scarcity forces us to make decisions, due to the fact that, if resources are to be invested in producing one product, they are not available to produce other goods; thus, in every choice there is an opportunity cost (see section 1.1.2).

Option [1] is incorrect. Money is not regarded as part of the resources that contribute towards the factors of production. Resources include natural resources, human resources (labour and entrepreneurship) and capital goods.

Option [3] is incorrect, because wants are unlimited. As explained in section 1.1.2, opportunity cost is analysed in the presence of scarcity (thus *un*limited wants versus limited resources).

1.18 The correct option is [3].

Opportunity cost is the value of the best foregone opportunity. If Lorna does not go skating, she can work 7 hours instead, where she can earn R15 an hour, thus 7 x R15 = R105.

Thus, the opportunity cost of skating = R105.

Option [1] is therefore correct.

1.19 The correct option is [4].

A negative/ inverse relationship involves two variables that move in opposite directions and in this case the two variables are studying and working. For example, for every hour extra spent at work, one hour less is available for study. This relationship is illustrated by a linear curve with a negative slope. The curve is linear as the relationship between the hours studying and the hours worked remains constant – for every 1 (one) hour not spent working, one additional hour is available for studying.

A vertical or a horizontal curve illustrate the relationship of variables that are unrelated. In other words, the change in one variable will not affect the other variable. For example, the rainfall in South Africa has no influence on coal production in Wales. Refer to the study guide, section 2.3, for a discussion of the relationship between variables and how this is depicted using graphs.

1.20 The correct option is [2].

When analysing economic relationships, to keep things simple, we mainly focus on the relationship between a dependent variable and a *particular* (one at a time) independent variable, while the other determinants remain unchanged. This is what ceteris paribus means – see section 2.1 of the study guide.

Option [1], [3] and [4] are incorrect, because the phrase may refer to any variables that remains constant, not only prices, but also quantity or determinants of prices.

1.21 The correct option is [2].

A negative/inverse relationship involves two variables that move in opposite directions and, in this case, the quantity of bread and the quantity of rolls that can be produced will move in opposite directions. If bread and rolls are substitutes in production, it means that more or less the same ingredients and resources are used to produce both goods; thus, the more bread is being produced, the less resources are available to produce rolls. This means that the quantity of bread and the quantity of rolls that will be produced will have a negative or an inverse relationship.

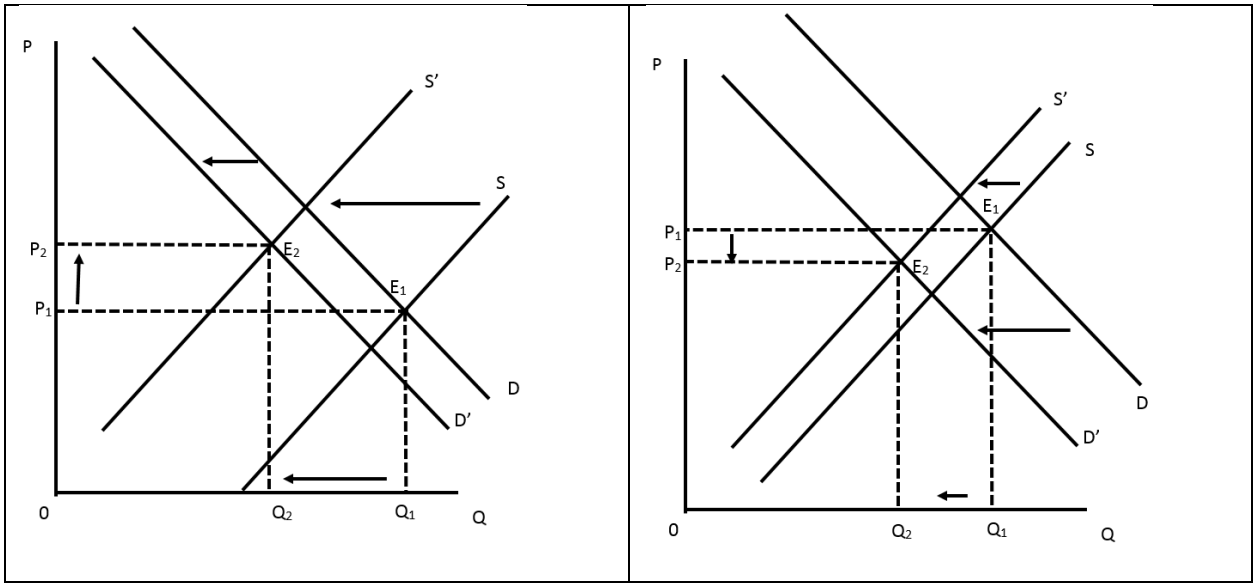
A positive (which is also a direct) relationship involves two variables that move together in the same direction. For example, the number of bakers per day and the number of loaves of bread made. As the quantity of bread that is produced will determine the quantity of rolls that will be produced (and vice versa), we cannot say that the quantity of bread and the quantity of rolls that are produced are unrelated. Refer to the study guide, section 2.3, for a discussion of the relationship between variables and how this is depicted using graphs.

1.22 Option [1] is the correct option.

Inferior goods are goods of which consumption falls as income increases. For example, if chicken is regarded as an inferior product, when the income of consumers increases, demand for chickens decrease, as illustrated by the shift from D to D' in figure 1.2.

The increase in the cost of producing chicken will result in a leftward shift of the supply curve, e.g. from S to S' in figure 1.2. The combined effect of the decrease in demand and the leftward shift of the supply curve will result in a decrease in the equilibrium quantity of chickens that are bought and sold in the market. As can be seen in the diagrams the effect on price is indeterminate. It can either increase or decrease or stay the same (not illustrated), depending on the magnitude of the decreases in supply and demand, but the equilibrium quantity will definitely decrease.

Figure 1.2



1.23 The correct option is [3].

Complements are goods that tend to be used jointly to satisfy a want. If the price of the one good changes, the quantity demand of that particular good will also change, but in the opposite direction (due to the negative slope of the demand curve). The demand for goods used with that good (i.e. the complements) will then also shift in the same direction as the change in the quantity demanded of the original good. In this case, the increase in the price of dresses will result in a decrease in the quantity demanded of dresses, and since this leads to a decrease in the demand for scarfs, we know that dresses and scarves are complements.

Inferior goods are goods of which consumption falls as income increases. Normal goods are goods for which the consumption increases as income increases. This question does not mention a change in income; thus, options [1] and [4] are not correct alternatives.

Option [2] is incorrect, because an increase in the price of a substitute product will lead to an increase in the demand of the alternative product.

1.24 The correct option is [2].

A shift in the supply curve is caused by a change in other supply determinants, except the price of the product. As jam and canned fruit are substitutes in production, it means the same resources are employed to produce these two goods. An increase in the price of canned fruit will mean that more profit can be made by producing canned fruit, instead of jam; thus, producers may decide to produce more canned fruit and less jam, resulting in a shift of the supply curve of jam to the left.

Option [1] is incorrect, because a change in the price of jam will lead to a movement *along* the supply curve of jam.

Option [3] is incorrect, because income does not form part of the determinants of supply. Income forms part of the determinants of demand.

Option [4] is incorrect, because consumer preferences does not form part of the determinants of supply. Consumer preferences form part of the demand determinates.

1.25 The correct option is [1].

Demand curves illustrates a negative/inverse relationship of variables. There is an inverse relationship between price and quantity demanded; this means that when the price increases, the quantity demanded decreases and vice versa.

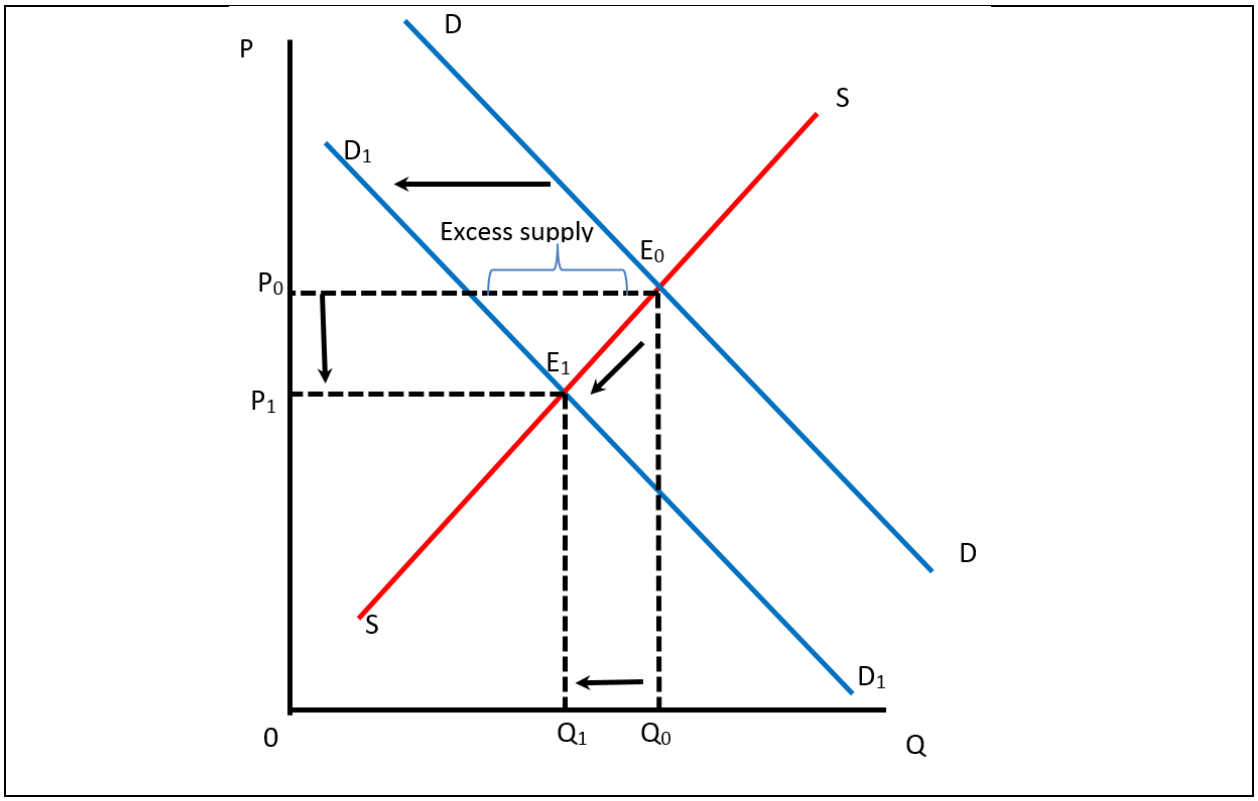
Option [2] is incorrect, because it does not describe the law of demand, on which the derivation of the demand curve is based. The same applies to options [3] and [4].

1.26 The correct option is [3].

When demand decreases, a situation of excess supply will exist at the original equilibrium price (see figure 1.3), which will result in a decrease in the price. Therefore, option 4 is incorrect, as it refers to a situation of excess *demand*.

Options [1] and [2] are both incorrect. As illustrated in figure 1.3, at the new equilibrium price, $P_{1,}$ there will be neither excess demand nor excess supply.

Figure 1.3



1.27 The correct option is [2].

At equilibrium, quantity demanded (Q_D) is equal to quantity supplied (Q_S). Therefore, we can say replace both Q_D and Q_S with Q_e. Now we can say that $Q_e = 80 - 3P$ and $Q_e = 50 + 2P$. Therefore:

$80 - 3P = 50 + 2P$

$80 - 50 = 3P + 2P$

$30 = 5P$

$\frac{30}{5} = P$

$6 = P$

Now we can determine the equilibrium quantity by replacing P equal to 6, in either the demand or supply equation. Let's use the demand equation:

$Q_D = 80 - 3P$

$Q_D = 80 - 3 \times 6$

$Q_D = 80 - 18$

$Q_D = 62$

1.28 The correct option is [4].

At equilibrium, quantity demanded (Q_D) is equal to quantity supplied (Q_S). Therefore, we can say replace both Q_D and Q_S with Q_e. Now we can say that $Q_e = 60 + 0{,}5P$ and $Q_e = -30 + 0{,}7P$.

Therefore:

$60 + 0{,}5P = -30 + 0{,}7P$

$60 + 30 = 0{,}7P - 0{,}5P$

$90 = 0.{,}2P$

$\frac{90}{0.2} = P$

$450 = P$

1.29 The correct option is [4].

An increase in the number of sellers of laptops will increase supply of laptops and thus result in a rightward shift of the supply curve of laptops. This will result in a decrease in the price of laptops. As laptops and desktops are substitutes, and laptops are now relatively cheaper, this will result in a decrease in the demand for desktops, i.e. a leftward shift of the demand curve for desktops.

Option [1] is incorrect, because an increase in price of desktops will lead to an upward movement along the demand curve for desktops.

Option [2] is incorrect, as union action may affect the supply of laptops in the following two ways:

- decreased supply – as workers will not be working inefficiently
- increase in the cost of inputs – as workers might be demanding a wage increase

Both these scenarios are illustrated by a leftward shift of the supply curve.

Consequently, the price of laptops will rise and will lead to a decrease in the quantity demanded of laptops. The resultant effect is that the demand for desktops will increase (substitution effect).

Option [3] is incorrect, because immigration increases the number of potential/willing buyers; thus, demand increases.

1.30 The correct option is [1].

In the case of complements, which is in this case bread and butter, an increase in the price of bread will lead to decrease in the quantity demanded of butter, and a change in the demand for a complement in the *same* direction. Therefore, an increase in the price of bread will result in a decrease in the quantity demanded of bread, and a decrease in the demand for butter.

Option [2] is incorrect, because a movement along the demand curve for bread illustrates the effect of an increase in the price of bread. The demand curve for bread does not shift and, thus, the demand for bread does not fall, but only the quantity demanded will decrease.

When the demand for butter decreases (i.e. the demand curve for butter shifts to the left), so does the equilibrium quantity demanded and the price of butter. Therefore, both options [3] and [4] are incorrect.

2 DISCUSSION OF ASSIGNMENT 02, SECOND SEMESTER 2018

Unless otherwise stated, all page and section references are references to the study guide for ECS1500.

2.1 If the demand for the college's tuition is price elastic, it means that an increase in the price (tuition fees) will result in a decrease in the quantity of tuition demanded. This may affect the college's revenue negatively, if the quantity of tuition demanded decreases by a larger percentage than the increase in price. Therefore, [1] is not the correct alternative. If the demand for the college's tuition is not price sensitive, it means that the increase in the tuition fees will not change the quantity of tuition demanded. Therefore, the revenue will increase when the price increases. Alternative [2], is a correct alternative.

Income elasticity has to do with how much demand for a product or service will change when the income level of consumers changes. This is not relevant here, therefore [3] and [4] are not correct options.

The correct alternative is [2].

2.2 Indirect taxes will be most successful to raise additional income for government, if it is raised on goods or services for which the demand is inelastic. That will mean that the higher price, which results from the additional indirect tax, will not affect quantity demanded a lot and, therefore, revenue raised from taxes will be high. If the demand for a good is price sensitive (demand is price inelastic), consumers and businesses will stop using that good or service or use less of it when the price increases, due to the additional taxes and the revenue of the government will not increase by a lot.

Option [1] refers to prepared food for which the demand is price sensitive. Demand for prepared food will thus decrease when the price increases due to the higher tax, and this will therefore not be an effective manner to raise additional revenue for government.

Option [2] refers to petrol, which is an essential good in this country, meaning that it is difficult for the public to change the quantity of petrol that they buy. Therefore, the quantity demanded will not change a lot due to the price increase that results from the higher tax, and, thus, this will be an effective good to raise additional revenue for the government by means of an indirect tax.

If there are alternative roads available, an increase in tax that increase the price of using a certain road will decrease the use of that particular road and increase the use of the alternative roads. Therefore, this will not be an effective manner to increase the revenue of the government. Option [3] is not correct.

The same principle applies to option [4]. If a simple to use and cheap alternative to electricity supplied by the local authority is available, the public will switch to the alternative when the price of electricity supply increases, and the additional revenue that can be raised on this for government will not be high.

The correct alternative is [2].

2.3 Price elasticity of demand is calculated as follows:

$$Price\ elasticity\ of\ demand = \frac{Percentage\ change\ in\ quantity\ demanded}{Percentage\ change\ in\ price}$$

Therefore, the percentage change in price that is required to bring about a certain percentage change in demand can be calculated as follows:

$$Percentage\ change\ in\ price = \frac{Percentage\ change\ in\ quantity\ demanded}{Price\ elasticity\ of\ demand}$$

$$Percentage\ change\ in\ price = \frac{10\%}{0{,}5} = 20\%$$

To *decrease* the use of water the price has to *increase*.

Therefore, the correct option is [3].

2.4 Cross-elasticity of demand refers to the situation where a change in the price of one product results in a change in the quantity demanded of another related product. If cross-elasticity is positive, it means that an *increase* in the price of one product will result in an *increase* in the quantity demanded of another product. That means the two products are substitutes, since the quantity demanded of the product for which the price increased will decrease. Therefore, [5] is a correct option.

If two products are complements in consumption, the quantity demanded of the two products will change in the same direction, as the two goods are used together. Thus, when the price of the one good *increases* and the quantity demanded of that good *decreases*, the quantity demanded of the other good will also *decrease.* Therefore, the cross-elasticity of demand for complements will be negative. Option [1] is thus not a correct option.

Income elasticity of demand refers to the relationship between the income level of consumers and the quantity demanded of a certain good. Therefore, options [2], [3] and [4] are not correct answers.

The only correct option is [5].

2.5 To determine if Product A is a normal, luxury, essential or inferior good, we have to calculate the income elasticity of demand for Product A. Income elasticity of demand can be calculated as follows:

$$Income\ elasticity\ of\ demand = \frac{Percentage\ change\ in\ quantity\ demanded\ of\ a\ product}{Percentage\ change\ in\ consumers'income}$$

The percentage change in the quantity demanded of Product A can be calculated as follows:

$$Percentage\ change\ in\ quantity\ demanded\ of\ Product\ A$$
$$= \frac{Quanity\ by\ which\ demand\ for Product\ A\ changes}{Quantity\ on\ Product\ A\ demanded\ before\ income\ change} \times 100 = \frac{1\ 500}{4\ 000} \times 100$$
$$= 37{,}5\%$$

The percentage change in the income of consumers can be calculated as follows:

$$Percentage\ change\ in\ income\ of\ consumers$$
$$= \frac{Amount\ by\ which\ consumers'\ income\ changes}{Consumers'income\ before\ change} \times 100$$
$$= \frac{2\ 000}{8\ 000} \times 100 = 25\%$$

Income elasticity of demand for Product A can now be calculated:

$$Income\ elasticity\ of\ demand\ for\ Product\ A = \frac{37{,}5\%}{25\%} = 1{,}5$$

Because the income elasticity of demand for Product A is positive (i.e. the quantity demanded changes in the same direction as the change in income), we know that Product A is a normal good. Because the income elasticity of demand for Product A is larger than 1, we know that Product A is a luxury good (the quantity demanded increases by a larger percentage than the increase in income). Therefore, options a and b are correct.

Option c is incorrect, as the income elasticity of an essential good will be positive, but smaller than one.

Option d is incorrect, as the income elasticity of an inferior good will be negative, because the quantity demanded of such a good will change in the opposite direction of the change in income.

The correct alternative is [1].

2.6 Elasticity of supply provides an indication of how much the quantity that is supplied of a certain good will change when there is a change in the price of that good. Generally, a firm would like to be able to adjust their production when the price of a good changes, as it will mean that they will be able to ensure maximum revenue. If the price of a product increases, it will benefit the firm to increase production as quickly as possible in order to increase revenue. If the price of a product decreases, it will benefit the firm to decrease production, as they may start to make a loss if the price decreases by too much.

If price elasticity of supply is 0,1, it means that the supply is price inelastic and, thus, the firm cannot adjust the quantity that they produce easily. This should be a concern to the firm and they should consider ways in which to be able to be more responsive to price changes.

Option [1] is incorrect. This statement has to do with the price elasticity of demand for this firm's product.

Option [2] is not correct. Price elasticity of supply does not indicate anything about the rate of

change in the demand for a product.

Option [3] is not correct. The availability of substitutes influences the demand for a product, not the supply.

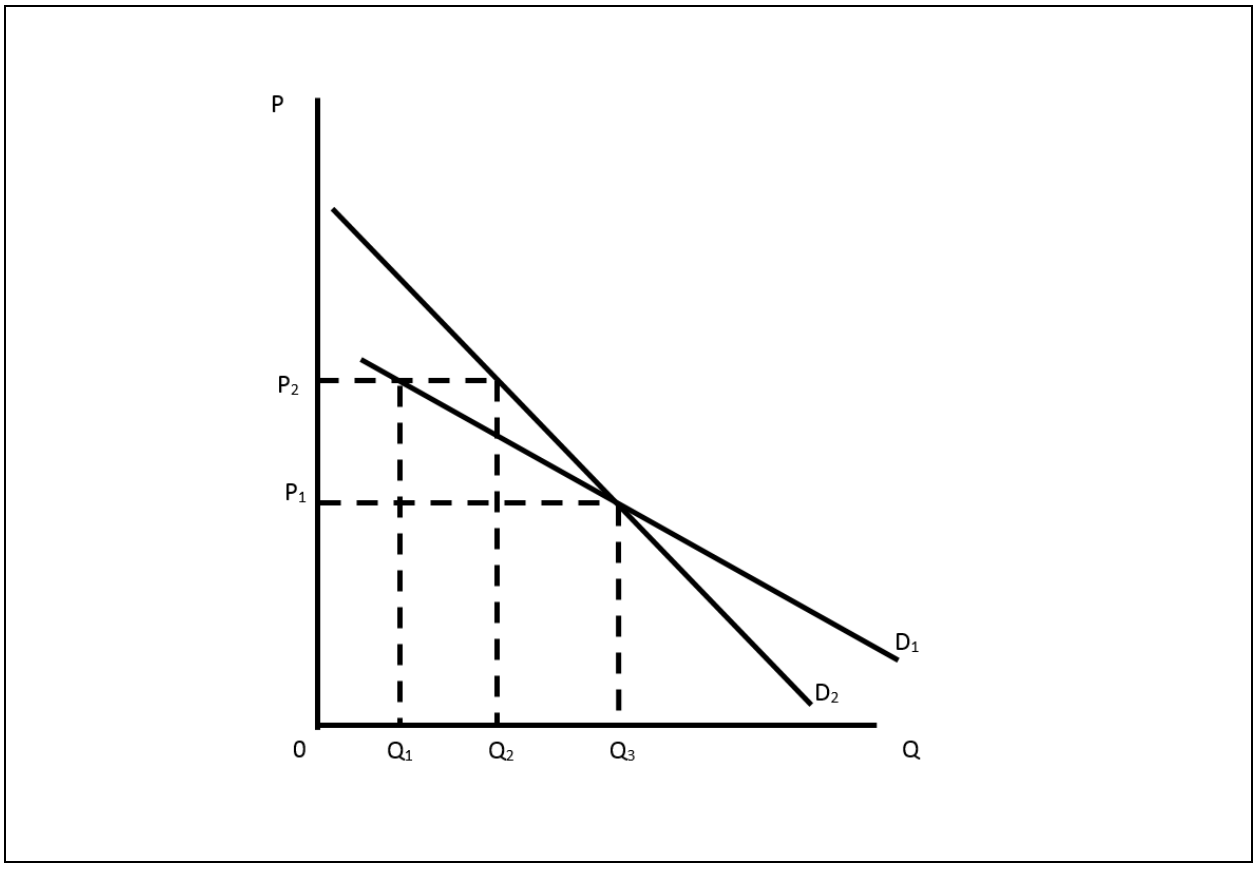
Option [5] is incorrect. The supply elasticity of supply indicates how sensitive *supply* is to price changes, not *demand*.

Option [4] is correct, as a price elasticity of supply lower than one indicates that the amount of a product supplied cannot be easily adjusted due to price changes and, as indicated above, this should be a concern for the firm.

Therefore, the only correct option is [4].

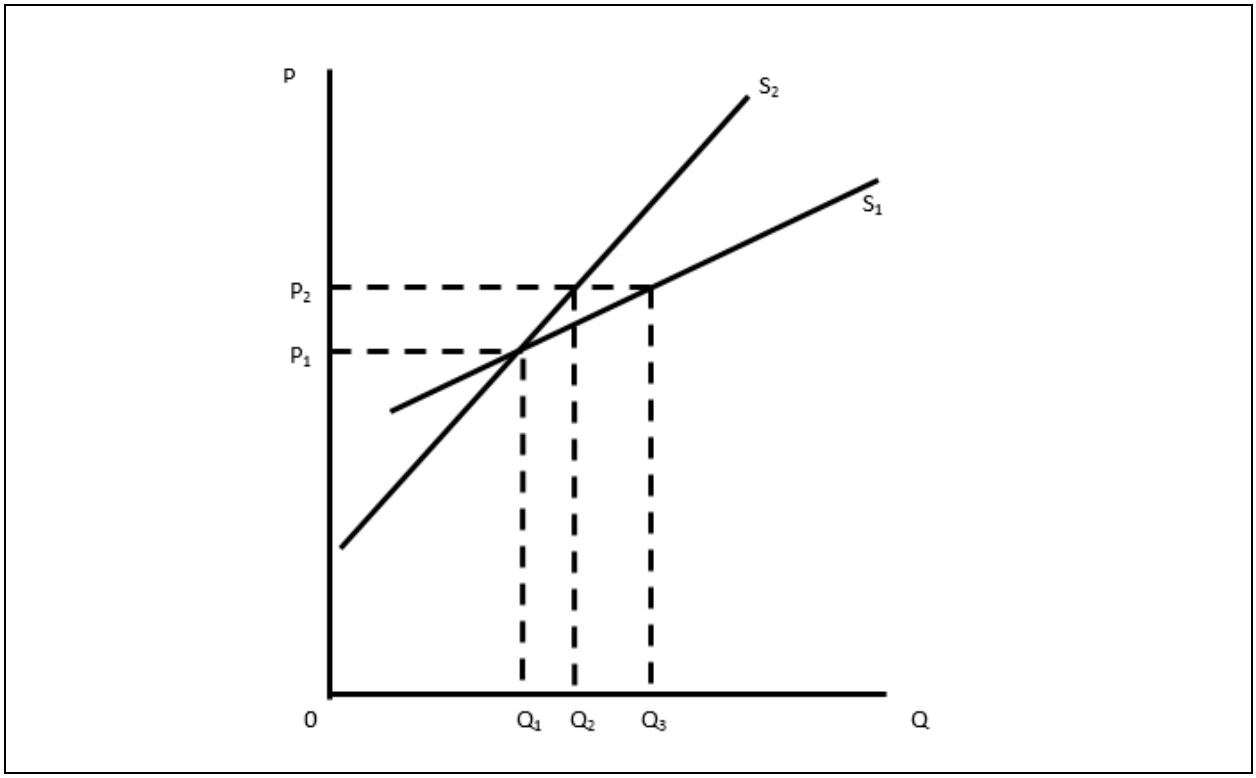
2.7 If demand is more price elastic (such as D_1 in figure 2.1 below), a change in price from P_1 to P_2 will have a larger effect on the quantity demanded (decrease from Q_3 to Q_1) than if demand is less price elastic (such as D_2), where it only increases from Q_3 to Q_2.

Figure 2.1



If supply is more price elastic (such as S_1 in figure 2.2 below), a change in price from P_1 to P_2 will have a larger effect on the quantity supplied (from Q_1 to Q_3) than if supply is less price elastic (such as S_2), where it only increases from Q_1 to Q_2.

Figure 2.2



Therefore, the correct options are a and c, and the correct alternative is [1].

2.8 The difference between microeconomics and macroeconomics is explained in section 6.1.1. Alternative [1] is not correct. Individual markets for goods and services are studied in microeconomics, while aggregate demand and supply of all goods and services, together, are studies in macroeconomics. Alternative [2] is not correct. The general price level and inflation is considered in macroeconomics. Price determination in individual markets is studied in microeconomics. Alternative [3] is correct. Microeconomics looks at individual markets, while national totals such as aggregate production and the general price level are considered in macroeconomics. Alternative [4] is not correct. National issues are considered in macroeconomics, while microeconomics focus on specific individual markets.

The only correct alternative is therefore [3].

2.9 The three methods to calculate the GDP are described in section 6.2.2.2. These are the expenditure, production and income methods.

The correct alternative is [2].

2.10 Nominal GDP is calculated by multiplying the quantity by the price for that year. Real GDP is calculated by multiplying the quantity by a constant price, in this case 2015 prices. Therefore, nominal GDP for 2015 and 2016 for the country of Oilpac can be calculated as follows:

Nominal GDP_{2015} = $Quantity_{2015}$ x $Price_{2015}$ = 5 000 x \$2 = \$10 000
Nominal GDP_{2016} = $Quantity_{2016}$ x $Price_{2016}$ = 6 000 x \$3 = \$18 000

The increase in nominal GDP from 2015 to 2016 = \$18 000 - \$10 000 = \$8 000

$$Growth\ rate\ in\ nominal\ GDP\ from\ 2015\ to\ 2016$$
$$= \frac{Change\ in\ nominal\ GDP\ from\ 2015\ to\ 2016}{Nominal\ GDP_{2015}} \times 100$$
$$= \frac{\$8\ 000}{\$10\ 000} \times 100 = 80\%$$

Real GDP for 2015 and 2016, at constant 2015 prices for the country of Oilpac, can be calculated as follows:

Real GDP_{2015} = $Quantity_{2015}$ x $Price_{2015}$ = 5 000 x \$2 = \$10 000
Real GDP_{2016} = $Quantity_{2016}$ x $Price_{2015}$ = 6 000 x \$2 = \$12 000

The increase in real GDP from 2015 to 2016 = \$12 000 - \$10 000 = \$2 000

$$Growth\ rate\ in\ real\ GDP\ from\ 2015\ to\ 2016$$
$$= \frac{Change\ in\ real\ GDP\ from\ 2015\ to\ 2016}{Real\ GDP_{2015}} \times 100$$
$$= \frac{\$2\ 000}{\$10\ 000} \times 100 = 20\%$$

Based on this the correct alternative is [5].

2.11 Gross domestic product (GDP) is calculated as follows:

Item	Amount (Z)
Consumption expenditure by households	10 000
Plus Expenditure by government	8 000
Plus Gross capital formation	5 000
Plus Exports of goods and services	4 000
Minus Imports of goods and services	3 000
GDP	24 000

Gross domestic expenditure (GDE) is calculated as follows:

Item	Amount (Z)
Consumption expenditure by households	10 000
Plus Expenditure by government	8 000
Plus Gross capital formation	5 000
GDE	23 000

Therefore, the correct alternative is [5].

2.12 The limitations of using the GDP as a measurement of economic growth and welfare are discussed in section 6.2.5. Though GDP is not a perfect measure, it is still the best measure we have.

The fact that GDP excludes unpaid labour, such as housewives labour, is a shortcoming. Option a is correct. More leisure time improves the welfare of a population, but this cannot be reflected in the GDP. Option b is correct. Environmental degradation and resource depletion will, in the long run, be detrimental to the welfare of the country's population, but this is not reflected in the GDP. Option c and d are correct. GDP does not include imports (imports are subtracted to calculate GDP). Therefore, this cannot be regarded to be a limitation of GDP.

It can be argued that imported goods can contribute to the welfare of the population and should be considered when measuring welfare. However, as GDP excludes imports, option e is not correct.

The correct alternative is [2].

2.13 This question tests your insight regarding what the CPI is. The CPI is an index which provides an indication of the changes in the price level of goods and services in a particular country. The nominal income level tells us what the income was at current prices, but, as changes in prices are included in this figure, we cannot say which part of the increase is due to an increase in prices and which is due to an actual increase in real production. To determine this, we have to use the CPI (or any other indicator of price changes, but here we are provided with the CPI). We divide the nominal income level by the CPI for every year and multiply by 100 and this provides us with the real income level. The real income level is a better indicator of purchasing power as the effect of an increase in prices has now been taken out. The following table shows the real income level for each year. It is calculated as follows for each year and rounded to the closest full rand:

$$Real\ income\ level = \frac{Nominal\ income\ level}{CPI} \times 100$$

Year	2000	2005	2010	2015
CPI	85	92	100	105
Nominal income (in Z 000)	98 543	102 543	105 987	106 876
Real income level (in Z 000)	115 933	111 460	105 987	101 787

As you can see from the table the real income level in Country X was the highest in the year 2000.

The correct alternative is [1].

2.14 The GDP deflator, the CPI and the PPI are all indexes which can be used to calculate the inflation rate of the rate of change in the general price level. However, the index itself does not denote the increase or decrease in the general price level; they are mere indexes which are used to calculate the inflation rate or the change in the general price level.

The only correct alternative is [4].

2.15 The unemployment rate is calculated as follows:

$$Unmeployment\ rate = \frac{Number\ of\ unemployed\ persons}{Size\ of\ the\ labour\ force} \times 100$$

The size of the labour force is calculated as follows:

$$Size\ of\ labour\ force = Number\ of\ employed\ persons + number\ of\ unemployed\ persons$$

The size of the labour force in Country X is therefore as follows:

$$Size\ of\ labour\ force\ in\ Country\ X = 15\ 000\ 000 + 5\ 000\ 000 = 20\ 000\ 000$$

Now we can calculate the unemployment rate in Country X:

$$Unmeployment\ rate\ in\ Country\ X = \frac{5\ 000\ 000}{20\ 000\ 000} \times 100 = 0{,}25 \times 100 = 25\%$$

The correct alternative is [2].

2.16 When employment opportunities decrease, due to a change in the types of industries that exist in a country, this is a structural change in the economy of that country and, therefore, we call this structural unemployment. This is a difficult type of unemployment to address, as the persons who were employed in the dying industry often has to be retrained in order to be employed in other sectors in the economy. Therefore, option d is correct.

There will also be some persons, such as accountants, human resource managers, security personnel, etcetera, who will be able to find employment in other sectors, as their training and experience is not only used in the coal mining industry. The will experience frictional unemployment. Therefore, option a is also correct.

Seasonal unemployment refers to persons who are only employed during a certain time of the year or during certain production phases. These include, for example, persons who assist farmers during the harvesting season or persons who work as extra waiters during the holiday season. The closing of the coal mines is not a seasonal event and therefore option b is not correct.

Cyclical unemployment refers to a decrease in employment due to a lack of demand, which is due to the cycle which the economy is experiencing. When aggregate demand in the increases, demand for these workers increase again and they may be employed again. In this case, demand for coal is not going to increase again in the future, as the decrease is not due to the economic cycle, but due to a change in the type of energy that is preferred. Therefore, option c is not correct.

The correct alternative is [4].

2.17 The curves shown in figure 2.1 are Lorenz curves, which indicate the income distribution in a certain country at a particular point in time.

The correct alternative is [3].

2.18 The further away from the origin a Lorenz curve lies, the more unequal the income distribution represented by that curve. Therefore, the income distribution represented by curve (a) is the least unequal and the income distribution represented by curve (d) is the most unequal. Therefore, if curve (a) represents 2016 and curve (d) represent 2010, it means that the income distribution in this country became *more equal* (moved closer to the line of perfect equality) from 2010 to 2016. Statement [1] is, therefore, not correct.

Similarly, income distribution represented by curve (b) is more equal than income distribution represented by curve (c), therefore, if curve (c) represents Country Y and curve (b) represents Country X, income distribution in Country X is *more equal* than in Country Z. Statement [2] is, therefore, correct.

The Gini coefficient is calculated by dividing the area between the line of equality and the Lorenz curve by the total area of the triangle below the line of perfect equality. Thus, the Gini coefficient for a Lorenz curve lying closer to the origin (such as a) is *smaller* than the Gini coefficient for a curve that lies further from the origin (such as c). Therefore, statement [3] is incorrect.

Similarly, the Gini coefficient for curve b will be smaller than the Gini coefficient for curve c; thus, if curve b represents Country A and curve d represents Country B, the Gini coefficient for Country A is *smaller* than the Gini coefficient for Country B. Thus, statement [4] is not correct.

The correct statement is [2].

2.19 Business cycles are described and discussed in section 7.5. It refers to periods of economic expansion (upswings) and economic contraction or recession/depression (downswings). Therefore, statement [5] is correct.

In accounting, we find the term "financial cycle", which refers to a particular period for which accounts are set up. Do not confuse this term with "business cycle". If you choose statements [1] or [2] as the correct alternative, you may have made this mistake.

During periods of expansion and recession, business will most likely experience changes in their income and profit levels. This is, however, a symptom of an expansion or recession phase and does not explain what a business cycle is or provide a definition for this term. Therefore, statements [3] and [4] are not correct.

The only correct statement is [5].

2.20 GDP per capita is determined by dividing the total GDP or value of production in country by the size of the total population. The total population includes those of working age, children and the elderly. If the percentage of the population that consists of older people that are no longer working increases, it means that a smaller percentage of the total population is now working. If the GDP per workers remains constant, it means that less is now being produced, as there are fewer working persons. The size of the population has not changed, therefore, the GDP per member of

the population (i.e. the GDP per capita) is shrinking. The correct option is [3]. Although we do not have enough information to calculate the exact size of the GDP per capita, we have enough information to predict what the trend will be. Therefore, option [4] is not correct.

The correct alternative is [3].

3 DISCUSSION OF ASSIGNMENT 03, SECOND SEMESTER 2018

Unless otherwise stated, all page and section references are references to the study guide for ECS1500.

3.1 Different persons have different views on what this means. However, economists have to provide the information to make sure that decisions are taken that will ensure that this outcome comes about. Therefore, it is important that you understand what this phrase refers to.

If the economy changes from a capitalist to a socialist economy, this would imply a radical economic change. However, if we read the speeches of politicians and ministers that are advocating radical economic transformation it is clear that a total move away from capitalism towards socialism is not on the cards. This is, in the author's opinion, a good thing, as several countries in the world that experimented with socialism showed us that this is not a policy that results in economic growth and an increase in welfare of the whole population. Alternative [1] is, therefore, not correct.

Part of a policy of radical economic transformation should definitely be to encourage small business and to limit the red tape and other regulation that hinders establishment of small business ventures. However, this should never be at the expense of large business. Large businesses, such as mines and international motor manufacturing companies, employ large numbers of persons and play an important role in our economy. Some products and services cannot be provided by smaller businesses, as it may not be cost effective to do so. Therefore, radical economic transformation should encourage small business, but not at the cost of large business. Statement [2] is not correct. Decreasing regulation related to business should be part of radical economic transformation; however, that is not all that radical economic transformation should entail. Statement [4] is not correct.

Similar to large companies, large farmers play an important role in providing employment opportunities and a stable supply of fresh produce in a country. Establishing small farmers can contribute to creation of job opportunities and more equal land distribution, but it should not happen at the expense of large farmers in such a way that it results in a loss of job opportunities and a decrease in fresh produce in the country. Radical economic transformation should be aimed at creating employment opportunities and a more equal income distribution, which will result in a higher standard of living for all in the country. Therefore, statement [3] is not correct, but statement [5] is correct.

The only correct alternative is therefore [5].

3.2 The balance on the government's budget is determined as follows:

> Total government revenue (taxes plus other sources of revenue) *minus* government expenditure

If the government expenditure exceeds the government revenue, there will be a deficit on the government's budget. If government revenue exceeds government expenditure, there will be a surplus on the government's budget. When government revenue is equal to government expenditure, the government's budget will be balanced. Therefore, option a and c are incorrect and option b is correct.

If there is a deficit on the government's budget, this has to be financed by borrowing. The government can borrow locally or in the foreign markets, but, in both cases, government debt will increase. Therefore, option d is also correct.

The correct alternative is, therefore, [5].

3.3 The percentage increase in final private and government consumption expenditure can be calculated as follows:

$$Percentage\ increase\ in\ final\ private\ consumption\ expenditure$$
$$= \frac{Increase\ in\ final\ private\ consumption\ expenditure\ from\ 2011\ to\ 2016}{Level\ of\ final\ private\ consumption\ expenditure\ in\ 2011} \times 100$$
$$= \frac{(R2\ 577\ 869\text{m} - \text{R}1\ 801\ 091\text{m})}{\text{R}1\ 801\ 091\text{m}} \times 100 = \frac{R776\ 778m}{\text{R}1\ 801\ 091\text{m}} \times 100 = 43{,}13\%$$

$$Percentage\ increase\ in\ final\ private\ government\ expenditure$$
$$= \frac{Increase\ in\ final\ government\ consumption\ expenditure\ from\ 2011\ to\ 2016}{Level\ of\ final\ government\ condumption\ expenditure\ in\ 2011} \times 100$$
$$= \frac{(R887\ 830\text{m} - \text{R}600\ 566\text{m})}{\text{R}600\ 566\text{m}} \times 100 = \frac{R287\ 264m}{\text{R}600\ 566\text{m}} \times 100 = 47{,}83\%$$

The percentage increase in final government consumption expenditure from 2011 to 2016 was thus larger than the increase in final private consumption expenditure during the same period. This can be regarded as a worrying trend, as government expenditure has to be financed by means of taxes or borrowing. Government can't continue to increase their borrowing indefinitely, as interest has to be paid on this. The more taxes the private sector pays, the less money they have available to spend to stimulate the economy. If the economy does not grow, less taxes will be available to fund government expenditure, which will ultimately mean that government expenditure will have to be cut back, and this may affect growth negatively.

The correct answer is [2] as the statement is false.

3.4 The contribution of income tax to total tax for each year is calculated as follows:

$$\frac{Income\ tax}{Total\ tax} \times 100$$

The contribution of value added tax to total tax for each year is calculated as follows:

$$\frac{Value\ added\ tax}{Total\ tax} \times 100$$

In the following table we show the percentage contributions by income tax and value added tax:

	2011	**2016**
Income tax	R359 817 m	R579 257 m
Value added tax	R183 571 m	R281 111 m
Total tax received	R656 022 m	R1 018 762 m
Percentage contribution of income tax to total tax	54,8%	56,9%
Percentage contribution of value added tax to total tax	28,0%	27,6%

From the information in the table, we can see that the percentage contribution of income tax to total tax *increased* by a little bit more than 2% from 2011 to 2016, while the percentage contribution of value added tax to total tax *decreased* by 0,4% from 2011 to 2016.

We cannot say much about these figures without taking into account the contributions by all the different types of taxes to total tax. We can, however, say that, since income tax in South Africa is progressive (i.e. richer people pay a larger percentage of total income towards income tax), an increase in income tax may contribute to a more equal income distribution. However, to really make a judgement on this, we shall have to consider the amounts of income tax contributed by persons on different income levels.

Based on the calculations which shows the percentage contributions by the two types of taxes to total tax, we can conclude that the statement for question 3.4 is true.

The correct alternative is [1].

3.5 If the marginal tax rate is higher than the average tax rate, it means that when a person's income level increase, he/she will pay a higher percentage of his/her additional income towards tax. We call this a progressive tax. This ensures that persons, who earn a higher income, pays more tax than persons who earn a lower income. This, therefore, complies with the *equity* principle and, more specifically, with the ability to pay principle, which has to do with the requirement that richer persons, who can afford to pay more towards tax, should pay more tax than poorer persons, who can afford it to a lesser degree. Therefore, option b is correct.

The neutrality principle has to do with the fact that relative prices should be disturbed as little as possible. This has more to do with indirect taxes that are levied on goods on services. However, if we regard a person's wage or salary as the price of their labour, we can argue that a progressive income tax is not neutral and will disturb the relative levels of wages and salaries. Therefore, option a is not correct.

The simplest income tax system would be one where everyone pays the same percentage tax. A progressive tax system is more difficult to administer. We can therefore not say that having such a tax system contributes to ensuring that the tax system is administratively simple – that is not the reason why it is introduced. Therefore, option c is not correct.

The correct alternative is [5].

3.6 In South Africa the main direct tax paid by households is personal income tax. Personal income tax is progressive (persons earning higher income are taxed at a higher rate); thus, direct taxes paid by households are progressive. The main indirect tax paid by households is value added tax. Value added tax is calculated as a percentage of the price of a good or service; thus, every household, regardless of their income level, pays the same amount of value added tax on a specific good or service. As poorer households usually spend a larger percentage of their income on goods and services, it means that poorer households will pay a larger percentage of their total income towards value added tax than richer households will pay. Therefore, value added tax, which is the main type of indirect tax paid by households, is mainly regressive.

The statement is, therefore, incorrect. The correct alternative is [2].

3.7 The different types of lags are explained clearly in section 8.4.

The correct alternative is [3].

3.8 Money is not the same as wealth. Money is the most liquid form in which wealth can be held, but wealth can also be held in many other forms, such as financial assets (such as shares, long-term bank deposits, bonds, etc.) or real assets (e.g. land, buildings, jewellery, etc.). Therefore, option a is not correct.

Money is a medium of exchange. This is the most important function of money. Option b is correct.

Money is a store of value. It is not the best store of value, as it will lose value when prices increase, but is the most liquid store of value, meaning that it is readily available to use in transactions. Option c is correct.

Money is not the same as income. Income is a flow concept, as it refers to amounts that are received over a time period, for example, the wage of a worker or the amounts received by a retailer for sales. Money is a stock concept and the amount of money in the economy or the amount of money held by a person can be measured at a particular point in time. Option d is not correct.

The correct alternative is [4].

3.9 The amount for long-term deposits is added to the amount for M2 money supply to calculate M3 money supply. Therefore, to determine long-term deposits, we have to subtract M2 money supply from M3 money supply:
R564 456 000 - R321 365 000 = R243 091 000

Therefore, the correct alternative is [2].

3.10 Financial instruments (such as shares or bonds) are issued by deficit units to raise funds to finance their deficit. They are sold to surplus units, who buy these instruments to earn interest and/or capital profit.

Therefore, the statement is not true, and the correct alternative is [2].

3.11 The functions of the SARB are discussed in section 9.3.1. Alternative [4] is not correct – the SARB does not administer or receive the tax paid in the country. This is a function of the South Africa Revenue Service (SARS).

The correct alternative is [4].

3.12 Financial instruments are issued in primary markets and, when these previously issued instruments are traded again, we say that they trade in the secondary market. Option a is not correct.

Short-term financial instruments are issued in the money market, while long-term financial instruments are issued in the capital market. Option b is correct.

Trading on the financial market is not restricted to a particular space or building, but can take place anywhere as long as the transaction is properly recorded and comply with all legal regulation. Trading on the JSE stock exchange takes place on a computer system and is also recorded as such. Certain financial instruments are listed and traded on the JSE system (we call these listed instruments), but other are traded on other platforms. Option c is, therefore, not correct.

The correct alternative is [5].

3.13 When the inflation rate is high, the Monetary Policy Committee of the SARB may *increase* the repo rate. This will result in increases in other interest rates in the economy as well. When interest rates are higher it is more expensive to borrow and, therefore, borrowing activity should *decrease*. Due to the fact that borrowing is now more expensive, spending in the economy is likely to decrease. Because spending is subdued, retailers and producers will find that they sell less goods and services and will therefore be less likely to increase the prices of their goods and services, or they will increase the prices at a slower rate. This will bring the inflation rate down.

Options a and b are, therefore, incorrect, while options c and d are correct.

The correct alternative is [5].

3.14 A country has absolute advantage in the production of a good, if it can produce most of that good in absolute terms. Therefore, Country B has absolute advantage in the production of both boats and cars. Option c is incorrect and option d is correct.

A country has comparative advantage in the production of a good, if it can produce a good at a lower cost (in terms of the other good that cannot be produced). The following table shows the information regarding the comparative advantage of the two countries:

Country	Number that can be produced in a week		Amount to give up (opportunity cost)	
	Boats	**Cars**	**To produce one boat**	**To produce one car**
A	100	120	120/100=1,2 car	100/120=0,83 boat
B	150	130	130/150=0,87 car	150/130=1,15 boat

Country A has to give up 1,2 cars to produce one boat, while Country B has to give up 0,88 on a car to produce one boat; thus, Country A has comparative advantage in production of cars. Country A is relatively more effective in the production of cars than Country B. Option a is correct.

Country B has to give up 1,15 boats to produce one car while Country A has to give up less (0,83 of a boat) to produce one car; thus, Country B has comparative advantage in the production of boats. Country B is relatively more effective in the production of boats than Country A. Option b is correct.

The correct alternative is [3].

3.15 In section 10.2, it is explained that countries will benefit from trade, if each country specialises in the good or service that it has comparative advantage in producing and that this will ensure maximum global output. Therefore, alternative [4] is correct.

Although it is true that firms behave more competitively if trade with foreign countries take place (because there are more competitors), this is not the main reason why countries trade. Alternative [1] is not correct.

Alternative [2] is not correct. Not all firms have access to cheap labour. This is one of the reasons why trade will be beneficial – countries, where labour is cheap, will specialise in the production of goods that are labour intensive.

Alternative [3] is not necessarily correct. Comparative advantage is not only determined by productivity of resources, but also by the relative cost of the resources. It may be that labour is so much cheaper in one country that they can still produce a good at a lower price, even if their productivity is not that high.

Alternative [5] is not correct. Not every country has an absolute advantage in the production of a particular good or service, but due to comparative advantage global production can still increase if countries specialise and trade takes place.

The correct alternative is [4].

3.16 This statement is false. The top trading partners of South Africa in terms of exports and imports are listed in tables 10.1 and 10.2. You will notice that China, Germany, the United States, India, Japan and the United Kingdom appear in both lists. In most cases, South Africa will export raw materials to these countries and will import technology and

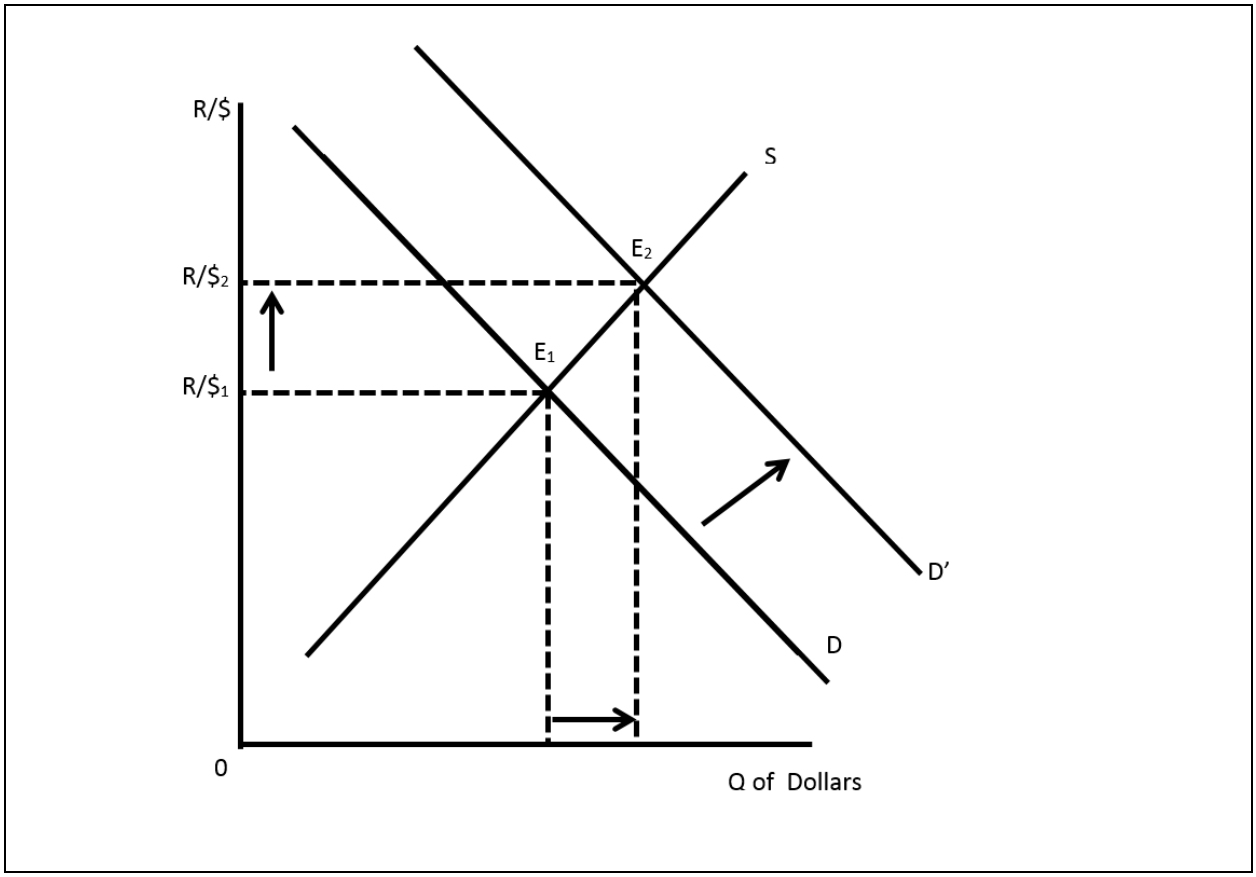
manufactured goods from these countries, although some agricultural goods may also be imported.

The correct alternative is [2].

3.17 The rightward shift of the demand curve for dollars to D' can be caused by an increase in the amount of goods and services imported from the US. Due to the increase in imports from the US, domestic businesses and individuals need more dollars to pay the US exporters. Therefore, statement [1] is incorrect and statements [2] is correct.

Due to the increase in demand for dollars, the price of dollars will increase in rand terms. This means that you will have to pay more rand per dollar after the increase in demand for dollars than previously. In figure 3.1, this can be seen by the increase in the rand price of dollars from R/$\$_1$ to R/$\$_2$. This means that the rand has depreciated against the dollar (declined in value in $ terms) and the dollar has appreciated against the rand (increased in value in terms of R). Both statements [3] and [4] are incorrect.

Figure 3.1



The correct alternative is [2].

3.18 If the rand/dollar exchange rate is R13,50 per dollar, the price of a machine with a dollar price of $15 000 can be calculated as follows:
R13,50 = $1,00
R13,50 x 15 000 = $1,00 x 15 000
R202 500 = $15 000

Therefore, option a is correct.

If the rand/pound exchange rate is R17,65 per pound, the pound value of R100 000 can be calculated as follows:
R17,65 = £1,00
R17,65/17,65 = £1,00/17,65
R1 = £0,56657
R1 x 100 000 = £0,566572 x 100 000
R100 000 = £5 665,72

Therefore, option b is not correct.

The price of a $50 tool in rand terms, given the exchange rate of R13,50 = $1,00, can be calculated as follows:
R13,50 = $1,00
R13,50 x 50 = $1,00 x 50
R675 = $50

The price of a £40 tool in rand terms, given the exchange rate of R17,65 = £1,00, can be calculated as follows:
R17,65 = £1,00
R17,65 x 40 = £1,00 x 40
R706 = £40

In rand terms, the tool is cheaper if it is bought from the US company. Therefore, statement c is correct.

The correct alternative is [3].

3.19 The balance on the current account for Country X for the year 2017 can be calculated as follows:

Item	**Amount (Z)**
Merchandise exports	150 000
Minus Merchandise imports	130 000
Minus Net gold imports	45 000
Plus Service receipts	120 000
Minus Payments for services	100 000
Plus Income receipts	75 000
Minus Income payments	95 000
Plus Current transfers	-43 000
Balance on the current account	**-68 000**

All amounts that are received in the country from foreigners are added together and all amounts that are paid to foreigners are subtracted. Note that this country was, unlike South Africa, a net importer of gold and, therefore, the amount of gold that was imported has to be subtracted. Current transfers were negative, in other words, it is money that flowed out of the country; thus, although we indicate that it should be added, we should really subtract it, as it is a negative number. If this figure for current transfers was positive, the amount would be added.

The correct alternative is [5].

3.20 When the rand/dollar exchange rate changes from R1,00 = $13,50 to R1,00 = $14,10, it means that the price of one rand increases from $13,50 to $14,50. Therefore, the rand became more expensive in dollar terms. The rand appreciated, while the dollar depreciated in terms of rand. Option a is correct, while option b is incorrect.

As dollars are now cheaper, goods and services purchased from the US will be less expensive for South Africans. Option c is incorrect.

As rands are now more expensive for Americans, South African goods become relatively more expensive for Americans. Option d is correct.

The correct alternative is [4].