PEARSON EDEXCEL IAL ECONOMICS · YEC11

ECONOMICS



MARK SCHEME

UNIT 1: SUPPLY

SCORE	PERCENTAGE
/150	%

STEMUP

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Mark Scheme

Q1.

Question	*Ceteris paribus,* calculate the price elasticity of supply for coffee beans. Show your workings. **Answer**	**Mark**
	Knowledge 1, Application 3 Quantitative skills assessed: **QS8:** Make calculations of elasticity and interpret the result. **QS9**: Interpret, apply and analyse information in written, graphical, tabular and numerical forms. **Knowledge** 1 mark for definition/the formula for price elasticity of supply % change in quantity supplied % change in price **Application** Up to 3 marks for calculations: • Change in quantity supplied ÷ original quantity supplied x100 -1.6 ÷ 169 x 100 = -0.9467% **(1)** • Change in price ÷ original price x100 -0.34 ÷ 1.36 x 100 = -25% **(1)** % change in quantity supplied % change in price • -0.9467 ÷ -25 = 0.04 **(1)** **NB: if correct answer (e.g. 0.04/0.038/0.0379/0.037868/ 0.0378698225) is given, award full marks regardless of working.** **NB: other appropriate working is rewarded**	**(4)**

Q2.

Question	Ceteris paribus, calculate the price elasticity of supply of wheat. Show your workings. **Answer**	Mark
	Knowledge 1, Application 3 Quantitative skills assessed: **QS8:** Make calculations of elasticity and interpret the result. **QS9**: Interpret, apply and analyse information in written, graphical, tabular and numerical forms. **Knowledge** 1 mark for definition/the formula for price elasticity of supply % change in quantity supplied % change in price **OR** 1 mark for identifying that the good has relatively price inelastic supply/The PES is inelastic as a fall in price sees quantity supplied change by a smaller percentage **(1)** **Application** Up to 3 marks for calculations: • Change in quantity ÷ original quantity x 100 45m ÷ 732m x 100 = 6.15% **(1)** • Change in price ÷ original price x 100 23.51 ÷ 152.97 x 100 = 15.37% **(1)** % change in quantity supplied % change in price • 6.15 ÷ 15.37 = 0.40 **(1)** **NB: if correct answer (e.g. 0.399995/0.40) is given, award full marks regardless of working.** **NB 0.40% is awarded 3 marks**	**(4)**

Q3.

Question Number	In 2019 Netflix increased the price of its basic subscription streaming service from $7.99 to $8.99 in the USA. It was estimated that there would be an 8% decrease in the number of consumers with Netflix subscriptions. *Ceteris paribus*, calculate the price elasticity of demand for the basic subscription for Netflix. Show your workings. Answer	Mark
	Knowledge 1, Application 3 Quantitative skills assessed: **QS8:** Make calculations of elasticity and interpret the result. **Knowledge** • 1 mark for the formula for price elasticity of demand: % change in quantity demanded % change in price **OR** • 1 mark for identifying that the good has relatively price inelastic demand/ The PED is inelastic as a rise in price sees quantity demanded change by a smaller percentage **(1)** **Application** Up to 3 marks for calculations: • Change in price ÷ original price 1 ÷ 7.99 x 100 = 12.52% **(1)** • % Change in quantity ÷ % change in price -8% ÷ 12.52% **(1)** = -0.6/-0.64/-0.639 **(1)** **NB: if correct answer (-0.6/-0.64/-0.639) is given, award full marks regardless of working.** **NB: (0.6/0.64/0.639) would be awarded 3 marks.**	**(4)**

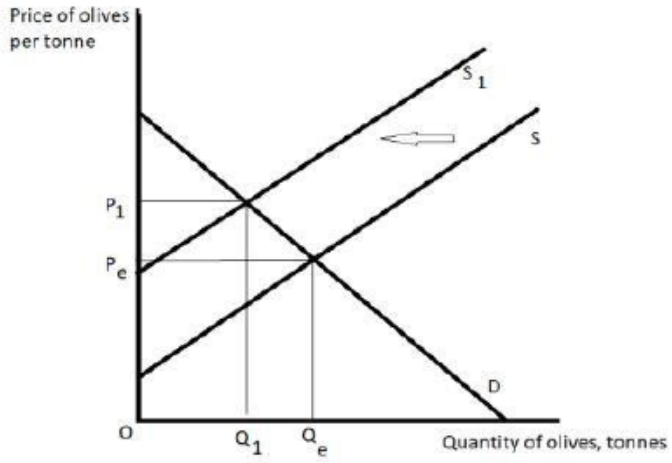
Q4.

Question	*Ceteris paribus*, calculate the price elasticity of supply for olive oil. Show your workings. **Answer**	**Mark**
	Knowledge 1, Application 3 Quantitative skills assessed: **QS8:** Make calculations of elasticity and interpret the result. **QS9**: Interpret, apply and analyse information in written, graphical, tabular and numerical forms **Knowledge** 1 mark for definition/the formula price elasticity of supply % change in quantity supplied % change in price **(1)** **Application** Up to 3 marks for calculations: • Change in quantity supplied • 3.27 - 2.93 = 0.34 Change in quantity ÷ original quantity x 100 0.34 ÷ 2.93x 100= 11.60% **(1)** • Change in price 5 145 - 4 125 = 1 020 Change in price ÷ original price x 100 1020 ÷ 4 125 x 100= 24.73% **(1)** % change in quantity supplied % change in price 11.60 ÷ 24.73 = 0.47 **(1)** **NB: if correct answer (e.g. 0.47, 0.469, 0.4690659) is given, award full marks regardless of working.** **Accept reasonable rounding from full calculation** **If 0.47% or -0.47 is given award 3 marks** **Where the proportions are calculated for the change in quantity supplied or price award 1 mark for each (e.g. 0.116 and 0.2473)**	**(4)**

Q5.

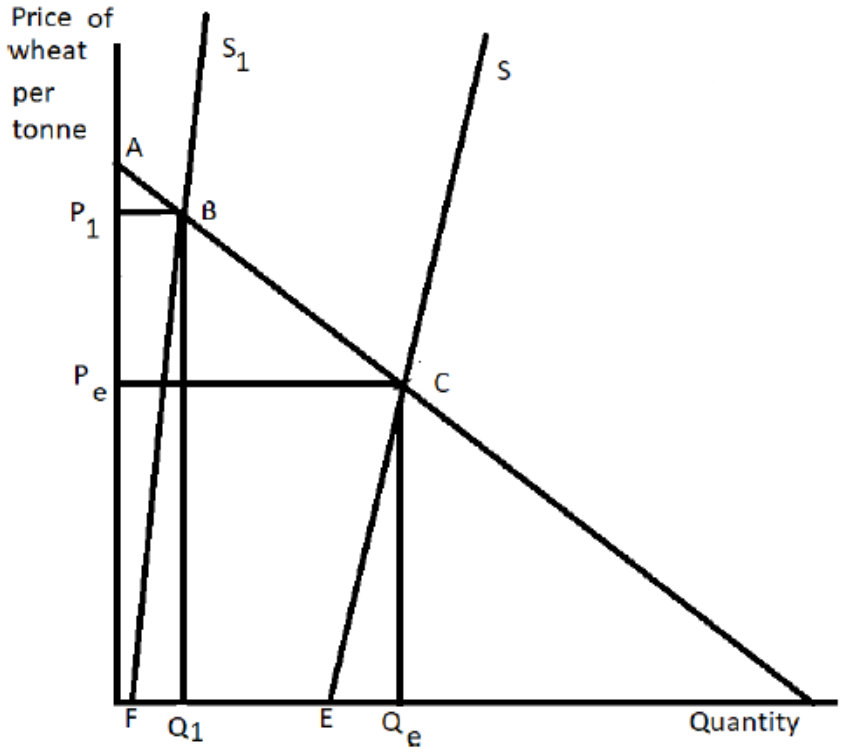
Question	Define the term 'supply'. (Extract A, line 8) **Answer**	**Mark**
	Knowledge 2 Up to 2 marks for defining 'supply', e.g.: • The amount/quantity firms are willing to sell/ The amount of goods firms make available for sale **(1)** • At any given price/in a time period/ for consumers to purchase in the market **(1)** • 'The global supply of energy produced from renewable resources is expected to increase by 8% in 2022' **(1)**	**(2)**

Q6.

Question	Draw a diagram to illustrate the likely impact of this change on the world market for olives. **Answer**	Mark
	Knowledge 1, Application 3 Quantitative skills assessed: **QS4**: Construct and interpret a range of standard graphical forms. **QS9**: Interpret, apply and analyse information in written, graphical, tabular and numerical forms. **Knowledge** 1 mark for showing knowledge on diagram • Original supply and demand curves with correctly labelled axis **(1)** **Application** Up to 3 marks for the following information included on diagram: • Original equilibrium price and quantity **(1)** • Supply curve shifted to the left **(1)** • New equilibrium price and quantity following the correct shift in supply **(1)**  	**(4)**

Q7.

Question	Evaluate the impact of the 400% increase in the cost of fertiliser on farmers and households. Include one diagram to show the impact on farmers in your answer. **Indicative content**
	QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms. **Indicative content guidance** Answers must be credited by using the level descriptors (below) in line with the general marking guidance. The indicative content below exemplifies some of the points that candidates may make but this does not imply that any of these must be included. Other relevant points must also be credited. **Knowledge, application and analysis (12 marks) – indicative content** 400% increase in costs Farmers • Increased costs of production • Supply shifts left, S to S_1 • Demand contracts • Price increases, P_e to P_1 • Quantity decreases, Q_e to Q_1 • Decreased consumer surplus, ACP_e to ABP_1 • Decreased producer surplus • Some may exit the market as profits fall • If less fertiliser is used, productivity may fall leading to a fall in income for farmers



Households

- 38% increase in global food price index
- Pay more in farm shops/for food in supermarkets
- Consumer surplus falls
- Food less affordable
- Demand for food very price inelastic meaning that consumers spend a higher proportion of their income on food
- Less income left to spend on other (non-food) goods and services
- Decrease demand for other goods e.g. electronics and entertainment

NB Maximum Level 3 if farmers or households omitted

NB Maximum Level 3 if no relevant diagram drawn

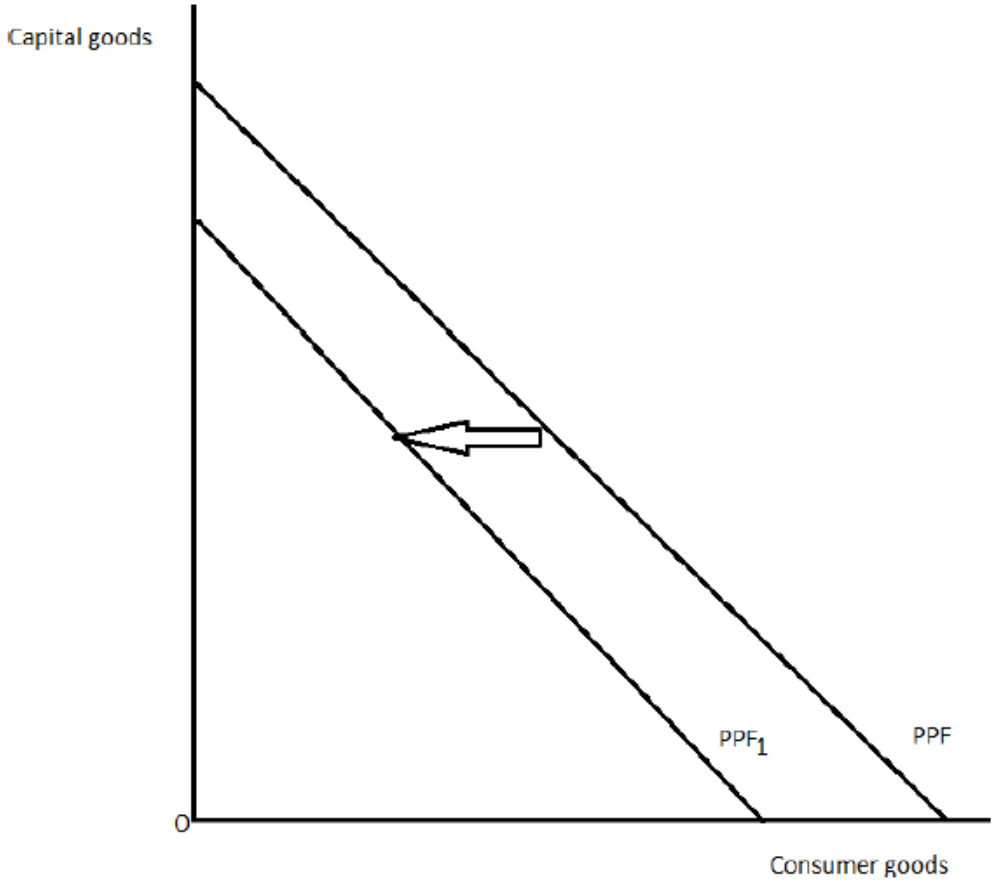
Level	Mark	Descriptor
	0	No rewardable material.
Level 1	1–3	Displays isolated, superficial or imprecise knowledge and understanding of economic terms, principles, concepts, theories and models. Use of generic material or irrelevant information or inappropriate examples. Descriptive approach, which has no chains of reasoning.
Level 2	4–6	Displays elements of knowledge and understanding of economic terms, principles, concepts, theories and models. Limited application of knowledge and understanding to economic problems in context. A narrow response or superficial, only two-stage chains of reasoning in terms of cause and/or consequence.
Level 3	7–9	Demonstrates accurate knowledge and understanding of economic terms, principles, concepts, theories and models. Ability to apply knowledge and understanding to some elements of the question. Some evidence and contextual references are evident in the answer. Analysis is clear and coherent. Chains of reasoning in terms of cause and/or consequence are evident but they may not be developed fully or some stages are omitted.
Level 4	10–12	Demonstrates accurate and precise knowledge and understanding of economic terms, principles, concepts, theories and models. Ability to link knowledge and understanding in context using appropriate examples which are fully integrated to address the broad elements of the question. Analysis is clear, coherent, relevant and focused. The answer demonstrates logical and multi-stage chains of reasoning in terms of cause and/or consequence.

	Evaluation (8 marks) – indicative content • Magnitude of the increase in fertiliser costs is significant so the impact on costs is large • The magnitude of the increase in the global food price index is much smaller than the increase in the cost of fertiliser/represents significant costs to households • Depends on the proportion of total production costs that are accounted for by fertiliser • The impact will depend on how long the prices remain high • Organic farmers who do not use fertiliser will benefit as their competitors producing non-organic good will suffer • Depends on how other costs change • Use of fertiliser may fall- reducing external costs of production- impact on wildlife • Farmers may absorb some of the increases in costs and not pass on price increases • Price elasticity of demand- if inelastic there will be only small changes in quantity • Impact greatest on low-income households as food costs will make up greater proportion of income • Government policy can alleviate the issue- accept specific examples

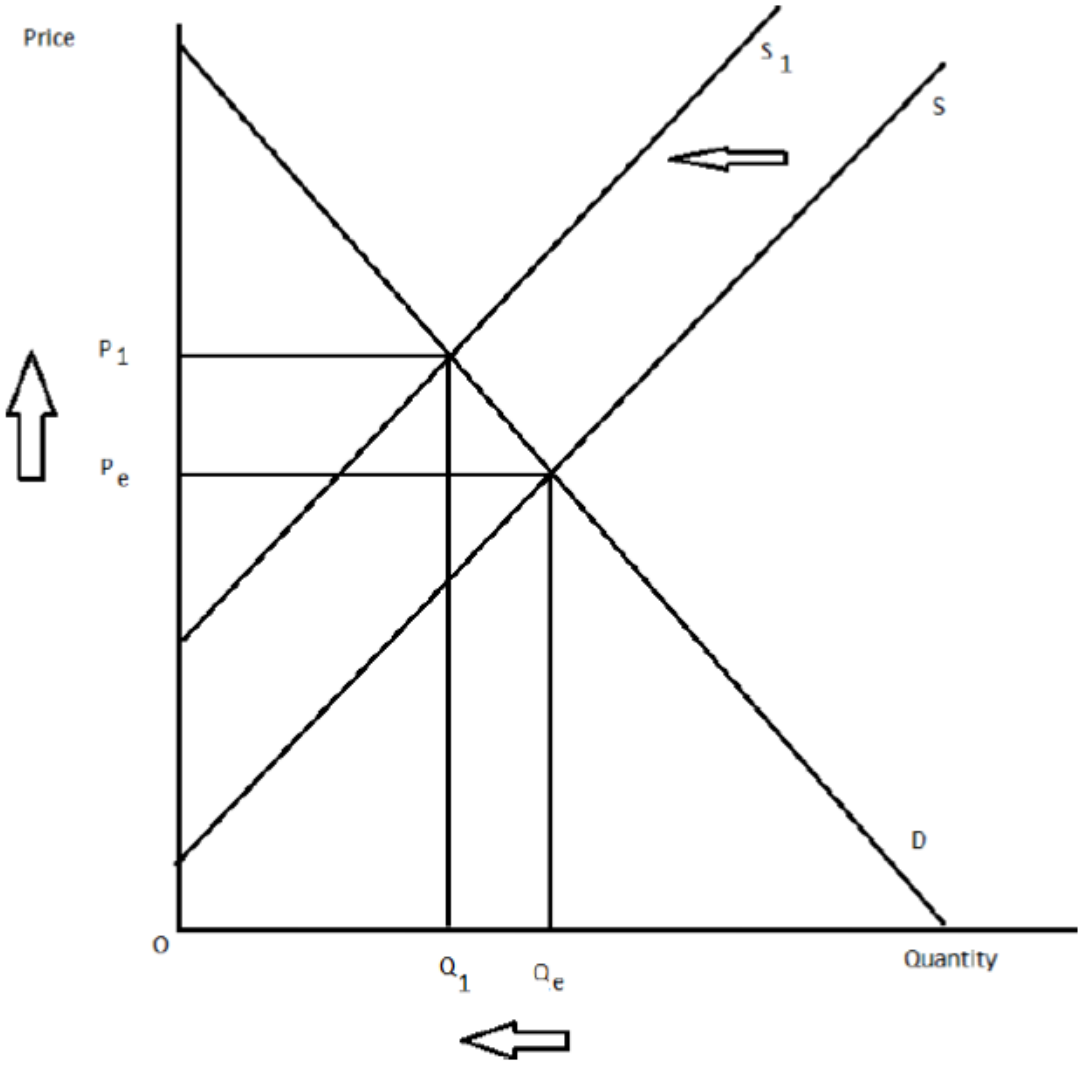
Level	Mark	Descriptor
	0	No rewardable material.
Level 1	1–3	Identification of generic evaluative comments. No supporting evidence/reference to context. No evidence of a logical chain of reasoning.
Level 2	4–6	Evidence of evaluation of alternative approaches. Some supporting evidence/reference to context. Evaluation is supported by a partially-developed chain of reasoning.
Level 3	7–8	Evaluation recognises different viewpoints and/or is critical of the evidence, leading to an informed judgement. Appropriate reference to evidence/context. Evaluation is supported by a logical chain of reasoning.

Q8.

Question	According to a German insurance company, global natural disasters have become more common in recent years. For example, there was an increase in natural disasters from 400 in 1990 to 820 in 2019. Evaluate the microeconomic effects of an increase in the number of natural disasters. Include at least one appropriate diagram in your answer. Indicative content
	Quantitative skills assessed **QS4**: Construct and interpret a range of standard graphical forms **QS9**: Interpret, apply and analyse information in written, graphical, tabular and numerical forms. **Indicative content guidance** Answers must be credited by using the level descriptors (below) in line with the general marking guidance. The indicative content below exemplifies some of the points that candidates may make, but this does not imply that any of these must be included. Other relevant points must also be credited. **Knowledge, application and analysis (12 marks) – indicative content** • Natural disasters include earthquakes, flooding, monsoons, tornados, wildfires etc. • Increased number of natural disasters from 400 to 820 between 1990 and 2019 • Production possibility frontiers in countries affected will be shifted inwards • Reducing productive potential of these countries



- Destruction of schools, hospitals, and power stations will reduce productive potential
- Supply in markets affected will be reduced- e.g. if crops are destroyed in a flood



- This will result in an increase in prices for these items as they are more scarce
- This will result in a reduction in quantity as less can be produced
- Some sectors will see increased demand and output-e.g. tents, blankets etc.
- Increased costs to insurance companies
- Financial loss to individuals if insurance pay-outs below value of items e.g. house rebuild costs

NB Award maximum of Level 3 if no diagram is included

Level	Mark	Descriptor
	0	No rewardable material.
Level 1	1–3	Displays isolated, superficial or imprecise knowledge and understanding of economic terms, principles, concepts, theories and models. Use of generic material or irrelevant information or inappropriate examples. Descriptive approach which has no chains of reasoning.
Level 2	4–6	Displays elements of knowledge and understanding of economic terms, principles, concepts, theories and models. Limited application of knowledge and understanding to economic problems in context. A narrow response or superficial, only two-stage chains of reasoning in terms of cause and/or consequence.
Level 3	7–9	Demonstrates accurate knowledge and understanding of economic terms, principles, concepts, theories and models. Ability to apply knowledge and understanding to some elements of the question. Some evidence and contextual references are evident in the answer. Analysis is clear and coherent. Chains of reasoning in terms of cause and/or consequence are evident but they may not be developed fully or some stages are omitted.
Level 4	10–12	Demonstrates accurate and precise knowledge and understanding of economic terms, principles, concepts, theories and models. Ability to link knowledge and understanding in context, using appropriate examples which are fully integrated to address the broad elements of the question. Analysis is clear, coherent, relevant and focused. The answer demonstrates logical and multi-stage chains of reasoning in terms of cause and/or consequence.

	Evaluation (8 marks) – indicative content • There is no indication of the magnitude of the natural disasters- to determine the impact • Size of the natural disaster will determine the size of reductions in supply or movement inwards of PPF e.g., more damaging earthquakes with epicentre in populous areas more damaging • The Government is likely to step in to support areas affected- reducing impact on insurance markets and individuals • Subsidies paid to support reconstruction, increase supply, lowering price and increasing quantity • International support in terms of people and resources may reduce issues • Consideration of difference between short-run and long-run microeconomic effects • In the long-run resilience to natural disasters may improve- e.g., flood defences

Level	Mark	Descriptor
	0	No rewardable material.
Level 1	1–3	Identification of generic evaluative comments. No supporting evidence/reference to context. No evidence of a logical chain of reasoning.
Level 2	4–6	Evidence of evaluation of alternative approaches. Some supporting evidence/reference to context. Evaluation is supported by a partially-developed chain of reasoning.
Level 3	7–8	Evaluation recognises different viewpoints and/or is critical of the evidence, leading to an informed judgement. Appropriate reference to evidence/context. Evaluation is supported by a logical chain of reasoning.

Q9.

Question Number	With reference to Extract A, explain **one** factor that is likely to influence the price elasticity of supply for cocoa beans.	Mark
	Knowledge 2 Application 2 **Knowledge** Up to 2 marks for relevant definitions • The responsiveness of quantity supplied to a change in the price **(1)**. **OR** • Formula for PES: $\frac{\%\text{ change in quantity supplied}}{\%\text{ change in price}}$ **(1)** • Elastic supply is where elasticity is greater than 1/ where a change in price will see a greater percentage change in quantity supplied **(1)**. • Inelastic supply is where elasticity is between 0 and 1/ where a change in price will see a smaller percentage change in quantity supplied **(1)**. **Application** Up to 2 marks for application to cocoa production, e.g.: • Stocks being 27.3% higher than in 2016 **(1)** so cocoa can be supplied from these stocks if the price rises so elastic **(1)**. • It takes four to five years for cocoa trees to reach maturity **(1)** so it will take a long time to increase supply of cocoa so inelastic **(1)**. • Cocoa can only be grown near the equator **(1)** so it is difficult to increase supply making it inelastic **(1)**.	**(4)**

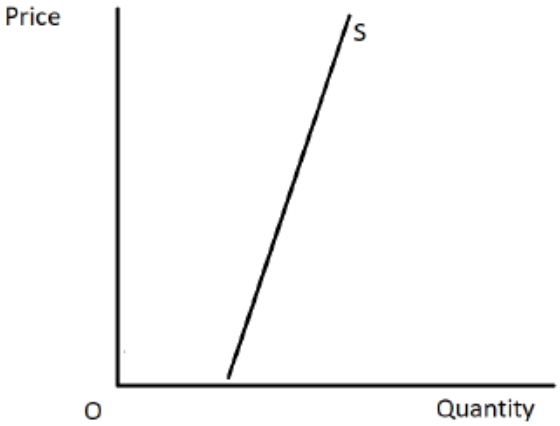
Q10.

Question Number	With reference to Extract A, explain **one** factor that is likely to influence the price elasticity of supply for sugar. Answer	Mark
	Knowledge 2 Application 2 **Knowledge** 1 mark for definition or formula of PES: % change in quantity supplied % change in price **Or** definition of price elastic or inelastic supply **(1)** 1 mark for identification of one factor: • Storage capacity • Time it takes sugar crops to reach maturity • Number of producing countries • Ease of switching production • Ability to store good **(1)** **Application** Up to 2 marks for application: • Excess supply is 17 million tonnes **(1)** so there will be stocks of sugar making supply more elastic **(1)** • Large quantities being held in storage **(1)** which can be released quickly making supply more elastic **(1)** • 119 countries grow sugar **(1)** suggesting supply can be increased in response to a change in price, so supply is relatively elastic **(1)** • It takes one year in warm countries to grow sugar **(1)** suggesting supply is relatively elastic **(1)** • It takes two years in cooler countries to grow sugar **(1)** suggesting supply is relatively inelastic **(1)**	**(4)**

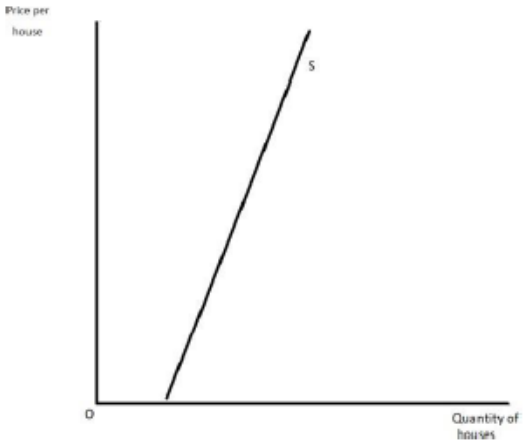
Q11.

Question	With reference to Zimbabwe, explain the difference between a 'specific tax' and an 'ad valorem tax'. **Answer**	**Mark**
	Knowledge 2, Application 2 **QS9**: Interpret, apply and analyse information in written, graphical, tabular and numerical forms. **Knowledge** 1 mark for definition of specific tax e.g.: • A fixed amount/set amount of tax added on a particular good/where there would be a parallel shift in supply **(1K)** Reward correctly drawn diagram clearly identified as specific 1 mark for definition of ad valorem tax • A percentage tax based on the price of the item/ where there would be a pivot of the supply curve **(1K)** Reward correctly drawn diagram clearly identified as ad valorem **Application** Up to 2 marks for applying to stem e.g.: • Tax on energy drinks of $0.05 per litre/smartphones of $50 per device are specific **(1AP)** • VAT (consumption tax) raised from 14.5% to 15% is ad valorem **(1AP)**	**(4)**

Q12.

Question	Explain what is meant by the term 'inelastic supply'. Refer to Figure 1 and Extract A in your answer. **Answer**	Mark
	Knowledge 2 Application 2 **Knowledge** Up to 2 marks for definitions of inelastic supply: • Where the price elasticity of supply is between 0 and 1 **(1)** • Where an increase in price leads to a smaller proportionate increase in quantity supplied **(1)** • Diagram to shows inelastic supply **(1)**  **(1)** **Application** 1 mark for application to Figure 1: • In Madagascar the supply is price inelastic at +0.48 **(1)** • In Indonesia the price elasticity of supply is +0.52 **(1)** • Vanilla from Madagascar has more inelastic supply than Indonesia at +0.48 **(1)** • Vanilla from Indonesia also has inelastic supply although it is more elastic than Madagascar **(1)** • The elasticities of supply of vanilla from Madagascar and Indonesia are both between 0 and 1 making them inelastic **(1)** 1 mark for application to Extract A • 'it takes 3 years for the vanilla crop to mature' showing inelastic as takes time to supply **(1)** • 'Few other countries have the climate to be able to grow the crop' so it is not easy for other countries to supply the crop **(1)** • 'some farmers will not see their vanilla crops recover fully until 2020' showing it takes time for supply to adjust/respond **(1)**	**(4)**

Q13.

Question	With reference to Extract B, explain why the supply of new houses is likely to be price inelastic. **Answer**	Mark
	QS8: Make calculations of elasticity and interpret the result. **QS9**: Interpret, apply and analyse information in written, graphical, tabular and numerical forms. **Knowledge 2 Application 2** **Knowledge** Up to 2 marks for understanding of inelastic supply: • Price inelastic supply is where a change in price results in a less than proportionate change in quantity supplied **(1)** • Supply is not price sensitive **(1)** • Where PES is between 0 and 1 **(1)** • Supply cannot respond quickly to a change in price **(1)** • Diagram to show inelastic supply **(1)** 	

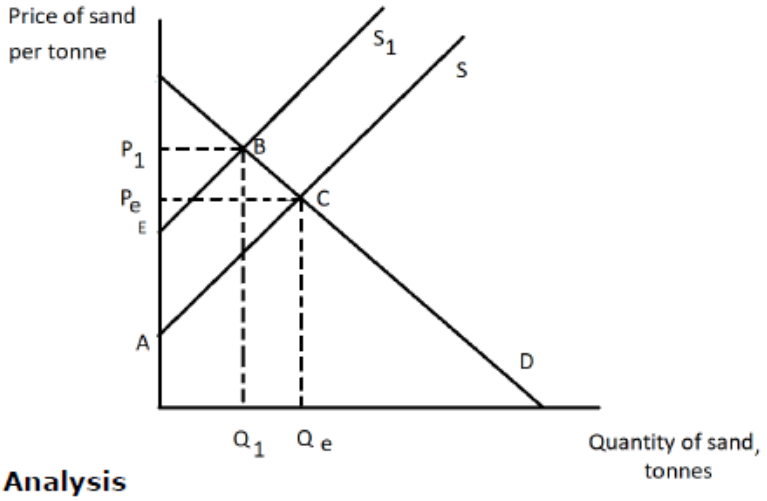
	Application Up to 2 marks for application: • June 2018 to July 2020 the Government built 6 000 homes **(1)** • There is much paperwork needed to obtain planning permission **(1)** • Local authorities limit the land on which houses can be built **(1)** • There is a shortage of over 55 000 construction workers **(1)**	**(4)**

Q14.

Question	With reference to Extract A, examine **two** likely effects of an increase in the price of copper on plumbing firms that replace water pipes in customers' homes. **Answer**	Mark
	QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms **Knowledge 2, Application 2, Analysis 2, Evaluation 2** **Knowledge and Analysis** Up to 2 marks for identifying two effects and up to 2 marks for linked explanations, e.g.: • Plumbing firms will experience increased costs **(1K)** so supply will shift left/decrease **(1An)** • Producer surplus will decrease **(1K)** as price rises and quantity falls **(1An)** • Plumbing firms may substitute to cheaper alternatives **(1K)** which may reduce the quality of the plumber's job **(1An)** • Plumbing firms may experience reduced profits **(1K)** as a result of higher costs if they use copper piping **(1An)** • Plumbers may have to increase their prices **(1K)** resulting in a decrease in demand **(1An)**	

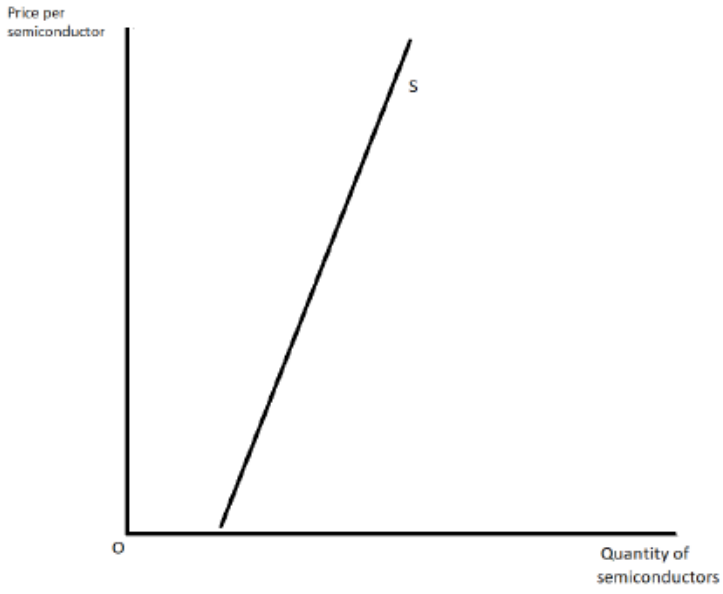
	Application Up to 2 marks for reference to Extract A/data • 44% increase in price of copper/price increase from below $5 100 to $7 100 **(1)** • Most plumbers prefer to use copper pipes/costs of copper pipes will rise/price of copper pipes increase significantly in the future **(1)** • Reward up to two marks for relevant diagram **Evaluation** Up to 2 marks for evaluative comments, e.g.: • Magnitude of costs- a 44% copper price increase is substantial and could increase costs considerably **(1+1)** • Depends on how important copper pipes are as a proportion of total costs **(1+1)** • Depends on how much the copper pipe manufacturer absorbs (price elastic demand)/passes on the increase in costs (price inelastic demand) **(1+1)** • Plumbing firms prefer copper pipes so it is very likely they will avoid substituting to alternatives **(1+1)** • Depends on the price elasticity of demand for plumbing services, if inelastic then revenue or profit may fall **(1+1)** • Plumbers may have stockpiled copper pipes so will not experience the rise in costs **(1+1)**	**(8)**

Q15.

Question Number	In Ho Chi Minh City, Vietnam, the price of sand increased from VND510 000 to VND695 000 per cubic metre between April and May 2017. This was caused by reduced supply from Vietnamese mining companies. Explain the likely impact of this change on producer surplus in the market for sand. Illustrate your answer with a diagram.	Mark
	Knowledge 1, Application 1, Analysis 2 Quantitative skills assessed: **QS4**: Construct and interpret a range of standard graphical forms **Knowledge** 1 mark for defining producer surplus • Producer surplus the difference between the price of a good and the price willing to sell for / the gap between the equilibrium price and supply curve/profit generated by the firm **(1)** **Application** 1 mark for the following diagram, showing supply falling:  **Analysis** 1 mark for original producer surplus: • **ACP$_e$ (1).** 1 mark for new producer surplus: • **EBP$_1$ (1).** Award only 1 mark if candidate refers to a reduction in producer surplus.	**(4)**

Q16.

Question	With reference to the second paragraph of Extract A, explain the phrase 'the supply of semiconductors is inelastic.' **Answer**	Mark
	QS8: Make calculations of elasticity and interpret the result. **QS9**: Interpret, apply and analyse information in written, graphical, tabular and numerical forms. **Knowledge 2 Application 2**	

	Knowledge 2 marks for understanding of inelastic supply: • Inelastic supply is where a change in price results in a less than proportionate change in quantity supplied **(1)** • Where PES is between 0 and 1 **(1)** • Supply cannot respond quickly to a change in price **(1)** • Percentage change in price is greater than the percentage change in quantity supplied **(1)** • Diagram to show (perfectly or relatively) inelastic supply **(1)**  **Application** Up to 2 marks for application: • Operating at full capacity **(1)** • Struggled to respond to increased demand **(1)** • Semiconductor manufacturers will take time for additional capacity to become operational **(1)**	**(4)**

Q17.

Question	Quantitative skills assessed	Answer	Mark
	QS4: Construct and interpret a range of standard graphical forms **QS8**: Make calculations of elasticity and interpret the results **QS9**: Interpret, apply and analyse information in written, graphical, tabular and numerical forms	**The only correct answer is D** **A** is not correct because the change in price and quantity are both positive so the PES will be positive **B** is not correct because the value of PES is positive as both price and quantity increase **C** is not correct because this has been calculated using the formula the wrong way round	**(1)**

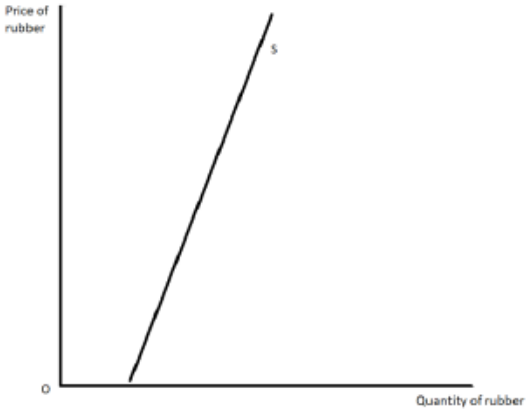
Q18.

Question Number	Quantitative skills assessed	Answer	Mark
	QS8: Make and interpret calculations of elasticity	D	**(1)**

Q19.

Question	Quantitative skills assessed	Answer	Mark
	QS8: Make calculations of elasticity and interpret the result	C	**(1)**

Q20.

Question	With reference to the first paragraph of Extract B, explain what is meant by 'the supply of rubber is price inelastic' **Answer**	Mark
	QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms. **Knowledge** 2 marks for understanding of price inelastic supply • Price inelastic supply is where a change in price results in a less than proportionate change in quantity supplied **(1)** • Where PES is between 0 and 1 **(1)** • Supply cannot respond quickly to a change in price **(1)** • Diagram to show (perfectly or relatively) price inelastic supply **(1)**  **Application** Up to 2 marks for application: • Trees only grow where there is heavy rainfall **(1)** • Trees only grow with temperatures between 20-35°C **(1)** • Thailand, Indonesia, China, West Africa supply 85% of the market **(1)** • 6 years before rubber trees produce a crop **(1)**	**(4)**

Q21.

Question	With reference to Extract B, explain whether the supply of nuclear reactors is price elastic or price inelastic. **Answer**	Mark
	QS8: Make calculations of elasticity and interpret the result. **QS9**: Interpret, apply and analyse information in written, graphical, tabular and numerical forms. **Knowledge 2 Application 2** **Knowledge** **Up to 2 marks for any two of the following:** Formula or definition of price elasticity of supply e.g. • The responsiveness of quantity supplied to a change in price **(1)** Understanding of price elastic supply, e.g. • Elastic: A value above 1/ a larger than proportional change in quantity supplied to a change in price **(1)** Understanding of price inelastic supply, e.g. • Inelastic: A value between 0 and 1/ a smaller than proportional change in quantity supplied to a change in price **(1)** **Application** 1 mark for application explicitly to Extract B: • It took on average 7.5 years to construct each nuclear reactor **/** • One reactor in Argentina took 33 years to construct **(1)** 1 mark for identifying the price elasticity of supply for nuclear reactors • price inelastic supply **(1)**	**(4)**

Q22.

Question	With reference to Figure 2, explain the term 'price inelastic supply'. Refer to the short-run and the long-run in your answer. Answer	Mark
	QS8: Make calculations of elasticity and interpret the result. **QS9**: Interpret, apply and analyse information in written, graphical, tabular and numerical forms. **Knowledge 2 Application 2** **Knowledge** 1 mark for understanding of price inelastic supply: • where the PES is between 0 and 1/a change in price causes a less than proportionate change in quantity supplied **(1)** 1 mark for understanding PES in the short-run and the long-run: • More inelastic in the short-run/less inelastic in the long-run/ becomes more elastic over time/ inelastic in both the short-run and long-run **(1)** **Application** Up to 2 marks for application: • Short-run PES +0.07 **(1)** • Long-run PES +0.57 **(1)**	**(4)**

Q23.

Question	*Ceteris paribus*, calculate the price elasticity of supply for cocoa. Show your working. **Answer**	Mark
	Knowledge 1, Application 3 Quantitative skills assessed: **QS8:** Make calculations of elasticity and interpret the result. **QS9**: Interpret, apply and analyse information in written, graphical, tabular and numerical forms **Knowledge** 1 mark for definition/the formula for price elasticity of supply % change in quantity supplied % change in price **(1)** **Application** Up to 3 marks for calculations: • Change in quantity 5 242 000 – 4 741 000 = 501 000 Change in quantity ÷ original quantity x 100 501 000 ÷ 4 741 000 x 100= 10.57% (10.5673908) **(1)** • Change in price 2 770 – 2 131 = 639 Change in price ÷ original price x 100 639 ÷ 2 131 x 100= 29.99% (29.9859221) **(1)** % change in quantity supplied % change in price 10.57 ÷ 29.99 = 0.35 **(1)** **NB: if correct answer (e.g. 0.35) is given, award full marks regardless of working.** **Accept reasonable rounding from full calculation** **Award 3 marks if percentage sign is added to the correct PES value**	**(4)**

Q24.

Question	Quantitative skills assessed	Answer	Mark
	QS2 Calculate, use and understand percentages, percentage changes and percentage point changes **QS8**: Make calculations of elasticity and interpret the result **QS9**: Interpret, apply and analyse information in written, graphical, tabular and numerical forms	**The only correct answer is A** **B** is not correct because the supply of new houses would decrease **C** is not correct because the supply of new houses would decrease **D** is not correct because the PES has been divided by the price change	**(1)**

Q25.

Question Number	Answer	Mark
	Knowledge 2, Application 2, Analysis 2, Evaluation 2 **QS9**: Interpret, apply and analyse information in written, graphical, tabular and numerical forms **Knowledge** Up to 2 marks for knowledge of PES, e.g.: • Definition of price elasticity of supply: responsiveness of quantity supplied to a change in price **(1)** • Price elastic supply- value of PES greater than 1/ where there is a more than proportionate change in supply in response to a change in price/ Diagram illustrating elastic supply **(1)** • Price inelastic supply- value of PES between 0 and 1/ where there is a less than proportionate change in supply in response to a change in price/ Diagram illustrating inelastic supply **(1)** **Application and analysis** Up to 2 marks for each reference to the given sources and linked explanations with a maximum of 4 marks e.g.: • With the stockpile any increase in price can be responded to with the release from the stockpile suggesting elastic supply **(1+1)** • Harvesting only twice a year suggests that when price rises there could be a delay before harvesting takes place, suggesting supply is inelastic **(1+1)** • Harvesting more than once a year suggests that suppliers can respond quickly to changes in price, suggesting supply is more elastic **(1+1)** • It can take 30 months from planting a tree for it to produce fruits suggesting a long delay and inelastic supply **(1+1)** • Only limited number of countries produce palm oil so when price raises only limited number of countries can increase supply meaning inelastic **(1+1)**	

	Candidates may present an argument for elastic or inelastic for KAA and be rewarded for the alternative as Evaluation. **Evaluation** Up to 2 marks for evaluative comments, e.g.: • The supply will be relatively inelastic in the short run and become more elastic in the long run as factors become variable **(1+1)** • The size of the price change will be important in determining how much supply will respond/ the larger change of price at -25.94% suggests a greater influence on supply **(1+1)** • Factors such as the weather can have a significant impact on the ability to respond with supply **(1+1)** • New technologies could help increase production enabling supply to respond better **(1+1)**	**(8)**

Q26.

Question	With reference to Extract B, explain whether the supply of phosphate rock is likely to be price elastic or price inelastic. **Answer**	Mark
	QS8: Make calculations of elasticity and interpret the result. **QS9**: Interpret, apply and analyse information in written, graphical, tabular and numerical forms. **Knowledge 2 Application 2** **Knowledge** 1 mark for identifying the correct price elasticity: • Supply is price inelastic **(1)** 1 mark for understanding price inelastic supply • A change in price results in a less than proportionate change in quantity supplied/ • The PES is between 0 and 1/ • Diagram showing inelastic supply/ • Cannot respond quickly/in the short run/difficult to respond to changes in price **(1)** **Application** Up to 2 marks for application: • 85% of the world supply comes from just five countries **(1)** • Morocco produces 70% of total production **(1)** • It is a finite resource/limited in supply **(1)**	**(4)**

Q27.

Question Number	Indicative content
	Indicative content guidance Answers must be credited by using the level descriptors (below) in line with the general marking guidance. The indicative content below exemplifies some of the points that candidates may make but this does not imply that any of these must be included. Other relevant points must also be credited. **Quantitative skills assessed** **QS2:** Calculate, use and understand percentages, percentage changes and percentage points changes. **QS8**: Make calculations of elasticity and interpret the result. **QS9**: Interpret, apply and analyse information in written, graphical, tabular and numerical forms.

	Knowledge, application and analysis (12 marks) – indicative content • Define PES - responsiveness of quantity supplied to a change in price • $1 481- $1 275= $206 • 206 ÷ 1 275 x 100 = 16.2% • 889.5 - 888.8 = 0.7 tonnes • 0.7 ÷ 888.8 x 100 = 0.079% • 0.079 ÷ 16.2 = 0.0048 • Price inelastic supply - a value between 0 and 1/where the quantity supplied is less responsive to a change in price • Price has risen by 16.2% but the quantity supplied increased by just 0.079% • The time period it takes to set up a mine is long so it will take time to increase the quantity mined • Mobility of factors of production - if output is to be increased more skilled labour is needed - it may take time to train new workers to work in the mines/Capital required to work on new mines will take time to acquire • Legal constraints - it will take time to get planning permission to set up a mine which will delay the time before output could be delayed • Capacity - if the mines are working at full capacity they would find it difficult to respond to higher prices by increasing the amount of gold mined • Ten countries supply 62% of output suggesting relatively few countries supplying gold • Limited number of countries where gold is mined limits the ability for supply to respond • There is a finite quantity of gold so there are limits to the how much can be found • There are high start-up costs associated with starting a mine that limit the ability for new firms to start mining for gold • The future global price of gold is uncertain, prices can be volatile meaning fewer firms will be willing to invest in mining gold

Level	Mark	Descriptor
	0	No rewardable material.
Level 1	1–3	Displays isolated, superficial or imprecise knowledge and understanding of economic terms, principles, concepts, theories and models. Use of generic material or irrelevant information or inappropriate examples. Descriptive approach, which has no chains of reasoning.
Level 2	4–6	Displays elements of knowledge and understanding of economic terms, principles, concepts, theories and models. Limited application of knowledge and understanding to economic problems in context. A narrow response or superficial, only two-stage chains of reasoning in terms of cause and/or consequence.
Level 3	7–9	Demonstrates accurate knowledge and understanding of economic terms, principles, concepts, theories and models. Ability to apply knowledge and understanding to some elements of the question. Some evidence and contextual references are evident in the answer. Analysis is clear and coherent. Chains of reasoning in terms of cause and/or consequence are evident but they may not be developed fully or some stages are omitted.
Level 4	10–12	Demonstrates accurate and precise knowledge and understanding of economic terms, principles, concepts, theories and models. Ability to link knowledge and understanding in context using appropriate examples which are fully integrated to address the broad elements of the question. Analysis is clear, coherent, relevant and focused. The answer demonstrates logical and multi-stage chains of reasoning in terms of cause and/or consequence.

	Evaluation (8 marks) – indicative content • Magnitude – this is a significant rise in the price of gold which may with a delay cause output to rise • Time frame – over time PES tends to become more elastic as number of mines and capacity of mines can be adjusted/in the short run only one factor of production adjusted making PES more inelastic • We do not know how much the output or price varies across other years • The weather could cause flooding impacting the ability to adjust output in a particular year • Availability of stocks - gold can be stored which would suggest that it might in fact be more elastic • Significance of determinants of PES • New technology may improve the ability for supply to respond

Level	Mark	Descriptor
	0	No rewardable material.
Level 1	1–3	Identification of generic evaluative comments. No supporting evidence/reference to context. No evidence of a logical chain of reasoning.
Level 2	4–6	Evidence of evaluation of alternative approaches. Some supporting evidence/reference to context. Evaluation is supported by a partially-developed chain of reasoning.
Level 3	7–8	Evaluation recognises different viewpoints and/or is critical of the evidence, leading to an informed judgement. Appropriate reference to evidence/context. Evaluation is supported by a logical chain of reasoning.