# GCSE Physics

# How to answer 6 mark LOR – J259-02 2018

# Example: J259 02 June 18, Q4b

### Task 1: Read this question

**4.** Solar farms are large power stations made up from many photovoltaic (PV) panels. Even though they are now very common, most of Britain’s electricity is generated by burning gas.



**b)\*** Jane and Ben have different views about these power stations



Describe the **advantages** and **disadvantages** of both power stations using Jane and Ben’s views.

#### Read the part of the question that tells you what to do….

‘Describe the **advantages** and **disadvantages** of both power stations using Jane and Ben’s views.’

Underline parts of the question that you need to include when you write your answer.

### Task 2: What levels are these answers?

Look again at the question. The ‘important things to do’ have been underlined:

Describe the **advantages** and **disadvantages** of **both** power stations **using Jane and Ben’s views**.

A ‘good’ answer (a **Level 3 answer**) will answer ALL parts of the question so will ….

* Describe advantages of both power stations (this means at least 2 for each)
* Describe disadvantages of both power stations (this means at least 2 for each)
* Make sure it is gas-burning and solar power stations that are being mentioned.

Answers at **level 2 and level 1** will only answer some parts of the question.

#### Look at these three examples of candidate answers

In your group, decide whether you think each answer is a ‘level 1’ or a ‘level 2’ or a ‘level 3’ answer. You don’t need a mark scheme to do this, just use your judgement, based on what the question is asking.

Justify your decisions by…

* Underlining parts of the answers that you ‘like’ and work out which part of the question the answer links to.
* Making notes on the answer to say what you think is ‘missing’.

Describe the **advantages** and **disadvantages** of both power stations using Jane and Ben’s views.

* Gas is non renewable, so will run out
* Much power, means, more energy, more waste product that will afect the environment.
* The output is mall, so will release less pollutants, and will have less cost.
* CO2 will damage the environment, such as Nitrogen; that means, less oxygen and more cost. Renewable energy like wind, etc… wouldn’t run out.

Nuclear is non renewable

**Notes**

**Level**

**Answer 2**

An advantage of using solar farms is that it takes up a lot of space and could also cause habitat loss for some animals. However, an advantage is that they do not need to burn fossil fuels.

A disadvantage of using gas-burning power stations is that the let off a lot of harmful gasses. However an advantage is that it enables work in the area bringing in more money.

**Level**

**Notes**

**Answer 3**

|  |  |
| --- | --- |
| Advantage:* They both give out energy.
* (solar farms) renewerable and never run out
* Gas burners work all the time when ever its needed
* Gas burners give off alot of power, which people need
 | Disadvantage:* gas-burning is non-renewerable
* causes pollution
* ugly, loud & large
* produces carbon dioxide (gas-burning)
* costly to build and replace
* solar farms only work when sunny (not rain)
* Both take up envirenment
 |

**Level**

**Notes**

### Task 3: Writing your own answer

Now write your own answer to the question on this sheet.

**4.** Solar farms are large power stations made up from many photovoltaic (PV) panels. Even though they are now very common, most of Britain’s electricity is generated by burning gas.



**(b)\*** Jane and Ben have different views about these power stations



Describe the **advantages** and **disadvantages** of both power stations using Jane and Ben’s views.

### Task 4: How did the examiners mark these answers?

This is the mark scheme for the question that the examiners used to mark the question.

| **Question** | **Answer** | **Marks** | **Guidance** |
| --- | --- | --- | --- |
| **4** | **(b)** |  | **Level 3 (5–6 marks)** Describes some advantages and disadvantages of **BOTH** solar farms **and** gas-burning power stations, showing an understanding of non-renewable and renewable energy resources. *There is a well-developed line of reasoning which is clear and logically structured. The information presented is relevant and substantiated.* **Level 2 (3–4 marks)** Describes some advantages of **BOTH** solar farms **and** gas-burning power stations, showing an understanding of non-renewable and renewable energy resources. **OR** Describes some disadvantages of **BOTH** solar farms **and** gas-burning power stations, showing an understanding of non-renewable and renewable energy resources. **OR** Describes some advantages **and** disadvantages of **BOTH** solar farms and gas-burning power stations. *There is a line of reasoning presented with some structure. The information presented is relevant and supported by some evidence.* **Level 1 (1–2 marks)** Describes some advantages **and** disadvantages of gas-burning power stations ONLY. **OR** Describes some advantages **and** disadvantages of solar farms ONLY. **OR** Describes some advantages **or** disadvantages of BOTH solar farms and gas-burning power stations. **OR** Shows an understanding of non-renewable and renewable energy resources. *There is an attempt at a logical structure with a line of reasoning. The information is in the most part relevant.* **0 marks** *No response or no response worthy of credit.*  | 6 | **AO3.2b Draws a conclusion describing advantages and disadvantages** For example: Advantages – solar farm * A solar farm can be used for grazing animals
* Less pollution produced when generating electricity
* solar power stations don’t produce CO2 (once built)

Advantages – gas-burning power station * More power produced than solar farms
* Gas is not reliant on weather conditions/light levels

Disadvantage – solar farm * maximum solar output is 40 × smaller than gas [**ECF** part **(a)**]
* Reliant on the weather conditions
* Solar panel production is polluting
* Looks ugly
* Solar farms take up space

Disadvantage – gas-burning power station * CO2 contributes to global warming
* Gas produces CO2
* which damages the environment
 |



This is some information about the marks that the examiners gave for each answer.

|  |  |  |  |
| --- | --- | --- | --- |
| **Answer** | **Level** | **Mark** | **Comments** |
| 1 | **1** | 2 | This is an example of a level 1 answer which gained 2 marks. The candidate has explained the difference between renewable and non-renewable resources and each type of power station is correctly stated to be renewable or not renewable.Nuclear power stations are not one of the two options discussed by Jane and Ben and including irrelevant details that are not part of the question makes the quality of written communication worse not better.To progress to Level 2 the response needs a sustained line of reasoning, and a more obvious logical structure. No credit can be given for advantages or disadvantages as it is not clear which statements refer to advantages and which to disadvantages. |
| 2 | **2** | 4 | This is an example of a Level 2 answer which gained 4 marks. The candidate addresses the advantages and disadvantages of both power stations in a clearly structured response and the candidate’s response is well written, using an appropriate scientific writing style.Many other candidates used a story telling writing style which meant that they wrote overly long answers some of which were over 200 words long.To progress to Level 3 this candidate needs to address the important point that one resource is renewable and the other is not. |
| 3 | **3** | 6 | This is an example of a Level 3 answer which gained 6 marks. The candidate has made good use of bullet points in a table to answer this question clearly. The advantages and disadvantages of both types of power station are addressed, including whether the resources are renewable, and the answer is of an appropriate length.This candidate has written 65 words in their response. Other 6 mark Level 3 responses which were written in a scientific continuous prose writing style were typically 90 to 110 words long.Although we saw fewer over-long answers than on the higher tier papers, it is still worth noting that these tend to gain fewer marks, because they contain irrelevant detail and often contradict or repeat points made earlier. |

#### Task 4 – Look at the levels you gave for each answer

Did you agree with the examiner level? If not, look at the comments and work out why.

Now use the mark scheme to mark your own answer.



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