Energy Resources – 2020 IGCSE 0625

1. Nov/2020/Paper_11/No.10

The arrows show an outline of the processes in an oil-fired power station.

oil is burnt → turns turbine → turns generator → output transformer

What are the processes for the transfer of energy between the turbine and the generator and between the generator and the output transformer?

	turbine to generator	generator to output transformer
A	electrical working	electrical working
B	mechanical working	electrical working
C	mechanical working	transfer of thermal energy
D	transfer of thermal energy	mechanical working

2. Nov/2020/Paper_12/No.9

Two wind farms supply electrical energy to consumers in different ways.

Wind farm 1 supplies energy directly to consumers and for every 1000 J of energy extracted from the wind, 360 J is transferred to consumers as electrical energy.

Wind farm 2 stores electrical energy in batteries and then supplies energy from the batteries to the consumer. For every 1000 J of energy extracted from the wind, 270 J is transferred to consumers as electrical energy.

Which statement about the two wind farms is correct?

A Wind farm 1 is less reliable and less efficient than wind farm 2.

B Wind farm 1 is less reliable but more efficient than wind farm 2.

C Wind farm 1 is more reliable but less efficient than wind farm 2.

D Wind farm 1 is more reliable and more efficient than wind farm 2.

3. Nov/2020/Paper_13/No.10

Which statement correctly compares the production of electricity using wind and the production of electricity using nuclear fission?

A Wind is less reliable than nuclear fission; both wind and nuclear fission are renewable.

B Wind is less reliable than nuclear fission; wind is renewable, but nuclear fission is not.

C Wind is more reliable than nuclear fission; both wind and nuclear fission are renewable.

D Wind is more reliable than nuclear fission; wind is renewable, but nuclear fission is not.

4. Nov/2020/Paper_22/No.11

What is the source of the Sun's energy?

A chemical reactions in the Sun's core

B γ-emissions in the Sun's core

C nuclear fission in the Sun's core

D nuclear fusion in the Sun's core

5. Nov/2020/Paper_23/No.11

A number of ways in which we use energy are listed.

In which is the ultimate source of energy **not** the Sun?

A Energy is provided by a horse to pull a cart.

B Energy is provided by hydroelectric generators to heat a house.

C Energy is provided by a nuclear power station.

D Energy is provided by a windmill to pump water to a fountain.

6. Nov/2020/Paper_31/No.4(a),(b)

Electrical energy is provided to homes and industry from a coal-fired power station.

(a) The main stages in the operation of a coal-fired power station are listed below.

They are **not** in the correct order.

A The boiler produces steam.
B The turbine turns a generator.
C Thermal energy transfers to water in a boiler.
D Chemical energy in coal transfers to thermal energy.
E The generator produces electrical energy.
F Steam turns a turbine.
G Coal burns in a furnace.

Complete the flow chart to describe how a coal-fired power station works.

Insert the missing letters in the empty boxes.

[3]

(b) Some people are against the use of coal-fired power stations.

Give **two** environmental problems caused by coal-fired power stations.

1. .....

.....

2. .....

.....

[2]