Generating electricity questions

1. What are the three types of fossil fuels?

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(3 marks)

2. How much electricity generated in the UK comes from power stations fuelled from fossil fuels?

…………………………………………………………………………………………………

(1 mark)

3. Complete this process:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **BURN FOSSIL FUEL** | **🡪** |  | **🡪** |  | **🡪** |  | **🡪** | **ELECTRICITY PRODUCED** |

(3 marks)

4. During the process of ‘cleaning coal’, what by-product is produced?

…………………………………………………………………………………………………

(1 mark)

5. Give three advantages of using fossil fuels:

……………………………………………………………………………………………………………………………………………………………………………………………………

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(3 marks)

6. Give three disadvantages of using fossil fuels:

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(3 marks)

7. The BP oil spill resulted in 4.9 billion barrels worth of oil leaking into the Gulf of Mexico. What was the impact on the environment and economy?

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(3 marks)

8. Describe the process of nuclear fission, from adding the nuclear fuels to producing electricity.

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(6 marks)

9. Describe two advantages of using nuclear fission to produce electricity

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…………………………………………………………………………………………………

…………………………………………………………………………………………………

(2 marks)

10. Describe two disadvantages of using nuclear fission to produce electricity

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(2 marks)

11. The Chernobyl nuclear disaster of 1986 has been described as the world’s worst nuclear accident. Use evidence from the posters to give a reason why nuclear power is safer than fossil fuels.

…………………………………………………………………………………………………

(1 mark)

Generating electricity questions – ANSWERS

1. What are the three types of fossil fuels?

Coal, natural gas, oil

(3 marks)

2. How much electricity generated in the UK comes from power stations fuelled from fossil fuels?

75%

(1 mark)

3. Complete this process:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **BURN FOSSIL FUEL** | **🡪** | **HEAT WATER TO MAKE STEAM** | **🡪** | **STEAM TURNS TURBINE** | **🡪** | **TURBINE TURNS GENERATOR** | **🡪** | **ELECTRICITY PRODUCED** |

(3 marks)

4. During the process of ‘cleaning coal’, what by-product is produced?

Gypsum

(1 mark)

5. Give three advantages of using fossil fuels:

Large amounts of energy generated cheaply

Transporting oil and gas is easy

Gas-fired power stations are efficient

Fossil fuel power station can be built almost anywhere (with good transport links)

(3 marks)

6. Give three disadvantages of using fossil fuels:

Non-renewable – will run out

Release carbon dioxide when burned – greenhouse effect/global warming

Release sulphur dioxide when burned – acid rain

Mining difficult and dangerous, destroys landscape

Lots of land needed

(3 marks)

7. The BP oil spill resulted in 4.9 billion barrels worth of oil leaking into the Gulf of Mexico. What was the impact on the environment and economy?

Wildlife – animals killed

Marshes and wetlands – ecosystems destroyed

Beaches closed – decline in tourism

Fishing waters closed – fishermen loss of earnings

Estimated cost of cleaning up is up to £60 billion

(3 marks)

8. Describe the process of nuclear fission, from adding the nuclear fuels to producing electricity.

Radioactive atoms split

Heat energy released

Heat energy used to heat water and make steam

Steam turns turbine

Turbine turns generator

Electricity produced

(6 marks)

9. Describe two advantages of using nuclear fission to produce electricity

Reliable

Small amounts of waste

Lots of energy produced from small amounts of fuel

No smoke/carbon dioxide produced so does not contribute to greenhouse effect

No more expensive than coal

(2 marks)

10. Describe two disadvantages of using nuclear fission to produce electricity

Waste is radioactive for thousands of years and is extremely dangerous

Non-renewable

Safety costs

(2 marks)

11. The Chernobyl nuclear disaster of 1986 has been described as the world’s worst nuclear accident. Use evidence from the posters to give a reason why nuclear power is safer than fossil fuels.

No pollution

(1 mark)