8 Transport

LANGUAGE

1 Grammar

Choose the best option to complete the sentences.

1 Technology *will help / might helps / may helping* improve traffic flow in cities.
2 *Will how we / How we will / How will we* produce enough energy without oil?
3 I know that wind energy *not / may not / won't* be the answer to our energy needs.
4 Using wave energy *not / mayn't / mightn't* be very good for marine life.
5 *Might / May /Do* digital crime increase, in your opinion?
6 What will the car of the future *look / to look / looking* like?
7 This computer *might not / not might / not will* be powerful enough for our needs.
8 *When / When will / Will* the prototype be ready for testing?

2 Key words from the unit

Complete the sentences with the words from the list.

congestion
production
liquefied
efficient
hybrid
fuel cells
transport
detect

1 LPG is _____ gas.
2 _____ cars have two types of engine.
3 Hydrogen _____ are expensive.
4 Electric motors are very _____.
5 Buses are a form of public _____.
6 The sensor can _____ obstacles.
7 Increase in road traffic causes _____.
8 This factory increased _____ of electric cars.

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READING AND VOCABULARY

Transport technology is concerned with all types of transport as well as roads, railways, airports and sea ports.

Safety is especially important in transport, and engineers are always trying to design safer vehicles. Advanced Safety Vehicles (ASVs) use sensors to detect possible dangers. The sensors can detect things near the car, such as other cars, walls or people; they can detect changes in temperature, speed, tyre pressure and road surface. They can also sense changes in the driver's condition, such as tired eyes. The sensors send a signal to the car's computer, which is programmed to deal with problems. For example, if the car is too close to another vehicle, the computer sounds an alarm or takes control of the car if necessary.

Engineers are also trying to design cars which run on 'environmentally friendly' fuels, rather than petrol or diesel. A hybrid car uses both an internal combustion engine and an electric motor. The aim is to use less fuel, but the car still has the power of a traditional engine when necessary. For example, when the car is moving slowly, it can switch to electricity, and when high speed is required, it can switch to petrol. Hybrid cars also have a longer range: they can travel 30% further than non-hybrid cars on the same amount of fuel.

Another way of reducing pollution from vehicle exhausts is the use of different kinds of fuel. LPG (Liquefied Petroleum Gas) produces less pollution than diesel fuel. In some countries, such as Brazil, biofuels are produced using plants such as sugar cane or maize.

Hydrogen may be the fuel of the future. Hydrogen fuel cells use the world's most common element, hydrogen, to generate electricity. Hydrogen is mixed with oxygen from outside the car. This generates chemical energy, which is converted into electrical energy for an electric motor. There is no pollution because only steam is produced.

Unfortunately, this technology has some disadvantages at present: the fuel cells are expensive to manufacture, the production of hydrogen requires a lot of energy, and hydrogen is dangerously explosive, so keeping large amounts in cities may not be safe.

3 Comprehension

Answer the questions about the text.

1 Which kind of vehicle can detect and deal with dangers?

_____

2 Which kind of vehicle can switch between two engines to save fuel?

_____

3 Which kind of fuel is made from petroleum but produces less pollution?

_____

4 Which kinds of fuel are made from sugar cane plants and maize?

_____

5 Which kind of fuel produces no pollution?

_____

6 In your opinion, which is the biggest disadvantage of hydrogen? Say why.

_____

_____

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4 Words from the text

What is 'it'?

1 Sensors send it to the car's computer. _____
2 The driver hears it if there is a problem. _____
3 Hybrid cars use less of it. _____
4 The hybrid car's motor uses it when travelling slowly. _____
5 LPG produces less of it. _____
6 Hydrogen fuel cells convert it into electrical energy. _____

5 Further vocabulary practice

Complete the sentences with a phrase from the list that means the same as the words in brackets.

at once
at the latest
cut down
get in touch
run on
see to it

1 Please _____ (phone or write) if you have any questions.
2 I sent her an email, and she replied _____ (immediately).
3 There's a problem. Can you _____ (do what is necessary)?
4 The letter should arrive on Thursday _____ (or before that).
5 We need fuels that _____ (reduce) pollution.
6 These engines _____ (are powered by) LPG.

WRITING

6 An apology

Read the information below and write an email to the customer.

You work for a company that manufactures electric motors. A customer has not received 20 motors that he ordered from your company two weeks ago. Apologize, explain the delay and promise action. (The customer's name is Mr Andy Morton.)

TO: andymorton@hybka.com
SUBJECT: electric motors - order 00271

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