

UNIT 6

VEHICLES SERVICING

STEP 1. Text A. Automotive Tests Systems <i>Grammar Revision: The Present Perfect Tense</i> Text B. Peugeot 206 Servicing
STEP 2. Text A. Bodywork Care <i>Grammar Revision: The Past Perfect Tense</i> Text B. What To Be Done For Competitive Vehicles Servicing In Ukraine
STEP 3. Text A. The Replacement of Wheels <i>Grammar Revision: The Future Perfect Tense</i> Text B. Faults with Cars
Revision

STEP 1

TEXT A. AUTOMOTIVE TESTS SYSTEMS

PRE-TEXT EXERCISES

I. Translate

a) **international words:** manufacturer, regulation, design, company, technology, technically, configuration, electric, alternative;

b) **international word combinations:** test systems and components, a test platform, integrated test systems, a technical centre, to test vibration, to control temperature, chassis dynamometers.

II. Give the meanings of the following words consulting the dictionary:

mean(s), operation, critical.

III. Translate the following words paying attention to their structure:

dynamometer, four-wheel (drive configurations), air-conditioning (systems).

IV. Read and remember the following abbreviations:

ECU – electronic control unit

ABS – anti-blocking system

HVAC – heating, ventilation, air-conditioning

NVH – noise, vibration and harshness

CFC – chlorofluorocarbon

V. Words to remember:

1. **competition** – змагання, конкуренція

2. **multiple** – 1. багатократний 2. складний

3. **ultimately** – в остаточному (кінцевому) підсумку

4. **deployment** – розгортання

5. **telematics** – телематика (інтегровані засоби оброблення та надання даних)

6. **humidity** – вологість

7. **simulate** – імітувати, моделювати
8. **harsh** – різкий
9. **commitment** – зобов'язання
10. **facility** – обладнання

VI. Read and translate the text:

AUTOMOTIVE TESTS SYSTEMS

Automotive manufacturers face increased consumer demands, stricter government regulations and heightened competition. They must design, manufacture and test systems and components quicker than ever before to compete in today's market. That means their automotive test equipment must be fast, flexible and powerful.

The automotive test platform gives engineers one platform for multiple tests, which reduces costs while improving productivity and product quality – ultimately giving companies a competitive advantage. The platform can perform hundreds of tasks. Regardless of the particular task the platform ensures rapid deployment and reliable operation of critical new technologies.

Engineers can build highly integrated automotive test systems with the automotive test platform, including telematics, fuel cell test, ECU test, dynamometer test, ABS test and temperature measurement.

The new Sanden technical centre, which is located near Frankfurt, is capable of testing HVAC systems for all types of vehicles. The facility features a climatic wind tunnel that the company regards as the most technically advanced of its type in the world. The environmental chamber can control temperature and humidity, solar load and wind speed. It has dual chassis dynamometers and can simulate a range of driving conditions for the test of HVAC systems. Fuel consumption and emissions can also be measured.

The climatic wind tunnel operates from -50 to $+40^{\circ}\text{C}$ (-58 to $+104^{\circ}\text{F}$) at speeds to 160 km/h (100mph) and humidity levels to 95%. Solar simulations ranges are from 0.3 to 1.2 kW per square metre. The dynamometers can cope with front-, rear- and four-wheel drive configurations. A separate NVH chamber can measure these effects in relation to air-conditioning systems.

A particular focus at the new technical centre will concern future technology. Environmental commitment and an emphasis on fuel savings will be integral parts of research and development at the facility, as will the development of systems for electric cars, low noise systems, the elimination of CFC, and the development of alternative refrigerants.

TEXT-BASED ASSIGNMENTS

LEXICAL EXERCISES

I. Divide all terms from the text into the following groups: a) adjectives, b) nouns, c) verbs.

II. Translate the following words with the same root:

- a) to manufacture – manufacturers
- b) to compete – competition – competitive

III. Match the columns:

- | A | B |
|----------------|---------------|
| 1. потреби | a) fuel |
| 2. проектувати | b) reliable |
| 3. обладнання | c) to concern |
| 4. надійний | d) research |
| 5. швидкість | e) equipment |
| 6. вологість | f) demands |

- | | |
|----------------|----------------|
| 7. паливо | g) development |
| 8. стосуватися | h) speed |
| 9. дослідження | j) humidity |
| 10. розробка | j) to design |

IV. Translate the following word combinations with the key words

- **“test”**: test systems and components, their automotive test equipment, the automotive test platform, multiple tests, to build highly integrated automotive test systems with the automotive test platform, fuel cell test, ECU test, dynamometer test, ABS test, for the test of HVAC systems
- **“development”**: to be integral parts of research and development at the facility, the development of systems for electric cars, the development of alternative refrigerants.

V. Write down word combinations for the description of the new Sanden technical centre.

VI. Answer the questions:

1. What do automotive manufacturers face?
2. What requirements must automotive test equipment meet?
3. What do highly integrated automotive test systems with the automotive test platform include?
4. What are HVAC systems?
5. What is the new Sanden technical centre capable of?
6. What conditions does the climatic wind tunnel operate at?
7. Will a particular focus at the new technical centre concern future technology?

VII. Complete the following statements:

- | | |
|--|--|
| 1. Automotive manufacturers must design, manufacture and test systems and components | a) temperature and humidity, solar load and wind speed |
| 2. The platform can perform | b) from -50 to $+40^{\circ}\text{C}$ (-58 to $+104^{\circ}\text{F}$) |
| 3. The new Sanden technical centre | c) these effects in relation to air-conditioning systems |
| 4. The environmental chamber can control | d) be integral parts of research and development at the facility |
| 5. The climatic wind tunnel operates | e) hundreds of tasks |
| 6. A separate NVH chamber can measure | f) is located near Frankfurt |
| 7. Environmental commitment and emphasis on fuel savings will be | g) quicker than ever before to compete in today's market |

VIII. Put the following sentences in the order mentioned in the text:

1. They must design, manufacture and test systems and components quicker than ever before to compete in today's market. 2. The dynamometers can cope with front-, rear-, and four-wheel drive configurations. 3. A particular focus at the new technical centre will concern future technology. 4. The facility features a climatic wind tunnel that the company regards as the most technically advanced of its type in the world. 5. Regardless of the particular task the platform ensures rapid deployment and reliable operation of critical new technologies. 6. The new Sanden technical centre, which is located near Frankfurt, is capable of testing HVAC systems for all types of vehicles. 7. Automotive manufacturers face increased consumer demands, stricter government regulations and heightened competition.

IX. Translate the following sentences into English:

1. Виробники автомобілів усе частіше мають справу зі зростаючими вимогами споживачів та жорсткою конкуренцією. 2. Устаткування для тестування автомобілів повинно бути потужним, надійним та сучасним. 3. Одним з видів обладнання для

тестування є платформа для авто діагностики, що може виконувати сотні завдань. 4. Авто діагностика передбачає вирішення наступних завдань: перевірка рівня палива та роботи електронних вузлів, агрегатів; вимірювання температури; тестування антиблокувальної системи та інше. 5. Нова станція технічного обслуговування, що була відкрита недалеко від Франкфурта, може тестувати системи опалення, вентиляції, має систему «клімат контроль» для усіх видів транспортних засобів. 6. Особлива увага на новій станції технічного обслуговування приділяється майбутнім технологічним розробкам. 7. Невід'ємною частиною під час розробки технічного обладнання становить урахування екологічного стану зовнішньої середи та тенденції раціонального використання палива.

GRAMMAR EXERCISES

(Grammar Revision: The Present Perfect Tense)

X. Form Participle II from the following verbs:

to face, to mean, to compete, to give, to reduce, to build, to ensure, to control, to have, to carry.

XI. Define the infinitives:

improved, located, had, measured, based, led, taken, made, installed, fixed.

XII. Make the following sentences negative:

1. Very light vehicles have used steering gears occasionally. 2. After the engine has warmed up, it will run satisfactorily on a leaner mixture. 3. Recently platinum has come into great favour despite its high cost. 4. Studies have shown that 86% of the serious accidents are caused by drives. 5. Automotive manufacturers have recently faced increased consumer demands.

XIII. Put questions to the italicized words:

1. *After the gas in the cylinder has burnt* the temperature in the cylinder is almost 4.500F. 2. *Greenhouse effect concerns* have led most European car manufacturers to commit to introducing cars. 3. Hedge and tree planting on the road sides have provided *a pleasant outlook*. 4. Honda's Advanced Safety Vehicle project *has produced* a touring motor cycle. 5. Bosch has developed an airbag control unit *with extended functional range*.

XIV. Put the verbs in the Present Perfect Tense:

1. Honda (to produce) a touring motorcycle equipped with the airbag system. 2. Aluminium (to make) great strides in grabbing a respectable amount of the automotive spotlight from steel. 3. Automotive manufacturers (to face) increased consumer demands. 4. The platform for multiple tests (to reduce) costs. 5. Engineers (to build) highly integrated automotive test systems.

CONVERSATIONAL PRACTICE

XV. You are going to open your own vehicle service centre. Discuss with your group mates what you will start with.

XVI. You are the owner of a vehicle service centre and you are going to open a research and development department. Your book-keeper is against this idea. Speak about "for" arguments.

WRITTEN PRACTICE

XVII. Write an advertisement for the new Sanden technical centre.

TEXT B. PEUGEOT 206 SERVICING

The vehicle has its own servicing cycle, based upon the engine type. This cycle consists of alternating two types of service, A and C, intermediate visits and a few additional operations depending on your vehicle. When the first service is carried out and at each subsequent service, your dealer will advise you of the type and content of the next service due.

Table A. The Maintenance Cycle for 206 Petrol

Service every 20 000 miles (30 000 km) or 2 years

Miles(km)	20 000 (30 000)	40 000 (60 000)	60 000 (90 000)	80 000 (120 000)
1 st service at 6 000 miles (10 000 km) or 6 months This is necessary in order to benefit from the warranty	A	C	A	C
100 000 (150 000)	120 000 (180 000)	140 000 (210 000)	160 000 (240 000)	180 000 (270 000)
A	C	A	C	A

Automatic gearbox oil level every 40 000 (60 000 km). Brake fluid replacement is every 2 years or every 40 000 miles (60 000 km). These services are carried out with synthetic based oil; Fuel Economy oil or synthetic may also be used.

Table B. The Maintenance Cycle for 206 Turbo Diesel

Service every 12 000 miles (20 000 km) or 2 years

Miles(km)	12 000 (20 000)	24 000 (40 000)	36 000 (60 000)	48 000 (80 000)	60 000 (100 000)
1 st service at 6 000 miles (10 000 km) or 6 months This is necessary in order to benefit from the warranty	A	A	C	A	A
72 000(120 000) / 84 000 (140 000)	96 000 (160 000)	108 000 (180 000)	120 000 (200 000)	132 000 (220 000)	144 000 (240 000)
C / A	A	C	A	A	C

Brake fluid replacement is every 2 years or every 36 000 miles (60 000 km). These services are carried out with synthetic based oil; Fuel Economy oil or synthetic oil may also be used.

Table C. The Maintenance Cycle for 206 Indirect Injection Diesel

Service every 10 000 miles (15 000 km) or 2 years

Miles(km)	10 000 (15 000)	20 000 (30 000)	30 000 (40 000)	40 000 (60 000)	50 000 (75 000)
1 st service at 6 000 miles (10 000 km) or 6 months This is necessary in order to benefit from the warranty	A	A	C	A	A
60 000 (90 000)	70 000 (105 000)	80 000 (120 000)	90 000 (135 000)	100 000 (150 000)	110 000 (165 000)
A	A	C	A	A	C

Brake fluid replacement is every 2 years or every 40 000 miles (60 000 km). These services are carried out with synthetic based oil; Fuel Economy oil or synthetic oil may also be used.

EXERCISES

I. Read the text and give the main idea of it.

II. Comprehension questions:

1. What is vehicle's servicing cycle based upon?
2. What is A?
3. What is C?
4. What types of engines are mentioned in the text?

III. Do you agree with the statement: "Every vehicle has its own servicing cycle"? Give your arguments.

IV. Describe the maintenance cycle of Peugeot 206 petrol and turbo diesel.

V. Compare the maintenance cycle of Peugeot 206 petrol, turbo diesel and indirect injection diesel.

STEP 2

TEXT A. BODYWORK CARE

PRE-TEXT EXERCISES

I. Translate international words:

regular, plastic, specific, automatic, microscopic, recommendation, distance, vacuum.

II. Translate the following words paying attention to their structure: bodywork, paintwork, car-wash, polycarbonate, headlamp, glass-cleaning.

III. Give the meanings of the following words: body, mark, seat.

IV. Words to memorize:

1. **matt** – матове покриття, матова поверхня
2. **sill** – 1. нижній брус (кузова) 2. боковина 3. поріг (дверей)
3. **greasy** 1. пластичний мастильний матеріал, консистентне мастило; тавот 2. топлене сало, жир
4. **seal** – 1. ущільнення; ущільнюваний матеріал; ущільнювальна прокладка; сальник 2. герметизуючий склад
5. **adjacent** – суміжний; той, що примикає
6. **trunk lid** – кришка багажника
7. **damp** – 1. газова суміш 2. сирість, вологість 3. зволожувати, змочувати 4. сирий, вогкий
8. **rag** – ганчір'я, обтираючий матеріал
9. **chamois** – 1. замша 2. вичинювати замшу 3. сарна (біол.)
10. **tar** – дьоготь, смола

V. Read and translate the text:

BODYWORK CARE

Regular preventive maintenance is essential for preserving the proper appearance of the body finish. This includes regular washing using polishing compounds. Do not use petrol, oil, or cloth stain removers to clean the bodywork and plastic parts of your vehicle.

To preserve the paintwork and the plastic trim on your vehicle you should wash them regularly: a) by hand: there are no specific precautions to take; b) using an automatic car-wash: repeated use of poorly maintained automatic car-washes can lead to the appearance of microscopic scratches which give the paintwork a matt appearance (especially visible on dark colours); c) using a high pressure washer: always follow the recommendations on the equipment (pressure and spraying distance). If there are damaged areas on the vehicle (painted bumpers or headlamps) it is recommended to direct the high pressure jet on them. Wash these areas by hand. Also avoid the entry of water into locks.

Before washing your car clear out the drain holes in the doors and in sills. After washing wipe off the body with soft linen or flannel cloth.

Remove dust from carpets, back rests and seat upholstery by vacuuming. To remove greasy spots from upholstery use neutral soap and water. At the same time clean thoroughly rubber seals and adjacent door and trunk lid surfaces with damp cloth.

Clean the glasses with soft linen rags or chamois leather. Glasses which are extremely dirty should be first washed with water and glass-cleaning fluid (30 cc per 1 L of water).

To avoid scratches do not remove dust and dirt using dry cloth. It is best to wash the car immediately after a trip with a soft sponge using moderately strong jet of water.

Clean off bird droppings, resinous deposits, tar stains and grease marks as soon as possible; these all contain substances which can cause serious damage to the paintwork.

To prevent the development of bodywork corrosion as a result of accidental damage have them repaired swiftly.

TEXT-BASED ASSIGNMENTS

LEXICAL EXERCISES

I. Compile as many words as you can of the letters of the word “maintenance”.

II. Find in the text words with negative semantics and group them into 3 categories: a) nouns, b) verbs, c) adjectives.

III. Find Ukrainian equivalents:

A	B
1. maintenance	a) мийка
2. appearance	b) застереження
3. washing	c) ремонтувати
4. damaged	d) речовина
5. precautions	e) зовнішній вигляд
6. to spray	f) уникати
7. to repair	g) пошкоджений
8. substance	h) поверхня
9. surface	j)) технічне обслуговування
10. to avoid	i) розпилювати

IV. Match a word in column A with a word in column B to make up word combinations and translate them:

A	B
1. automatic	a) gloss
2. to follow	b) damage
3. flannel	c) bumpers
4. painted	d) water
5. seat	e) products
6. to cause	f) components
7. plastic	g) recommendations
8. loss of	i) car-wash
9. solvent	h) upholstery
10. jet of	j) cloth

V. Find in the text word combinations to describe: a) an automatic car-wash, b) a high pressure washer.

VI. Choose the correct word in brackets:

1. (Clean/don't clean) the glasses with soft linen rags or chamois leather. 2. Push the seat as far as (back/front) as possible. 3. To preserve the paintwork and the plastic trim on your vehicle you should wash them (seldom/regularly). 4. Before washing your car (clear out/don't clear out) the drain holes in the doors and in sills. 5. (Do not use/use) petrol, oil, or cloth stain removers to clean the bodywork and plastic parts of your vehicle.

VII. Complete the following sentences:

1. Regular preventive maintenance is essential for 2. To remove greasy spots from upholstery use 3. Clean the glasses with 4. Glasses which are extremely dirty should be first washed 5. To avoid scratches 6. It is best to wash the car immediately after a trip 7. To prevent the development of bodywork corrosion

VIII. Answer the questions:

1. What is essential for preserving the proper appearance of the body finish?
2. What should be done to avoid scratches?
3. What have you to do before washing your car?
4. What have you to do after washing your car?
5. Why are bird droppings dangerous for a car?
6. What types of car washing are mentioned in the text?

7. What can cause bodywork corrosion?

IX. Translate the following sentences into English:

1. Планове технічне обслуговування є важливим елементом для підтримання автомобіля у робочому стані. 2. Одним з видів технічного обслуговування становить його мийка. 3. Мийка автомобіля може здійснюватися наступним чином: ручним способом та автоматизовано. 4. Для запобігання виникнення корозії пошкоджені ділянки необхідно негайно відновити. 5. Для очищення кузову не дозволяється користуватися бензином або іншим видом палива. 6. До початку мийки необхідно прочистити усі дренажні канали. 7. Після мийки автомобіля ручним способом необхідно витирати кузов автомобіля за допомогою м'якої тканини з льону або фланелі.

GRAMMAR EXERCISES

(Grammar Revision: The Past Perfect Tense)

X. Form Participle II of the following verbs:

to know, to use, to make, to prepare, to include, to meet, to reach, to save, to find, to get.

XI. Define the infinitives:

sent, taught, come, driven, abandoned, understood, increased, invented, led, developed.

XII. Make the following sentences negative:

1. By 1960 the number of cars had reached 60 million. 2. There had been horseless carriages before. 3. No other industry had ever developed at such a rate. 4. The centre line and various pavement makings had saved many lives. 5. Benz had developed everything – engine, fuel, transmission controls.

XIII. Put questions to the italicized words:

1. In Russia *the Cherepanovs* had invented and built the first locomotive. 2. Subsequently Edward Hines *had extended* his idea to all the highways of the country. 3. Gradually the development of vehicles *driven by internal combustion engines* – cars, as they had come to be known – led to the limiting of the earlier restrictions. 4. To Benz, it was a particular triumph, *because he had pleaded for his idea almost alone*. 5. *Everything that could possibly be invented* had been invented.

XIV. Put the verbs in the Past Perfect Tense:

1. Otto (to find) his early work on the Lenoir engine. 2. He said he (to get) the idea from his own experience. 3. Back in 1860 Otto's work on the Lenoir engine (to teach) him that the ratio of fuel to air was important. 4. Otto sent him back to the direct-acting gas engine he (to abandon) as being hopeless. 5. Otto never abandoned his theory of the stratified charge, but by the time of his death most experts (to turn) against it.

CONVERSATIONAL PRACTICE

XV. Bodywork care plays an important role in good vehicle's performance. Reason it out.

XVI. Speak about stages in a vehicle's washing.

WRITTEN PRACTICE

XVII. Write down precautions to follow during a car washing.

TEXT B.

WHAT TO BE DONE FOR COMPETITIVE VEHICLES SERVICING IN UKRAINE

Vehicles servicing belongs to the automobile transport branch undergoing now a stage of rapid development and flourishing. It has practically overcome the period of formation and we are looking for its civilized development.

In order to achieve a success in competitive vehicles service activity some changes to be done. A priority task is the development of service technologies and the activity focused on clients.

The kernel issue of the problem is that modern vehicles servicing business should be based upon advanced service technologies, professional management and client-oriented approach.

Service centres must have up-to-date equipment to diagnose, maintain and repair vehicles. They should follow all engineering innovations and operate within standards considering safety requirements.

The success also lies in the staff competence and the ability to develop competitive management. Ukrainian mentality peculiarity is one of the decisive factors. Bad attitude towards the client is the point. There are a few experts in vehicles servicing with professional skills and good personal ability.

Now we observe the growing deficit of highly qualified personnel resulted from the application of advanced technologies and from growing number of new car's marks.

In order to succeed you have to accumulate different service methods and technologies and choose your own to be unique and perfect.

EXERCISES

I. What does the title of the text suggest?

II. Read the text and give the main idea of it.

III. Put your own questions on the text and ask your friend to answer them.

IV. Speak on demands required from vehicle service personnel.

V. Find out sentences describing measures for a service centre to succeed.

VI. Give your point of view as to the information given in the text.

VII. Render the text in Ukrainian.

VIII. Comment on the following situation. What point of view do you share? Motivate your answer:

A famous doctor was protesting to the owner of a garage about a large sum of money he had to pay for repairs to his car.

– All this for a couple of hours' work, he exclaimed. Why, your people are paid at a higher rate than we are!

– Well, you see, replied the garage man, you have been working on the same model since the beginning of time, but we have to learn all about a new model every year!

STEP 3

TEXT A. THE REPLACEMENT OF WHEELS

PRE-TEXT EXERCISES

I. Translate international words:

version, manner, elastic, central, recommend.

II. Give the meanings of the following words consulting the dictionary:

ground, revolution, arm, socket, boot, nut.

III. Translate the following pairs of words:

- a) to place – to replace
- b) to move – to remove
- c) to screw – to unscrew

IV. Words to memorize:

1. **jack** – 1. домкрат; пересувне піднімальне пристосування; лебідка 2. підставка; стояк; опора
2. **wrench** – гайковий ключ
3. **insert** – вставляти
4. **tighten** – щільно затягнути
5. **crosswise** – упоперек
6. **withdraw** – відокремлювати
7. **alongside** – бік о бік, поряд
8. **recess** – 1. виїмка; западина; заглиблення порожнина 2. канавка; паз 3. глухий отвір 4. ніша
9. **strap** – 1. смужка тканини або металу 2. стрічка; ремінь 3. скоба; хомут; кріпильна планка
10. **fetch** – з'єднувати (у тексті)

V. Read and translate the text:

THE REPLACEMENT OF WHEELS

- To replace the wheel you should follow the stages:
- place the car on level ground and apply the parking brake;
 - take out the jack, air pump, tool bag and spare wheel. In the estate version, the spare wheel, tool bag and jack are located under the carpet of the luggage compartment. For access, remove the carpet, loosen screw and remove cover;
 - unscrew the wheel bolts one revolution by the hub nut wrench;
 - put jack so, that is its arm is inserted into the socket under the floor, closest to the wheel being replaced. Make sure that the ground under the jack is solid enough (the jack must not go into the ground while the car is being jacked) and rotate the handle until the wheel rises above the ground;
 - unscrew the wheel bolts, remove the wheel and put the decorative wheel cover on the spare wheel;
 - install the spare wheel, screw in the bolts and lighten them uniformly in a crosswise manner;
 - lower the car, withdraw the jack and tighten the bolts.

After that, put the jack, tool bag and spare wheel in the boot, as follows:

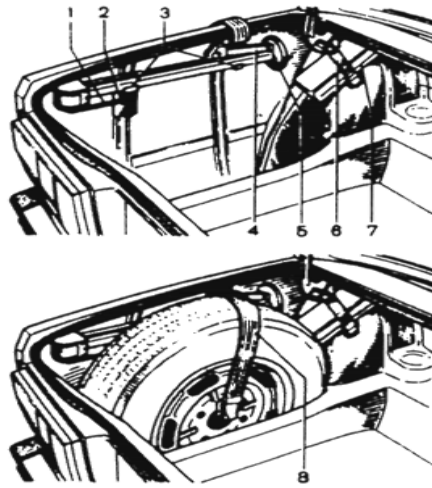


Fig.26. The replacement of the wheel

- put arm 4 (**Fig. 26**) alongside the rack and bring it against base 5 by rotating the handle;
- put the jack on brackets 3 and put handle 1 into recess 2;
- see that the tools are located correctly in bag 7 and fix it with elastic strap 6;
- put the wheel into the boot niche and fix both the wheel and the jack with elastic strap 8 by fetching the strap hook to the wheel central hole.

It is not recommended to open or close the doors and boot lid when the car is supported by a jack.

TEXT-BASED ASSIGNMENTS

LEXICAL EXERCISES

I. Choose English equivalents:

- | | | | |
|--------------------------|---------------|----------------|---------------|
| 1. гальма | a) pump | b) carpet | c) brakes |
| 2. колесо | a) wheel | b) cover | c) jack |
| 3. знаходиться | a) to place | b) to remove | c) to locate |
| 4. замінити | a) to replace | b) to withdraw | c) to tighten |
| 5. домкрат | a) hole | b) jack | c) wheel |
| 6. запасний | a) decorative | b) solid | c) spare |
| 7. затягнути | a) to jack | b) to tighten | c) to rise |
| 8. гайковий ключ | a) wrench | b) handle | c) ground |
| 9. гайка | a) bolt | b) revolution | c) nut |
| 10. слабо
закріпленій | a) to loosen | b) to put | c) to support |

II. Find antonyms:

- | A | B |
|--------------|---------------|
| 1. under | a) to take |
| 2. to screw | b) to close |
| 3. to put | c) to lower |
| 4. to loosen | d) to unscrew |
| 5. to rise | e) windows |
| 6. to open | f) above |
| 7. doors | g) tighten |

III. Say what words belong to the group of terms:

a jack, a nut, a pen, a wheel, a hole, a door, an apple, a pump, a bag, a bolt.

IV. Translate the following word combinations with the key words

- “wheel”: replacement of wheels, a spare wheel, to unscrew the wheel bolts, closest to the wheel, to remove the wheel, to put the wheel into the boot niche, to fix a wheel;
- “jack”: to take out the jack, to put the jack, the ground under the jack, to fix the jack with elastic strap, to be supported by a jack.

V. Give your own word combinations with the verbs:

to replace, to remove, to install, to loosen, to tighten, to (un)screw, to rotate.

VI. Complete the following sentences:

1. In the estate version
2. For access
3. Unscrew the wheel bolts one revolution by
4. Make sure that the ground under the jack is
5. Install the spare wheel, screw in the bolts and
6. Put the wheel into the boot niche and
7. It is not recommended

VII. Ask your group mates to answer your questions about the text.

GRAMMAR EXERCISES

(Grammar Revision: The Future Perfect Tense)

VIII. Form Participle II of the following verbs:

to follow, to loose, to put, to rotate, to install, to bring, to see, to locate, to open, to close.

IX. Define the infinitives:

made, included, washed, taken, given, used, painted, removed, been, caused.

X. Make the following sentences negative:

1. Engineers will have developed the car focusing on weight saving and performance.
2. Completely new Bentley will have evolved by the end of the year.
3. The new twined turbocharged V-8 will have produced a top speed limited to 150 miles per hour.
4. An array of solar cells will have provided a tiny bit of power.
5. With its fiberglass body, this car will have travelled 40 to 60 miles on a charge.

XI. Put questions to the italicized words:

1. Morgan will have developed its cars *to meet international safety and emission legislation*.
2. *New models* in the fullest sense will have not been on the agenda.
3. The environmental chamber will have controlled *temperature, humidity and wind speed*.
4. Increasing road traffic will have intensified the demands *being made on drivers*.
5. Some companies *will have developed* technologies for future control systems.

XII. Put the verbs in the Future Perfect Tense using the time-indicators given below:

by the next year, by the end of this month, by 7 o'clock

1. The Vehicle Dynamics Department (to focus) on research into the interaction between the driver and the vehicle.
2. Toshiba (to study) the possibilities for enhanced cost performance.
3. The Incorporation (to develop) an infrared night vision system.
4. I (study) the dynamometers with front -, rear - and four-wheel drive configurations.
5. A particular focus at the new technical centre (to concern) future technology.

CONVERSATIONAL PRACTICE

XIII. Ask your friends to give examples when the replacement of wheels is necessary to do.

XIV. Read and dramatize the following dialogue:

- 1 Student:** I've bought a new car!
- 2 Student:** Congratulations! Hope everything will be all right. But I'd like to give you a piece of advice. Do you know how to service your car?
- 1 Student:** Not exactly.
- 2 Student:** First of all, servicing your car regularly you prevent it from becoming unreliable.
- 1 Student:** What should I do if I fail to start the car in the morning?
- 2 Student:** Well, you should check three things first: the battery, the fuel level and the spark plugs. If the battery appears to be flat it's necessary to recharge it.
- 1 Student:** And what about an empty tank?
- 2 Student:** You're right. It's another common fault in the car. Having noticed a fuel warning light you should fill up the tank with more petrol.
- 1 Student:** You've mentioned spark plugs. What can be wrong with them?
- 2 Student:** They can be dirty. And that's the problem. To drive the car it is important to clean them regularly and adjust the gap in the spark plugs to the proper width.
- 1 Student:** Can you tell me about the filter?
- 2 Student:** Oh, filter removes particles of dirt and dust from the air passing to the carburettor. A blocked filter causes the engine to operate inefficiently. So filter must be cleaned and changed regularly.
- 1 Student:** Thank you so much for your help.
- 2 Student:** You are welcome.

XV. Name main stages in the replacement of wheels.

XVI. You have to replace a wheel. Would you do it yourself or drive to a special car service centre? Give your arguments.

WRITTEN PRACTICE

XVII. Write down precautions which should be followed during the replacement of wheels.

TEXT B. FAULTS WITH CARS

Servicing your car regularly you prevent it from becoming unreliable. Having failed to start the car in the morning you had better check three things first: the battery, the fuel level and spark plugs. If the battery appears to be flat it is necessary to recharge it. If it doesn't work you should replace it. An empty tank is another common fault in the car. Having noticed a fuel warning light on the instrument panel of your car you should fill up the tank with more petrol. Dirty spark plugs are also certain to cause a problem. To drive the car it is important to clean them regularly and adjust the gap in the spark plugs to the proper width. If the engine is not correct the engine will not run well.

If your car still doesn't start, the petrol pump may be broken, or the fuel pipe may be blocked. Having discovered a broken pump, it is a good idea to repair or replace it. If the fuel pump is blocked, take it off and unblock it.

Having heard a loud click when you turn the key, you are sure to realize that the starter motor may be jammed. If it is, you can try to release it pushing the car forwards and backwards (in the 2nd gear). If the car still doesn't start, the starter motor should be repaired or even replaced.

A few words about filter. Its function is to remove particles of dirt, dust and other impurities from the air passing to the carburettor. A blocked filter decreases the airflow to the

carburettor. A blocked filter decreases the airflow to the carburettor thus increasing the amount of fuel in the mixture. This causes the engine to operate inefficiently. Cleaning and changing filters regularly you prevent a considerable damage that is certain to be caused inside the cylinders. In this case the engine will need a thorough overhaul.

EXERCISES

I. Read the text and give the main idea of it.

II. Suggest some other titles for the text.

III. Write down the components of the car mentioned in the text and translate them.

IV. Comprehension questions:

1. Why is it necessary to serve your car regularly?
2. What do you have to do if you have noticed a fuel warning light on the instrument panel of your car?
3. What is necessary to do if you have discovered a broken pump?
4. Does a blocked filter cause the engine to operate inefficiently?
5. What does cleaning and changing filters regularly prevent the cylinders from?

V. Fill in the table using the information from the text:

The Component of the Car	The Fault	Measures for Eliminating

VI. Comment on the following saying “Prevention is better than cure”.

VII. Speak about the most common faults with the car not mentioned in the text and ways of eliminating them.

REVISION

I. Give the meanings of the following words:

mean(s), operation, critical, competition, body, mark, seat, ground, revolution, arm, socket, boot, nut.

II. Find out Ukrainian equivalents:

- | A | B |
|----------------|----------------------------------|
| 1. competition | a) матове покриття |
| 2. jack | b) суміжний |
| 3. tar | c) ганчір'я, обтираючий матеріал |
| 4. to tighten | d) домкрат |
| 5. multiple | e) конкуренція |
| 6. chamois | f) ущільнювати |
| 7. crosswise | g) дьоготь, смола |
| 8. matt | h) гайковий ключ |
| 9. strap | i) імітувати |
| 10. adjacent | j) щільно затягнути |
| 11. simulate | k) смужка тканини або металу |
| 12. to seal | l) вологість |

- | | |
|--------------|-------------|
| 13. rag | m) замша |
| 14. wrench | n) упоперек |
| 15. humidity | o) складний |

III. Define what word combinations belong to the topic “Vehicles Servicing”:

to start the engine, preventive maintenance, damaged areas on the vehicle, ecological situation, to wash regularly, bodywork care, a compression stroke, an automatic car-wash, environmental protection, to clean the body, lubricating system, soft linen rags or chamois leather, a platform for multiple tests, replacement of wheels, fuel economy, servicing cycle.

IV. Match the italicized word in column B with its meaning in column A:

- | | |
|--|--------------------|
| 1. Automotive <i>manufacturers</i> face increased consumer demands | a) up-to-date |
| 2. Automotive manufacturers must design, manufacture and test systems and <i>components</i> . | b) additional |
| 3. The platform ensures rapid deployment and reliable operation of critical <i>new</i> technologies. | c) parts |
| 4. Regular preventive maintenance is <i>essential</i> for preserving the proper appearance of the body finish. | d) have |
| 5. These all <i>contain</i> substances which can cause serious damage to the paintwork. | e) it is forbidden |
| 6. Put the jack, tool bag and <i>spare</i> wheel in the boot. | f) producers |
| 7. <i>It is not recommended</i> to open or close the doors and boot lid when the car is supported by a jack | g) important |

V. Put the words in the right order to make a statement:

- place, apply, on level ground, the parking brake, the car, and.
- soft, rags, the glasses, with, or, chamois, clean, leather, linen.
- these, wash, by hand, areas.
- should, the wheel, to replace, you, follow, the stages.
- the, perform, platform, can, hundreds, tasks, of.

VI. Translate the following word combinations with the key words

- “**test**”: test systems and components, their automotive test equipment, the automotive test platform, multiple tests, to build highly integrated automotive test systems with the automotive test platform, fuel cell test, ECU test, dynamometer test, ABS test, for the test of HVAC systems;
- “**development**”: to be integral parts of research and development at the facility, the development of systems for electric cars, the development of alternative refrigerants;
- “**wheel**”: replacement of wheels, a spare wheel, to unscrew the wheel bolts, closest to the wheel, to remove the wheel, to put the wheel into the boot niche, to fix a wheel;
- “**jack**”: to take out the jack, to put the jack, the ground under the jack, to fix the jack with elastic strap, to be supported by a jack.

VII. Answer the questions:

- What do automotive manufacturers face?
- What requirements must automotive test equipment meet?
- What do you have to do before washing your car?
- What do you have to do after washing your car?

5. Why are bird droppings dangerous for a car?
6. What stages should you follow to replace the wheel?
7. What is not recommended to do when the car is supported by a jack?

VIII. Write true (T) or false (F) for each of the sentences below. If the information doesn't concern the topic "Vehicles Servicing", put a question mark (?):

1. Clean the glasses with soft linen rags or chamois leather. 2. It is recommended to open or close the doors and boot lid when the car is supported by a jack 3. To avoid scratches do not remove dust and dirt using wet cloth. 4. Ford's solution was to invent a moving industrial production line. 5. Glasses which are extremely dirty should be first washed with water and glass-cleaning fluid (100 cc per 1 L of water). 6. The new Sanden technical centre, which is located near Frankfurt, is capable of testing HVAC systems for all types of vehicles. 7. The engine is the source of power that makes the car move. 8. Automotive manufacturers face decreased consumer demands, stricter government regulations and heightened competition. 9. Signposting is, of course, a directional control and a very effective one. 10. To preserve the paintwork and the plastic trim on your vehicle you should wash them regularly.

IX. Make up dialogues on the topic "Vehicles Faults". You may use the following word combinations:

to check smth., to be out of order, to be damaged, to change smth., to clean and test.

X. Comment on the problems of motor servicing today using the following word combinations:

to be concentrated only in big cities, to be retarded in regions and rural areas, the lack for qualified personnel, the necessity to certify personnel.

XI. Discuss in pairs the prospects of vehicles servicing using the following word combinations:

to provide high-quality services; modern and duly equipped garages; the equipment to diagnose, maintain and repair; to develop a modern business with up-to-date custom-oriented culture; to satisfy the clients demand; advanced service technologies; to train personnel; to take into consideration mental peculiarities.

XII. Speak about the state of things in your service centre using the following word combinations: a large service centre; to expand rapidly; to achieve great results in doing smth.; to carry out wide investigations; to use advanced methods for increasing the service life of smth.; to improve the conditions for work, to give much attention to the modern equipment.

XIII. You are the owner of a prosperous car's service centre. Discuss measures for the centre's widening with your managers.

XIV. Write down a report on measures maximizing the output of your vehicle's service centre.

XV. Write down an advertisement of your vehicle's service centre.