AQA

A-LEVEL
Economics

7136/3 - Paper 3 Economic principles and issues

Mark scheme

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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 Assessment Writer.

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.

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SECTION A

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

KEY LIST

1	B	**16**	C
2	A	**17**	A
3	D	**18**	A
4	D	**19**	D
5	D	**20**	A
6	A	**21**	C
7	D	**22**	D
8	C	**23**	C
9	D	**24**	A
10	B	**25**	A
11	B	**26**	C
12	B	**27**	D
13	C	**28**	C
14	C	**29**	C
15	B	**30**	C

Total: 30

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.

SECTION B

INVESTIGATION **Total for this investigation: 50 marks**

3 1 *To what extent, if at all, do the data suggest that the reliance on fossil fuels to produce energy is falling? You must use the data in **Extract C** to support your assessment*.

[10 marks]

Level of response	Response	Max 10 marks
3	**A good response that:** • is well organised and includes at least three relevant, well-developed issues • makes effective use of the numerical/statistical data in Extract C • shows some appreciation of the limitations of the data • includes a supported final judgement concerning the extent to which the data suggest that the reliance on fossil fuels to produce energy is falling	**8–10 marks**
2	**A reasonable response that:** • is fairly well organised and includes at least two relevant and fairly well-developed issues • includes some satisfactory use of the numerical/statistical data in Extract C • may show some appreciation of the limitations of the data • at the top of the level, is likely to include a final judgement regarding the extent to which the data suggest that the reliance on fossil fuels to produce energy is falling	**4–7 marks**
1	**A weak response that:** • is very brief and/or lacks coherence • may include one or more superficial points regarding the extent to which the data suggest that the reliance on fossil fuels to produce energy is falling • contains very limited or poor use of the data in Extract C • doesn't show any appreciation of the limitations of the data • may include an unsupported judgement concerning the extent to which the reliance on fossil fuels to produce energy is falling	**1–3 marks**

When assessing the extent to which the data suggest that the reliance on fossil fuels to produce energy is falling, most students are likely to base their assessment on the data in **Extract C**. However, they can also be rewarded for making relevant use of the other extracts and their own knowledge.

Relevant issues include:

- distinction between fossil and other fuels
- total energy consumption grew by 17.8%
- the share of energy consumption accounted for by fossil fuels has fallen from 87.4% in 2006 to 85.5% in 2016 but the amount of energy consumed that is generated from fossil fuels has increased from 9 851 million tonnes to 11 354 million tonnes, a rise of 15.3%
- there has been a persistent increase in the amount of energy consumed that is produced from oil (10.9%) and natural gas (24.5%) (the rate of growth in energy from oil and natural gas combined is 16.2% between 2006 and 2016)
- the amount of energy consumed that is produced from coal increased between 2006 and 2012 (15.9%) but has fallen between 2012 and 2016 (-2.2%) – however in 2016, it is still considerably more than in 2006 (438.1 million tonnes or 13.3% more)
- the share of energy consumption accounted for by non-fossil fuels has risen from 12.6% in 2006 to 14.5% in 2016 and the amount of energy consumed that is generated from non-fossil fuels has increased from 1 416 million tonnes to 1 922 million tonnes, a rise of 35.7%
- the increase in the amount of energy consumed that is produced from 'Other renewables' has seen the most rapid rate of growth over the period (352% growth) but is still only a small percentage of the total (3.2%)
- there has been a significant increase in the amount of energy consumed that is produced from hydroelectric sources (32.3%)
- the recent fall in the prices of oil and coal might be seen as indirect evidence that the demand for energy produced from fossil fuels is declining, (eg the price of oil peaked at $111.67 per barrel in 2012 but had fallen to $43.73 per barrel in 2016; the price of coal peaked at $147.67 per tonne in 2008 but had fallen to $59.87 per tonne in 2016)
- however, these reductions in the price of fossil fuels, shown in Figures 2 and 3, may slow down, or reverse, the move away from fossil fuels
- the shale revolution which is referred to in Extract B may slow down, or reverse, the move away from fossil fuels
- there is some evidence that the reliance on fossil fuels is starting to decline but, as yet, it hasn't happened to any significant extent
- limitations of the data identified might include:
    - data indicating reasons for the post-2011 fall in the price of oil and coal are not given, eg the fall may not reflect a reduction in demand for these fuels but an increase in supply
    - there is no data showing changes in the price of energy generated from nuclear, hydroelectric and other renewable sources
    - a longer time period is needed to see whether the changes indicated in Figure 1 are sustained and how they evolve; changes in technology that facilitate such fundamental adjustments are implemented over many years
    - some of the evidence appears contradictory, eg the volume of energy generated from fossil fuels and non-fossil sources have both increased
    - the data in Figure 1 show consumption rather than production, although they are likely to be very similar, particularly when taken over a few years

As indicated in the level of response mark grid above, a good response will include a supported final judgement concerning the extent to which the data suggest that the reliance on fossil fuels to produce energy is falling. A good response will quote data to support their judgement and data should be quoted accurately. It is likely that good students will conclude that there is only quite limited evidence to support the view that the reliance on fossil fuels to produce energy is falling but they should not be penalised for a different conclusion, provided it is well supported.

Energy consumption by fuel - 2006 and 2016

	2006	2016	% change
Oil	3984	4418	10.9%
Natural gas	2573	3204	24.5%
Coal	3294	3732	13.3%
Total fossil fuels	**9851**	**11354**	**15.3%**
Nuclear energy	635	592	-6.8%
Hydroelectricity	688	910	32.3%
Other renewables	93	420	351.6%
Total renewables	**1416**	**1922**	**35.7%**
Total energy consumption	**11267**	**13276**	**17.8%**
Fossil fuels as % of total energy	**87.4%**	**85.5%**	**-1.9%**
Renewables as % of total energy	**12.6%**	**14.5%**	**1.9%**

3 2 *Explain how a sustained low world market price for oil would be likely to affect the economic development of a less economically developed oil-producing country such as Nigeria or Venezuela.*

[15 marks]

Level of response	Response	Max 15 marks
3	**A good response provides an answer that:** • is well organised and develops a selection of the key issues that are relevant to the question • shows sound knowledge and understanding of economic terminology, concepts and principles with few, if any, errors • includes good application of relevant economic principles and, where appropriate, good use of data to support the response • includes well-focused analysis with clear, logical chains of reasoning	**11–15 marks**
2	**A reasonable response provides an answer that:** • focuses on issues that are relevant to the question • shows satisfactory knowledge and understanding of economic terminology, concepts and principles but some weaknesses may be present • includes reasonable application of relevant economic principles 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	**6–10 marks**
1	**A weak response provides an answer that:** • has one or more relevant issues identified • has some limited knowledge and understanding of economic terminology, concepts and principles but some errors are likely • has very limited application of relevant economic principles and/or data to the question • might have some limited analysis but it may lack focus and/or become confused	**1–5 marks**

Remember: AO4, i.e. evaluation, is not being assessed through this question.

Relevant issues include:

- meaning of economic development, less economically developed country
- use of data, for example: Extract C Figure 4, Extract D
- the problem, for some countries, of over-specialisation and dependence on oil
- impact of a low oil price on tax revenues and the likely consequences for public expenditure
- types of public expenditure that might be affected, eg health, education, infrastructure, and how they might impact on development
- impact on poverty and inequality
- impact on oil industry and related sectors
- direct and indirect effects on employment and growth, including possible multiplier effects
- effects on the balance of payments and the exchange rate
- how the likely reduction in the exchange rate will affect inflation, real incomes and hence living standards
- why a lower exchange rate might help to promote the growth of the non-oil sectors of the economy
- impact on capital flows and the ability to finance projects that promote development
- possible consequences for long-term indebtedness and the impact of this on development – may be linked to both government and other debt
- the impact of a lower exchange rate on debt denominated in foreign currencies, eg the US dollar

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

3 3 *After considering **Extract E**, and the original evidence in **Extracts A**, **B**, **C** and **D**, would you recommend to the members of OPEC that they continue to restrict the supply of oil to try to raise the world market price of oil? Justify your recommendation.*

[25 marks]

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 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 good application of relevant economic principles 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 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 judgements but these aren't 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 and/or data to the question • includes some limited analysis but it may lack focus and/or become confused • includes some 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 analysis which is, at best, very weak • includes attempted evaluation which is weak and unsupported	**1–5 marks**

Relevant issues and areas for discussion include:

- OPEC, as the dominant supplier, has some degree of monopoly power
- the ability of OPEC to have a significant impact on the overall supply of oil and hence its price
- the implications of the current cuts being achieved with the support of 11 non-OPEC oil producers
- the impact on revenues of raising the price when the demand for oil is relatively price inelastic
- the problem of deciding the quotas for each individual member of OPEC
- the tensions that operate in a cartel, ie collusion leading to joint profit maximisation but the short-run benefits to the individual producer of cheating on the agreement
- the significance of other producers who are not party to the agreement, eg the shale-oil and shale-gas industry in the US
- the long-run effects of a high price on exploration and the development of non-OPEC sources of supply, affecting the power of OPEC
- the effects of a high oil price on the development of other sources of energy, particularly renewables
- the effects of a high oil price on other related markets and hence the long-run demand for oil, eg electric vehicles, insulation and energy-saving measures
- if it can be achieved, the benefits of a high oil price for OPEC members, perhaps referring to some of the issues raised in question 32
- the problems generated through instability in the price of oil
- should OPEC be aiming to achieve a stable, rather than a high, price for oil
- should OPEC allow the oil price to fall to drive competitors out of the market, eg the relatively high-cost producers of shale oil
- why the price of oil will affect each member of OPEC differently, eg each has a different break-even price and some rely on oil revenues more than others
- the consequences of a high oil price for the world economy and the impact of a slowdown in the world economy on oil producers
- political and social considerations

Good answers are likely to identify both costs and benefits to the members of OPEC that would result from actions designed to restrict supply and raise the price of oil. They are also likely to consider the short-run and long-run consequences for the oil producers generated through the operation of the price mechanism and the feasibility of OPEC restricting supply in both the short run and the long run. The response should include a supported recommendation which could be in favour of action designed to raise, lower or allow market forces to determine the price of oil.

If a candidate's response includes discussion of the general welfare implications of OPEC restricting output to raise the price of oil, this can be given some credit. Similarly, discussion of the effects on oil consumers and the world economy can be rewarded. However, the context of the question means that discussion ought to focus on the costs and benefits to members of OPEC. If this is not addressed, the analysis is not well focused and the evaluation is likely to be limited.

A response that does not give any consideration to the impact of restricting the supply of oil upon the members of OPEC is unlikely to demonstrate the skills needed to achieve level 4.

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

An answer that does not include any evaluation or a supported recommendation must not be awarded more than 13 marks.