AS
ECONOMICS
7135/1

Paper 1 The Operation of Markets and Market Failure

Mark scheme

June 2023

Version: 1.0 Final

2 3 6 A 7 1 3 5 / 1 / M S

Mark schemes are prepared by the Lead Assessment Writer and considered, together with the relevant questions, by a panel of subject teachers. This mark scheme includes any amendments made at the standardisation events which all associates participate in and is the scheme which was used by them in this examination. The standardisation process ensures that the mark scheme covers the students' responses to questions and that every associate understands and applies it in the same correct way. As preparation for standardisation each associate analyses a number of students' scripts. Alternative answers not already covered by the mark scheme are discussed and legislated for. If, after the standardisation process, associates encounter unusual answers which have not been raised they are required to refer these to the Lead Examiner.

It must be stressed that a mark scheme is a working document, in many cases further developed and expanded on the basis of students' reactions to a particular paper. Assumptions about future mark schemes on the basis of one year's document should be avoided; whilst the guiding principles of assessment remain constant, details will change, depending on the content of a particular examination paper.

Further copies of this mark scheme are available from aqa.org.uk

SECTION A

The following list indicates the correct answers used in marking the students' responses.

KEY LIST

1	**A** (Alternative uses for resources)	**11**	**D** (Higher profits providing an incentive to increase output)
2	**A** (–0.4)	**12**	**B** (monopoly power of Fresh Co increases.)
3	**B** (G)	**13**	**B** (The social optimum output is greater than the free market output because the private benefit is less than the social benefit.)
4	**C** (opportunities for internal economies of scale.)	**14**	**A** (A reduction in labour costs)
5	**D** (involved a normative judgement.)	**15**	**D** (Demand is price inelastic and supply is price inelastic.)
6	**C** (the mean income may be higher or lower in country Z compared with country W.)	**16**	**B** (Production of healthcare addresses the basic economic questions of 'how' and 'for whom')
7	**B** (Advertising to establish a brand)	**17**	**D** (A subsidy of P_2 minus P_3 per unit)
8	**D** (2.5)	**18**	**B** (are an inferior good.)
9	**B** (£290)	**19**	**C** (Point H.)
10	**C** (consumed together with another good.)	**20**	**C** (The extent to which firms differentiate their products)

Totals
A 3
B 7
C 5
D 5

Level of response marking instructions

Level of response mark schemes are broken down into levels, each of which has a descriptor. The descriptor for the level shows the average performance for the level. There are marks in each level.

Before you apply the mark scheme to a student's answer read through the answer and annotate it (as instructed) to show the qualities that are being looked for. You can then apply the mark scheme.

Step 1 Determine a level

Start at the lowest level of the mark scheme and use it as a ladder to see whether the answer meets the descriptor for that level. The descriptor for the level indicates the different qualities that might be seen in the student's answer for that level. If it meets the lowest level then go to the next one and decide if it meets this level, and so on, until you have a match between the level descriptor and the answer. With practice and familiarity you will find that for better answers you will be able to quickly skip through the lower levels of the mark scheme.

When assigning a level you should look at the overall quality of the answer and not look to pick holes in small and specific parts of the answer where the student has not performed quite as well as the rest. If the answer covers different aspects of different levels of the mark scheme you should use a best fit approach for defining the level and then use the variability of the response to help decide the mark within the level, ie if the response is predominantly level 3 with a small amount of level 4 material it would be placed in level 3 but be awarded a mark near the top of the level because of the level 4 content.

Step 2 Determine a mark

Once you have assigned a level you need to decide on the mark. The descriptors on how to allocate marks can help with this. The exemplar materials used during standardisation will help. There will be an answer in the standardising materials which will correspond with each level of the mark scheme. This answer will have been awarded a mark by the Lead Examiner. You can compare the student's answer with the example to determine if it is the same standard, better or worse than the example. You can then use this to allocate a mark for the answer based on the Lead Examiner's mark on the example.

You may well need to read back through the answer as you apply the mark scheme to clarify points and assure yourself that the level and the mark are appropriate.

Indicative content in the mark scheme is provided as a guide for examiners. It is not intended to be exhaustive and you must credit other valid points. Students do not have to cover all of the points mentioned in the Indicative content to reach the highest level of the mark scheme.

An answer which contains nothing of relevance to the question must be awarded no marks.

The levels of response grid below should be used when marking the 25 mark questions.

Level of response	Response	Max 25 marks
5	**Sound, focused analysis and well-supported evaluation that:** • is well organised, showing sound knowledge and understanding of economic terminology, concepts and principles with few, if any, errors • includes good application of relevant economic principles to the given context and, where appropriate, good use of data to support the response • includes well-focused analysis with clear, logical chains of reasoning • includes supported evaluation throughout the response and in a final conclusion.	**21–25 marks**
4	**Sound, focused analysis and some supported evaluation that:** • is well organised, showing sound knowledge and understanding of economic terminology, concepts and principles with few, if any, errors • includes some good application of relevant economic principles to the given context and, where appropriate, some good use of data to support the response • includes some well-focused analysis with clear, logical chains of reasoning • includes some reasonable, supported evaluation.	**16–20 marks**
3	**Some reasonable analysis but generally unsupported evaluation that:** • focuses on issues that are relevant to the question, showing satisfactory knowledge and understanding of economic terminology, concepts and principles but some weaknesses may be present • includes reasonable application of relevant economic principles to the given context and, where appropriate, some use of data to support the response • includes some reasonable analysis but which might not be adequately developed or becomes confused in places • includes fairly superficial evaluation; there is likely to be some attempt to make relevant judgments but these are not well-supported by arguments and/or data.	**11–15 marks**
2	**A fairly weak response with some understanding that:** • includes some limited knowledge and understanding of economic terminology, concepts and principles but some errors are likely • includes some limited application of relevant economic principles to the given context and/or data to the question • includes some limited analysis but it may lack focus and/or become confused • includes attempted evaluation which is weak and unsupported.	**6–10 marks**
1	**A very weak response that:** • includes little relevant knowledge and understanding of economic terminology, concepts and principles • includes application to the given context which, at best, is very weak • includes attempted analysis which is weak and unsupported.	**1–5 marks**

Section B

Context 1 Oil **Total for this context: 50 marks**

2 1 *Define 'price elasticity of demand' **Extract B** (lines 5–6).*

[3 marks]

Level of response	Response	Max 3 marks
3	• A full and precise definition is given.	**3 marks**
2	• The substantive content of the definition is correct, but there may be some imprecision or inaccuracy.	**2 marks**
1	• Some fragmented points are made.	**1 mark**

Examples of acceptable definitions worth 3 marks:

(**Note:** all have some idea of extent and causation)

- a measure of the percentage (or proportionate) change/increase/decrease in the quantity demanded resulting from a (given) percentage (or proportionate) change/increase/decrease in the price of that good
- the extent to which a change in the price of a good affects the demand for the product
- the responsiveness of quantity demanded to a change in the price of that good.

Examples of a definition worth 2 marks:

(**Note:** missing either extent or causation)

- PED = $\frac{\%\text{ change in quantity demanded}}{\%\text{ change in price}}$
- the proportionate change in the demand for a good divided by the proportionate change in price
- the change in demand resulting from a change in price.

Examples of a definition worth 1 mark:

(**Note:** missing both extent and causation)

- PED = $\frac{\text{change in quantity demanded}}{\text{change in price}}$
- the change in the demand for a good divided by the change in price
- a relationship between demand and price.

MAXIMUM FOR QUESTION 21: 3 MARKS

2 2 ***Extract B*** *(lines 4–5) states: 'the average monthly price of Brent crude (one of two key oil prices) has varied from $116.52 in February 2013 to $23.34 in April 2020'.*

Calculate the oil price index for April 2020, if February 2013 is taken to be the starting point (base year) of the oil price index. Give your answer to the ***nearest whole number****.*

[4 marks]

Calculation:

$\frac{23.34}{116.52} \times 100 = 20.03089\ldots = 20$ (to nearest whole number)

Response	Max 4 marks
For the correct answer (allow reference to index/index points): 20	**4 marks**
For the correct value, not rounded to the nearest whole number **or** rounded the wrong way **or** with added/incorrect units: 20.03 **or** 21 **or** 20% (for example)	**3 marks**
For the correct value, not rounded to the nearest whole number **and** with added/incorrect units: 20.03% (for example) **OR** For the correct calculation but the wrong answer: 23.34 ÷ 116.52 × 100 **OR** For using the correct price figures but not multiplying by 100 (either the calculation or the answer): 23.34 ÷ 116.52 **or** 0.2 (for example)	**2 marks**
For the correct value taking April 2020 as the starting point (rounded or not): 499 **or** 499.2 (for example) **OR** For the correct calculation but the wrong answer taking April 2020 as the starting point: 116.52 ÷ 23.34 × 100	**1 mark**

MAXIMUM FOR QUESTION 22: 4 MARKS

2 3 *Use **Extract A (i)** to identify **two** significant features of the price of Brent crude oil over the period shown.*

[4 marks]

Award up to 2 marks for <u>each</u> significant feature identified.

Response	Max 4 Marks
Identifies a significant feature Makes accurate use of the data to support the feature identified Unit of measurement given accurately	**2 marks**
Identifies a significant feature but only one piece of data is given when two are needed **and/or** no unit of measurement is given **and/or** the unit of measurement is inaccurate **and/or** the wrong date is given	**1 mark**

If a candidate identifies more than 2 significant features, reward the best two.

Significant features include:

- the price was highest in 2013 at $109 per barrel
- the price was lowest in 2020 at $42 per barrel
- the range was $67 per barrel (from $42 to $109)
- the price was lower at the end of the period than the beginning, falling from $109 per barrel to $42 per barrel, a fall of $67 (or 61%)
- the price fell every year until 2016 from $109 per barrel to $44 per barrel (or 60%) and from 2018 to 2020 from $71 to $42 (or 41%)
- the only time that the price increased was between 2016 and 2018, from $44 to $71 (or 61%)
- the greatest fall in price was between 2014 and 2015, from $99 per barrel to $52 per barrel, a fall of $47 (or 47%)
- the greatest rise in price was between 2017 and 2018, from $54 per barrel to $71 per barrel, a rise of $17 (or 31%)
- the smallest fall in price was between 2018 and 2019, from $71 per barrel to $64 per barrel, a fall of $7 (or 10%)
- the smallest rise in price was between 2016 and 2017, from $44 per barrel to $54 per barrel, a rise of $10 (or 23%).

Note: All figures are approximate – allow a margin of error of ± $3

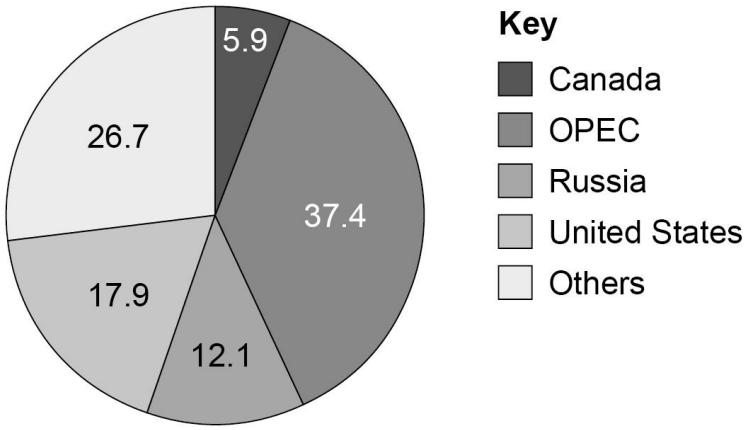
MAXIMUM FOR QUESTION 23: 4 MARKS

2 4 *Use the data in **Extract A (ii)** to complete the pie chart to show the market shares of each of the following oil producers in 2019: Canada, OPEC, Russia, the United States and Others.*

[4 marks]

The correct diagram involves five sectors, with the correct areas and labels: Canada = 5.9%; OPEC = 37.4%; Russia = 12.1%; United States = 17.9%; and Others = 26.7% and/or a key.

Market shares of leading oil producers, 2019 (%)



Response	Max 4 marks
Accurately drawn and fully labelled pie chart, ie all five areas correct plus a clear indication of which sector is which	**4 marks**
Accurately drawn pie chart, but with missing labels/key **OR** Accurately labelled pie chart but with one or two sectors out of tolerance	**3 marks**
Pie chart with missing labels/key **and** one or two sectors out of tolerance **OR** Accurately labelled pie chart but with three or four sectors out of tolerance	**2 marks**
Pie chart with one sector in tolerance with label/key **OR** All sectors labelled/key but all sectors out of tolerance	**1 mark**

Notes: The sectors can be in any order, with any starting point.
The sectors need to be named according to the country and/or a key added, but the figures do not need to be written on the chart.
A title is not required.
Allow a margin of around ± 3% points.

MAXIMUM FOR QUESTION 24: 4 MARKS

2 5 ***Extract C*** *(lines 13–14) states: 'Concerns about the impact of oil on the environment have led to the encouragement of renewable energy, such as solar, wind and tidal power'.*

Explain how the development of renewable sources of energy is likely to affect the market for oil.

[10 marks]

Level of response	An answer that:	Max 10 marks
3	• is well organised and develops one or more of the key issues that are relevant to the question • shows sound knowledge and understanding of relevant economic terminology, concepts and principles • includes good application of relevant economic principles and/or good use of data to support the response • includes well-focused analysis with a clear, logical chain of reasoning • may include a relevant diagram to support their explanation.	**8–10 marks**
2	• includes one or more issues that are relevant to the question • shows reasonable knowledge and understanding of economic terminology, concepts and principles but some weaknesses may be present • includes reasonable application of relevant economic principles and/or data to the question • includes some reasonable analysis but it might not be adequately developed and may be confused in places • may include a relevant diagram to support their explanation.	**4–7 marks**
1	• is very brief and/or lacks coherence • shows some limited knowledge and understanding of economic terminology, concepts and principles but some errors are likely • demonstrates very limited ability to apply relevant economic principles and/or data to the question • may include some very limited analysis but the analysis lacks focus and/or becomes confused • may include a diagram but the diagram is likely to be inaccurate in some respects or is inappropriate.	**1–3 marks**

Relevant issues include:

- meaning of 'market'
- renewable energy and oil as substitute goods
- impact on the demand for oil
- impact on the price and quantity sold of oil
- impact on different markets for oil, eg fuel for transport, electricity generation, manufacture of fertiliser and plastics, etc
- significance of different elasticities, eg PED, PES and XED.

MAXIMUM FOR QUESTION 25: 10 MARKS

2 6 ***Extract C*** *(lines 20–21) states: 'Unstable prices, monopoly power, environmental concerns and a vital resource – should governments intervene more in the oil industry?'*

Use the extracts and your knowledge of economics to evaluate ways in which governments could deal with the market failures in the oil industry.

[25 marks]

Areas for discussion include:

- uses and importance of oil
- oil as a finite resource
- meanings and examples of market failures in the oil industry
- recent trends in the price of oil and impact of unstable prices
- evidence and significance of monopoly power
- environmental concerns
- analysis and evaluation of taxation of oil/products using oil
- analysis and evaluation of regulation
- analysis and evaluation of subsidising alternatives to oil
- analysis and evaluation of other possible ways in which governments could deal with the market failures in the oil industry
- who gains, who loses – impact on oil exporters, oil importers, businesses, consumers, etc
- significance of elasticities
- is there a viable substitute for all uses of oil?
- recognition that different policies may be needed for different market failures
- time taken to bring about substantial changes
- importance and difficulty of dealing with other governments involved in the oil industry or with different perspectives
- equity versus efficiency
- whether there is a need for more action
- market failure versus government failure
- an overall assessment of the different ways in which governments could deal with the market failures in the oil industry.

The use of relevant diagrams to support the analysis should be taken into account when assessing the quality of the candidate's response to the question.

Use the levels mark scheme on page 5 to award candidates marks for this question.

MAXIMUM FOR QUESTION 26: 25 MARKS

Context 2 Drones **Total for this context: 50 marks**

2 7 *Define 'factors of production' **Extract F** (line 2).*

[3 marks]

Level of response	Response	Max 3 marks
3	• A full and precise definition is given.	**3 marks**
2	• The substantive content of the definition is correct, but there may be some imprecision or inaccuracy.	**2 marks**
1	• Some fragmented points are made.	**1 mark**

Examples of acceptable definitions worth 3 marks:

- resources used to produce goods and/or services
- inputs into the production process.

Examples of a definition worth 2 marks:

- economic resources
- inputs.

Examples of a definition worth 1 mark:

- something involved with output
- example(s) of a factor of production, eg land, labour, capital or enterprise.

MAXIMUM FOR QUESTION 27: 3 MARKS

2 8 ***Extract F*** *(lines 10–12) states: 'The total cost of a delivery consists of £150 for the drone and another £350 to carry out the whole operation. The drone carries food weighing 110 pounds (50 kilos), enough for 50 people for a day.'*

Calculate the average total cost of delivering food weighing one pound. Give your answer to the ***nearest penny****.*

[4 marks]

Calculation:

(£150 + £350) ÷ 110 = £4.54545… which rounds to £4.55 (to the nearest penny)

Response	Max 4 marks
For the correct answer: £4.55	**4 marks**
For the correct value, not rounded to the nearest penny **or** rounded the wrong way **or** with missing/incorrect units: £4.545 **or** £4.54 **or** 4.55 (for example)	**3 marks**
For the correct value, not rounded to the nearest penny **and** with missing/incorrect units: 4.545 (for example) **OR** For the correct calculation but the wrong answer: (£150 + £350) ÷ 110	**2 marks**
For the correct total cost: £500 **OR** For the correct calculation of either £150 ÷ 110, to the nearest penny **or** £350 ÷ 110, to the nearest penny: £1.36 **or** £3.18 **OR** For the correct calculation of the total cost of delivering food per person for a day (£500 ÷ 50) **or** per person per pound weight (£500 ÷ 110 ÷ 50) to the nearest penny: £10 **or** £0.09	**1 mark**

MAXIMUM FOR QUESTION 28: 4 MARKS

2 9 *Use **Extract D (i)** to identify **two** significant features of the worldwide sales of commercial drones over the period shown.*

[4 marks]

Award up to 2 marks for <u>each</u> significant feature identified.

Response	Max 4 Marks
Identifies a significant feature Makes accurate use of the data to support the feature identified Unit of measurement given accurately	**2 marks**
Identifies a significant feature but only one piece of data is given when two are needed **and/or** no unit of measurement is given **and/or** the unit of measurement is inaccurate **and/or** the wrong date is given	**1 mark**

If a candidate identifies more than 2 significant features, reward the best two.

Significant features include:

- sales are highest in 2023 at 1 910 000
- sales are lowest in 2016 at 110 000
- the range is 1 800 000 (from 110 000 to 1 910 000)
- sales are higher at the end of the period than the beginning, rising from 110 000 to 1 910 000, an increase of 1 800 000
- sales rose every year from 2016 to 2023, eg from 250 000 to 390 000 from 2018 to 2019
- the greatest rise in sales is between 2022 and 2023, from 1 410 000 to 1 910 000, an increase of 500 000
- the smallest rise in sales is between 2016 and 2017, from 110 000 to 160 000, a rise of 50 000.

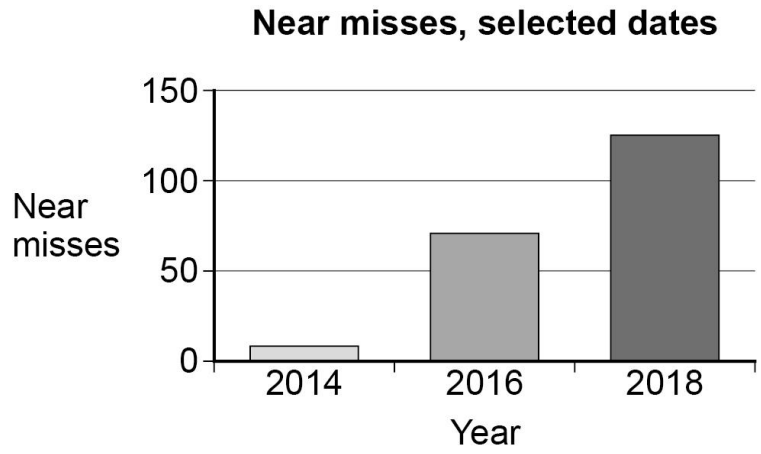
Note: All figures are approximate – allow a margin of error of ± 80 000

MAXIMUM FOR QUESTION 29: 4 MARKS

3 0 *Use the data in **Extract D (ii)** to draw a bar chart to show the number of near misses between drones and planes in the UK for the years 2014, 2016 and 2018.*

[4 marks]

The correct diagram involves three bars, with the correct height and labels: 2014 = 9; 2016 = 71; and 2018 = 125 and/or a key. There needs to be some indication that the data refer to near misses, either on the vertical axis or in a title.



Response	Max 4 marks
Accurately drawn and fully labelled bar chart, ie an indication that data relate to near misses on labelled vertical axis or in a title, with all three bars correct plus a clear indication of which bar is which	**4 marks**
Accurately drawn bar chart but with no indication that data relate to near misses ie vertical axis label (or title) missing/incorrect **and/or** no/incorrect indication of years **OR** Accurately labelled bar chart but with one bar out of tolerance	**3 marks**
Bar chart with vertical axis label (or title) missing/incorrect **and/or** no indication of years **and** one bar out of tolerance **OR** Accurately labelled bar chart but with two bars out of tolerance	**2 marks**
Bar chart with one bar in tolerance but missing/incorrect labelling **OR** All bars labelled including the vertical axis (or a title) but all bars out of tolerance	**1 mark**

Notes: A chart with gaps between the bars is expected but do not penalise one without gaps.
The bars need to be named according to the year and/or a key added, but the figures do not need to be written on the bars.
A title is not required if the vertical axis is labelled.
Allow a margin of ± 5.

MAXIMUM FOR QUESTION 30: 4 MARKS

3 1 ***Extract E*** *(lines 8–9) states: 'Drones can reach remote areas quickly and easily, saving on labour and other costs.'*

Explain how the increasing use of drones is likely to affect the market for delivery workers.

[10 marks]

Level of response	An answer that:	Max 10 marks
3	• is well organised and develops one or more of the key issues that are relevant to the question • shows sound knowledge and understanding of relevant economic terminology, concepts and principles • includes good application of relevant economic principles and/or good use of data to support the response • includes well-focused analysis with a clear, logical chain of reasoning • may include a relevant diagram to support their explanation.	**8–10 marks**
2	• includes one or more issues that are relevant to the question • shows reasonable knowledge and understanding of economic terminology, concepts and principles but some weaknesses may be present • includes reasonable application of relevant economic principles and/or data to the question • includes some reasonable analysis but it might not be adequately developed and may be confused in places • may include a relevant diagram to support their explanation.	**4–7 marks**
1	• is very brief and/or lacks coherence • shows some limited knowledge and understanding of economic terminology, concepts and principles but some errors are likely • demonstrates very limited ability to apply relevant economic principles and/or data to the question • may include some very limited analysis but the analysis lacks focus and/or becomes confused • may include a diagram but the diagram is likely to be inaccurate in some respects or is inappropriate.	**1–3 marks**

Relevant issues include:

- use of drones to deliver items and reach remote areas
- delivery workers being in derived demand to deliver items
- drones and delivery workers as substitute goods
- impact on the demand for delivery workers
- impact on the price/wage and quantity used of delivery workers
- impact of increasing use of drones on workers operating in different delivery markets, ie the impact on workers delivering different items
- significance of different elasticities of demand, eg XED between the price of delivering an item using a drone and the number of deliveries by other methods.

MAXIMUM FOR QUESTION 31: 10 MARKS

3 2 ***Extract F*** *(lines 23–24) states: 'if drones become more common, another review may be needed of what is best for all'.*

Use the extracts and your knowledge of economics to assess whether governments should encourage, discourage or do nothing more to affect the use of drones.

[25 marks]

Areas for discussion include:

- what is a drone?
- recent and predicted sales of drones
- use for commercial, leisure and military purposes, including application in different industries
- drones as a substitute or complement for other factors of production
- analysis and evaluation of impact on productivity, costs and profits of firms
- analysis and evaluation of use for healthcare and emergency aid
- analysis and evaluation of problems of drones – noise, intrusion, security issues, disruption and danger
- identification of possible market failures
- concepts of private costs, private benefits, external costs and external benefits
- possible classification as merit or demerit goods
- impact on different economic agents – consumers, workers, different businesses, etc
- analysis and evaluation of how drones could be encouraged – subsidies, tax relief, etc
- analysis and evaluation of how drones could be discouraged – regulation, tax, etc
- impact on international competitiveness
- desirability of international cooperation and agreement
- problem of rapid development requiring constant review
- market failure versus government failure
- are drones on balance good or bad?
- should some uses be encouraged and some discouraged?
- an overall assessment of whether governments should encourage, discourage or do nothing more to affect the use of drones.

The use of relevant diagrams to support the analysis should be taken into account when assessing the quality of the candidate's response to the question.

Use the levels mark scheme on page 5 to award candidates marks for this question.

MAXIMUM FOR QUESTION 32: 25 MARKS