



Автомобиль

МЕТОДИЧЕСКИЕ УКАЗАНИЯ

к практическим занятиям по дисциплине
«Английский язык» для студентов I-II курсов
факультета «ТАМПТ» специальностей «Автомобильное
хозяйство» и «Инженерная механика»
дневной формы обучения

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Методические указания к практическим занятиям по дисциплине «Английский язык» для студентов I-II курсов факультета «ТАМПТ» специальностей «Автомобильное хозяйство» и «Инженерная механика», часть I / Сост. В.В. Лысенко, Е.В. Никитина. – Севастополь: Изд-во СевНТУ, 2009. - 48 с.

Методические указания предназначены для практических занятий студентов специальностей «Автомобильное хозяйство» и «Инженерная механика» факультета «ТАМПТ» дневной формы обучения. В каждом уроке представлен текст, лексико-грамматические упражнения на закрепление материала урока и задания, развивающие коммуникативные навыки.

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ВВЕДЕНИЕ

Данные методические указания предназначены для студентов 1-го и 2-го курса специальностей «Автомобильное хозяйство» и «Инженерная механика» факультета ТАМППТ.

Основная цель методических указаний – совершенствовать приобретенные ранее знания студентов, расширить словарный запас и научить вести беседу по профессиональной тематике.

Методические указания состоят из 14 уроков, каждый из которых содержит текст, упражнения для закрепления грамматики и лексики соответствующего урока, а также творческие задания коммуникативной направленности. Лексический материал содержит как транспортную терминологию, так и слова и словосочетания из общей лексики, которые студенты смогут использовать в разговоре на различные темы.

LESSON I

Exercise 1. Прочитайте слова и словосочетания. Эти слова вы должны знать

century – век

cause – причина

nowadays – в наше время

injury - ранение

at the same time – в то же время

it doesn't mean – это не означает, что

air pollution – загрязнение воздуха

to refuse – отказываться

Exercise 2. Эти слова вы должны знать.

automobile accident – автомобильная катастрофа, авария

vehicle - автомобиль, транспортное средство

wheel – колесо

truck – грузовик

to carry – перевозить

cargo – груз

van – фургон, микроавтобус

sport-utility vehicles (SUV) –

minivan - минивэн

внедорожник

omnibus (= bus) – автобус

parking place – парковка

pickup – пикап

auto repair shop – автомастерская

READ AND TRANSLATE THE TEXT

Automobile

Automobiles are the symbol of the 20th century. There are a lot of them in the streets of our cities. Nowadays many families have one or two automobiles. A car helps us in our life. At the same time it brings noise and air pollution. Automobile accidents are the main causes of death and injury in the world. But it doesn't mean that someone refuses from his or her car.

People classify autos by size, style, number of doors, and their use. We also call automobile as a car, auto, motorcar, and passenger car. It has four wheels and can carry up to 5 passengers and a driver. Vans, omnibuses, or buses carry more passengers. Pickups or trucks carry cargo. They are different. Everything depends on their size and design. Minivans are the vehicles that can usually carry up to eight passengers. Sport-utility vehicles (SUV) can drive in mud or snow.

ANSWER THE QUESTIONS:

1. Describe a pickup, a bus and a passenger car.
2. What are the disadvantages of a car?
3. Tell about the advantages of the car.

Vocabulary exercises

Exercise 1. Переведите:

Автобус, водить авто, авария, колесо, дверь, машина, грузовик, перевозить грузы, пассажиры, окно, дорога, парковка, водитель, ехать на машине.

Exercise 2. Составьте свои предложения со словами из предыдущего упражнения.

Exercise 3. Найдите в словаре однокоренные слова следующих слов и переведите их: pollution, classify, driver, different, noise, accident, refuse, auto.

Exercise 4. Соберите предложения.

1. English, automobile, not, word, The, is.
2. words, It, 'mobilis', two, consists, 'autos', of, and.
3. word, meaning, 'Autos', is, self, a, Greek.

4. word, 'Mobilis', movable, is, meaning, a, Latin.
5. self-moving, Thus, vehicle, means, an, automobile, a.

Exercise 5. Переведите предложения с русского языка на английский.

1. В наше время автомобили являются важной частью нашей жизни.
2. Растущее число транспортных средств становится причиной загрязнения окружающей среды.
3. Нужно быть очень внимательным, чтоб не попасть в аварию.
4. Автобус – это популярный общественный транспорт во многих городах и странах.
5. В нашем городе много автомастерских, но недостаточно парковок.
6. Хотя у моего отца микроавтобус, он отказывается перевозить в нём груз.

Grammar exercises

Exercise 1. Вставьте правильную форму глагола "to be" и переведите предложения.

1. There _____ a lot of different cars.
2. There _____ problems with this engine.
3. There _____ minivans and sport-utility vehicles.
4. _____ there many defects in this automobile?

Exercise 2. Найдите предложения, которые можно переделать, используя глаголы "to be" or "to have".

1. There is a bus stop near his house.
2. There are two cars in her family.
3. There is their pickup in the parking place.
4. There are many automobile accidents nowadays.
5. There is someone in the auto repair shop.

Exercise 3. Найдите предложения, которые можно переделать, используя *there is/there are*.

1. Trucks have six wheels.
2. Two passengers are in the taxi.
3. This car has three doors.
4. His van is in the repair shop.
5. These autos have new windows.

Exercise 4. Переведите

- a) моя машина, ваши фургоны, его гараж, их автомастерская, ее минивэн, наш автобус, ее (гостиницы) парковка, твой грузовик.
- b) 1. Она хорошо водит машину. 2. В автомастерской много машин. 3. Он ремонтирует их автобус. 4. Это твой внедорожник? – Нет, мой на парковке. 5. В его семье у каждого есть своя машина.

Exercise 5. Образуйте правильную форму глагола.

1. There ... (to be) many new cars in the streets.
 2. She ... (to have) her own car.
 3. He ... (to repair) our bus.
 4. They ... (to like) high speed.
 5. We ... (to take) your car.
- Because ours ... (to be) in the repair shop.

Exercise 6. Определите подлежащее и сказуемое в предложениях и переведите их.

1. Several systems power and control automobiles.
2. Each of these major categories includes a number of subsystems.
3. Vehicle is the general word for all types of the road transport.
4. A modern plane carries a lot of heavy electronic equipment.

Exercise 1. Read the words and word combinations.

to remove - убирать	above – над
beneath – ниже, под	to include – включать, содержать
to appear – появляться	the latter – последний
space – место, пространство	to direct – управлять
to miss – пропускать (об уроке), упускать (об автобусе), глохнуть (о двигателе)	

Exercise 2. These terms you should know.

to power – приводить в действие, обеспечивать энергией
 parts – детали
 gas (сокращение от gasoline) – топливо, бензин
 manual transmission (gear box) – механическая коробка (переключения) передач
 air filter – воздушный фильтр, воздухоочиститель
 intake manifold – впускной коллектор
 power plant – силовая установка
 power train – силовая передача; трансмиссия
 running gear – ходовая часть
 fuel – топливо
 exhaust – выхлоп
 lubrication system – система смазки
 coolant system – система охлаждения
 drive system – привод
 clutch – сцепление; включать сцепление
 differential – дифференциал; дифференциальный механизм
 drive shaft – карданный вал, ведущий вал, приводной вал
 suspension – подвеска
 tire (или tyre) – шина, покрышка
 support – опора, стойка
 steering system – система рулевого управления
 brake system – тормазная система
READ AND TRANSLATE THE TEXT

Automobile itself

The work of several systems powers and controls automobile. This diagram shows the parts of a car with a gas engine and manual transmission. The air filter and carburetor *have been removed* to show the parts beneath but usually appear in the space above the intake manifold. The major systems of the automobile are the power plant, the power train, the running gear, and the control system. Each of these major categories includes a number of subsystems. The power plant includes the engine, fuel, electrical, exhaust, lubrication, and coolant systems. The power train includes the transmission and drive systems. The latter includes the clutch, differential, and drive shaft. Suspension, stabilizers, wheels, and tires are all part of the running gear, or support system. Steering and brake systems are the major components of the control system with the help of which the driver directs the car.



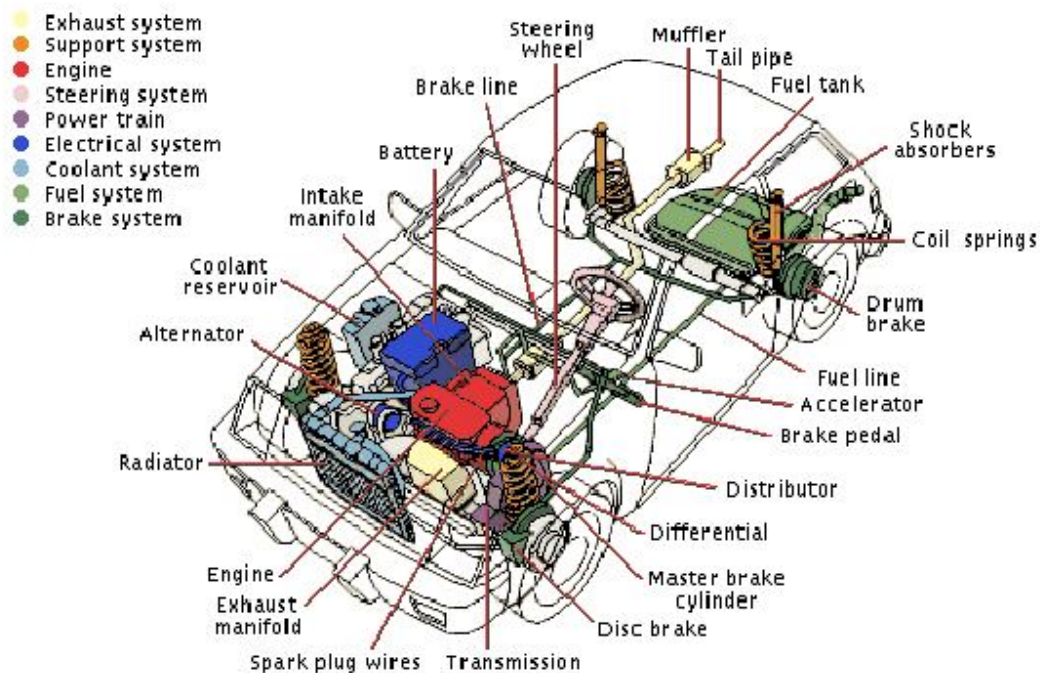


Figure 1. Automobile systems.

ANSWER THE QUESTIONS:

1. Look at the diagram and describe one of the automobile systems. 2. What are the major systems? 3. Why don't we see air filter and carburetor? 4. How does driver direct the car? 5. Name all the parts of the running gear.

Vocabulary exercises

Exercise 1. Переведите:

Автобус, водить авто, авария, колесо, дверь, машина, грузовик, перевозить грузы, пассажиры, окно, дорога, парковка, водитель, ехать на машине.

Exercise 2. Составьте свои предложения со словами из упражнения 1.

Exercise 3. Просмотрите таблицу, затем в предложениях после таблицы выберите подходящее слово, переведите предложения.

Bus	Train	Plane	Taxi	Bicycle	Car
driver	driver	pilot	driver	cyclist	driver
to drive	to drive	to fly	to drive	to ride	to drive
fare	fare	fare	fare	-	-
to catch/take	to catch/take	to take	to take	to go on (my)	to go by
to get on/off	to get on/off	to get on/off	to get in/out	to get on/off	to get in/out
bus station	railway station	airport	taxi rank	-	-

1. You shouldn't *ride* / *drive* a motorbike without a crash helmet.
2. She told him *to get in* / *get on* the car and fasten his seat belt.

3. Bus *fares / tickets* are getting more expensive.
4. Trains to the airport *travel / run* every half hour.
5. The pilot couldn't *drive / fly* the plane in such bad weather.
6. We were late, so we *took / caught* a taxi.

Exercise 4. Переведите:

Stop – to stop, injure – to injure, damage – to damage, move – to move, brake – to brake, to power – power, to clutch – clutch, to steer - steer.

Exercise 5. Переведите предложения. Составьте свои предложения с «to miss».

1. This engine missed suddenly.
2. He missed several lessons last week, because he was ill.
3. I left my house a bit late and I missed the bus.

Grammar exercises

Exercise 1. Поставьте следующие глаголы в Past Simple.

To power, to take, to remove, to catch, to fly, to drive, to tell, to damage, to injure, to have, to be, to appear, to direct, to go, to get, to break, to brake, to ride, to miss, to see, to look, to describe, to move, to come, to refuse, to carry.

Exercise 2. Раскройте скобки и поставьте глагол в форму Past Simple Tense.

1. In Russia, in the 1780s, Ivan Kulibin (to develop) a human-pedaled, three-wheeled carriage with modern features. 2. In November 1881 French inventor Gustave Trouvé (to demonstrate) a working three-wheeled automobile. 3. Karl Benz (to build) his first automobile in 1885 in Mannheim. 4. Daimler and Maybach (to found) Daimler Motor Company (DMG) in Cannstatt in 1890 and under the brand name, Daimler, (to sell) their first automobile in 1892. 5. Daimler (to die) in 1900 and later that year, Maybach (to design) an engine named Daimler-Mercedes. 6. Karl Benz (to propose) co-operation between DMG and Benz & Cie when economic conditions (to begin) to deteriorate in Germany following the First World War. 7. First company formed exclusively to build automobiles (to be) Panhard et Levassor in France, which also (to introduce) the first four-cylinder engine. 8. In 1949 the United States (to see) the introduction of high-compression V8 engines and modern bodies from General Motors' Oldsmobile and Cadillac brands. 9. Throughout the 1950s, engine power and vehicle speeds (to rise), designs (to become) more integrated, and cars (to spread) across the world. 10. The market (to change) in the 1960s, as Detroit (to begin) to worry about foreign competition, the European makers (to adopt) ever-higher technology, and Japan (to appear) as a serious car-producing nation.

Exercise 3. Прочитайте и переведите диалог. Составьте свой диалог, используя слова урока.

A: How did you get here?

B: I came by bus.

A: And the others?

B: Sue and John came by car.

A: And Paul?

B: He missed the bus, so he had to take a taxi.

Exercise 4. Найдите в каждом предложении глагол в прошедшем времени, назовите исходную форму и переведите.

An Accident

There was a serious accident on one of the main roads into Stuttgart this morning. An old lorry (truck) broke down in the middle of the road, and the driver couldn't move it. It was eight o'clock, the middle of the rush hour, so it soon created a terrible traffic jam. Drivers got very angry and a man in a Mercedes tried to go round the lorry. Unfortunately another car *was coming* in the opposite direction. The driver braked hard and tried to stop, but he couldn't prevent the accident – the driver of the Mercedes was all right, but the other one injured his leg. Both cars *were damaged*.

Words:

main road – главная дорога, магистраль, шоссе

to move – двигаться

to break down – ломаться

rush hour – час пик

could (форма прошедшего времени от “can”) – смог, был в состоянии

traffic jam – дорожная “пробка”, “затор” (в уличном движении)

to prevent – предотвращать

Exercise 5. Разделите приведенные ниже слова на три группы, определяя по суффиксу часть речи - существительное, прилагательное или наречие. Переведите слова.

Organization, efficient, middle, equipment, engine, completely, operator, remove, usually, operation, carburetor, electronic, necessary, automobile, generally, different.

Exercise 6. Образуйте (и переведите) имена существительные от приведенных ниже глаголов с помощью суффиксов:

A. -er, -or: to control, to design, to use, to manufacture, to work, to protect, to transmit, to drive.

B. -tion, -sion: to organize, to combine, to apply (ic), to represent, to produce, to operate, to invent.

C. -ment: to require, to measure, to equip, to improve, to develop, to displace, to move.

LESSON III

Exercise 1. Read the words and combinations

viable –жизнеспособный

sustainable –экологически устойчивый

efficient –эффективный

conventional –обычный, традиционный

Exercise 2. These terms you should know

fossil fuel – ископаемое топливо

hybrid electric vehicle –гибридный электромобиль

hydrogen car –водородный автомобиль

compressed-air car – пневматический автомобиль

propulsion system –силовая установка

rechargeable energy storage system (RESS) – перезаряжаемая

энергоаккумулирующая система

charging unit -зарядное устройство



internal combustion engine – двигатель внутреннего сгорания

idle -холостой ход

READ AND TRANSLATE THE TEXT

Auto of the Future. Hybrids.

The car of the future will differ greatly from those we get used to. They are much more important than ever before. How will they run? How viable will they be and how will they contribute to a cleaner environment and end our international dependence on oil and other fossil fuels? Future car technologies include new energy sources and materials. They are developed in order to make automobiles more sustainable, safer, more energy efficient, or less polluting. One major problem of the carmakers will be the source of power to drive the engine. We know some alternative fuel vehicles, such as hybrid electric vehicle, hydrogen cars, and compressed-air cars. A hybrid electric vehicle (HEV) is a hybrid vehicle. It combines a conventional propulsion system with a rechargeable energy storage system and provides better fuel economy than a conventional vehicle. It includes a propulsion system additional to the electric motors. HEV's engine is smaller than a non-hybrid petroleum fuel vehicle and may be run at various speeds, providing more efficiency.

ANSWER THE QUESTIONS:

1. What do you know about future car technologies? 2. What does HEV mean? 3. What is the main problem of any future car? 4. Describe the car of the future. 5. What is a hybrid car? 6. What features does a hybrid car have? 7. What kind of fuel does it use?

Vocabulary exercise

Exercise 1. Find proper definition

1.Engine	a) a machine that converts electrical energy into mechanical energy
2. alternative fuel	b) any material or substance that can be used as a fuel, other than conventional fuel
3. battery	c) a rechargeable device for storing electrical energy in the form of chemical energy
4. generator	d) any device for converting mechanical energy into electrical energy by electromagnetic induction
5. motor	e) the act or quality of acting or moving fast
6. petroleum	f) any device that converts another form of energy into mechanical energy to produce motion
7. speed	g) flammable liquid that occurs naturally in deposits, usually beneath the surface of the earth

Exercise 2. Speak on the following topics. Using the following words and word combinations: fuel consumption, safety, speed, comfort, expensive, cheap, control, driver's skill, progress, development, design, mobility, entertainment.

1. The advantages and disadvantages of future cars.
2. Alternative fuel vs. Conventional fuel

Exercise 3. Translate from Russian into English.

1. Современные двигатели потребляют значительно меньше топлива, чем двигатели прошлых лет. 2. Чем быстрее развиваются автомобильные технологии, тем мощнее становятся автомобили. 3. В будущем, будут два варианта двигателей. Это электрический и водородный двигатели. 4. Электрический двигатель будет малых размеров, и будет питаться от обычной электрической розетки. 5. В будущем производство водорода будет дешевым. Водородный двигатель будет выгодным для большинства автомобилистов. 6. Двигатель будет экономичным, экологически чистым и достаточно мощным. 7. В будущем, у водителя появится большое количество электронных помощников. 8. В автомобиле почти не будет механических частей – всё заменит электроника. 9. Компьютеры будут следить за автомобилем и за водителем, а также за ситуацией на дороге. 10. В далеком будущем электроника заменит человека, водителю нужно будет задать маршрут, а автомобиль сам его довезет до места назначения.

Exercise 4. Write essay on the topic "The car of the future as I see it" using Future Simple.

Grammar exercises

Exercise 1. Переведите предложения.

1. Trains are more reliable than buses.
2. Train fares are more expensive than bus fares.
3. Train journeys are more interesting than bus journeys.
4. Railway stations are nicer places than bus stations.
5. You get to the place *you are going* faster by taxi than by car.

Exercise 2. Вспомните значение следующих прилагательных и преобразуйте их в сравнительную и превосходную степени.

A: small, fast, new, long, late, wide, young, easy, great, dull, rich, large, old, broad.

B: frequent, reliable, possible, basic, common, modern, general, necessary, successful.

C: good, bad, little, many, far.

Exercise 3. Переведите предложения:

A) с английского на русский язык

1. He finds an used car at lower costs.
2. The better the engine operator (механик) knows about the main principles of the engine operation, the better he can repair and adjust it.
3. A computer checks all car systems much easier than people.
4. Nowadays the carmakers try to include as much as possible electronics in a car.
5. The more you know about the cars, the better you repair them.
6. Such means make automobile look more attractive to the customer.
7. Our engineers introduce one of the most efficient engines.

В) с русского на английский язык

1. Существует много различных автомобилей.
2. Двигатель – это самый основной компонент машины.
3. Чем выше скорость машины, тем дольше она тормозит.
4. Эти минивены стоят от 4500 до 10000 долларов.
5. У этого внедорожника более лучшие характеристики.

Exercise 4. Переведите предложения, обращая внимание на употребление слов one, that, those.

1. One more advantage of this car is that its engine consumes less fuel.
2. In this van the transmission is a manual one.
3. One uses jack (домкрат) to pump up a tyre (накачивать шину).
4. In one hour the engine operator will repair your car.
5. One of the most important developments of the 20th century is an automobile.
6. This van differs from yours.
7. She says that it is the latest model.
8. This is the SUV that your brother will buy.
9. Some features of this minivan are better than those of that one.
10. Minivans have a size, power and cost between those of vans and a passenger car.
11. Look at the other alternatives to choose the best one.
12. There are several methods to repair this engine and we will look at each method with its advantages and disadvantages.

LESSON IV

Exercise 1. Read the following words and word combinations.

to build – строить

to cool – охлаждать

to transmit – передавать, переносить

to monitor – следить, наблюдать

aspect – подход, сторона

passenger – пассажир

Exercise 2. These terms you should know.

to lubricate – смазывать

engine – двигатель

axles - оси

spring – рессора

shock absorber – амортизатор

safety features – меры обеспечения безопасности

bumper – бампер

air bag – пневмоподушка, подушка безопасности

to cushion – смягчать (удар)

bump – столкновение

heavy load - нагрузка большая

to propel – приводить в движение

seat belt – ремень безопасности

READ AND TRANSLATE THE TEXT

The construction of automobile

The automobile is built around an engine. Various systems supply the engine with fuel, cool it during operation, lubricate its moving parts, and remove exhaust gases. The engine produces mechanical power. Then it is transmitted to the automobile's wheels through a power train. The power train includes a transmission, one or more driveshafts, a differential gear, and axles. Suspension systems include springs and shock absorbers. The automobile's suspension system cushions the ride and helps protect the vehicle from bumps, heavy loads, and other stresses. Wheels and tires support the vehicle on the roadway. Wheels propel the vehicle forward or backward.



Steering and braking systems provide control over direction and speed. An electrical system has many different functions. It starts and operates the engine. The electrical system also monitors and controls many aspects of the vehicle's operation. It powers such components as headlights and radios. Safety features such as bumpers, air bags, and seat belts help protect passengers in an accident.

ANSWER THE QUESTIONS:

1. What is the most important part of a car? 2. Name the auto's systems. 3. What do these systems do? 4. Tell in a few words about any system. 5. What does the engine produce?

Vocabulary exercises

Exercise 1. Переведите слова. Составьте свои предложения со словами.

Смазывать, система смазки, защищать, ремень безопасности, пристегнуть ремень безопасности, подушка безопасности, выхлопные газы, двигаться вперед и назад, выполнять разные функции, тормозная система, подвеска, бампер, фара, транспорт, пассажиры, смягчать удар, столкновение, система рулевого управления.

Exercise 2. Translate into Russian the definition of the word and guess what it is.

- 1) a belt or strap worn in a vehicle to restrain forward motion in the event of a collision
- 2) a horizontal metal bar attached to the front or rear end of a car, lorry, in order to protect against damage from impact
- 3) a safety device in a car, consisting of a bag that inflates automatically in an accident and prevents the passengers from being thrown forwards
- 4) a powerful light, equipped with a reflector and attached to the front of a motor vehicle
- 5) any device designed to absorb mechanical shock, especially one fitted to a motor vehicle to damp the recoil of the suspension springs
- 6) a person traveling in a car that is not driven by him
- 7) a rubber ring placed over the rim of a wheel of a road vehicle to provide traction and reduce road shocks

Exercise 3. Answer the questions using an active vocabulary of 1-4 lessons.

1. Do you or your family have a car?
2. Can you drive a car? If so, what kind of car do you have?
3. Is it a standard (manual shift) or automatic shift?
4. Which do you like best, a standard or automatic shift car?
5. What are the advantages of owning a car?
6. What are the disadvantages of owning a car?
7. Are the drivers in your area where you live good drivers?
8. Do you know anything about repairing or maintaining a car?
9. What do you know how to do? (Concerning car's repair and maintenance)
10. Where did you learn how to do this?
11. Do you enjoy repairing cars? Why?
12. What are some things you do to maintain your car?

13. Do you prefer driving or riding public transportation?
14. What kind of car do you prefer?
15. What are the speed limits in your country?
16. At what age can you get a license in your country?

Exercise 4. Сгруппируйте слова из таблицы относительно того вида транспорта, к которому они относятся:

1. car	2. bus	3. train	4. plane	5 bicycle	6. Ferry
Handlebars	Carriage	horn	Tunnel		
One-way street	Coach	cargo	Lay-by		
Slip road	Traffic lights	port	porter		
Platform	Life jacket	check-in desk	cabin		
Seat belt	Service station	traffic jam	deck		
Crash helmet	Season ticket	spare tyre	track		
Runway	Gangway	timetable	Jetty		
Joyrider	trolley	hand luggage	Trailer		
	tyres	customs			

Exercise 5. Заполните пробелы предложениями to, into, on, by, along, over, through.

1. Jack usually goes ____ work ____ car.
2. I opened the door and went ____ the room.
3. He walked ____ the road.
4. Don't wait outside! Come ____ the house.
5. How did you go to Paris? ____ plane.
6. The train will come ____ the tunnel.
7. Sorry! I'm late. I missed the bus, so I had to come ____ foot.
8. They walked ____ the bridge.

Grammar exercises

Exercise 1. Переведите предложения с пассивным залогом.

1. This boat is powered with the latest improved model of our engine.
2. Most automobiles in use today are propelled by gasoline or diesel internal combustion engines.
3. The carburetor was used on nearly all road car engines until the 1980s.
4. The first internal combustion engine was fueled by a mixture of hydrogen and oxygen.
5. The car can be powered by air, or by air combined with gasoline/diesel/ethanol or electric plant and regenerative braking.
6. The first motorcycle was designed and built by the German inventors Gottlieb Daimler and Wilhelm Maybach.
7. Trucks are mainly used for cargo transport.
8. Historically, the types and features of buses have developed according to local needs.
9. Buses were fitted with technology appropriate to the local climate or passenger needs.
10. The left wing of this damaged car has not been replaced yet.

Exercise 2. Поменяйте форму активного залога на пассивный залог по образцу.

Например: He repairs the car. – The car is repaired by him.

1. Karl Benz built a gasoline-powered car.
2. Ferdinand Porsche pioneered electric cars, airplane engines, front-wheel drive hybrid cars, and aerodynamic shapes for other people.

3. Computers and electronics in a car will replace a driver in future.
4. In 1889, Daimler and Maybach made their first purpose-built automobile.
5. In 1901, British inventor Frederick William Lanchester patented disc brakes.
6. Bosch developed complete ignition systems.
7. The electrical system controls many aspects of the vehicle's operation.
8. Gottlieb Daimler did not invent the internal combustion engine, but he improved it.

Exercise 3. Переведите предложения с русского на английский язык, используя конструкции пассивного залога.

1. Компания "Киа" была основана в 1944 году. 2. Модели «Киа Моторс» создавались на базе автомобилей фирмы "Мазда". 3. Внедорожник "Киа Спортэдж" (Sportage) выпускается в Германии. 4. "Спортэдж" оснащается 4-цилиндровым 2-литровым бензиновым двигателем. 5. На "Спортэдже" устанавливаются гидроусилитель руля, антиблокировочная система тормозов, подушка безопасности для водителя, электрические стеклоподъемники, центральная блокировка дверных замков. 6. Двигатель этой машины был проверен прошлый раз. 7. Фильтр для масла будет заменен через месяц. 8. После аварии правое крыло автомобиля было заменено полностью. 9. Дополнительные ремни безопасности установлены для пассажиров. 10. На данной машине все системы контролируются компьютером.

Exercise 5. Измените предложения из текста по образцу.

For Example: Baggage handlers load the luggage. - The luggage is loaded by the baggage handlers.

Airport

When a plane lands at an airport, many jobs are done before it takes off again. Cleaners clean the cabin, and upholsterers repair any damaged seats. Lorries and vans bring things to the plane. A fuel tanker refuels the plane and a water tanker fills the water tanks. A van delivers the food and drinks. A bus brings the passengers to the plane. Sometimes children travel on their own. A stewardess looks after these children. Baggage handlers load the luggage. While the engineer checks the plane, the pilot checks the instruments.

Words:

damaged – поврежденные

to land – приземляться

job – работа

to take off – взлетать

cleaner – уборщик

upholsterer – обойщик; драпировщик

water tank – бак для воды

to refuel – дозаправлять(ся) топливом

to deliver – доставлять

baggage, luggage - багаж

handler – сортировщик, раскладчик

to load - грузить

fuel tanker – цистерна для перевозки топлива

LESSON V

Revision

Grammar exercises.

Exercise 1. Распределите следующие существительные в соответствующий столбик исчисляемых или неисчисляемых существительных.

Fuel, air, tool, truck, pollution, accident, cargo, gas, filter, exhaust, road, traffic, oil, tank, driver, job, wheel, bumper, lubrication, engine

Countable nouns	Uncountable nouns

Exercise 2. Вставьте наречие которое необходимо

much/many/little/few/a little/ a few

1. I need *much/many* fuel to get to Kiev by car.
2. Give me *a few/ a little* information about your engine.
3. Hurry up! We've got *little/few* time.
4. There is *little/few* traffic in villages.
5. This model of car isn't very popular, so *little/ few* people buy it.
6. This car is expensive to run. It uses *much/many* petrol.
7. This is not the first time the car has broken down. It has happened *a few/ a little* times before.
8. *A lot of/Much/Many* people do not like driving.
9. There are too *much/many* cars and lorries on the streets of our town.
10. Not so *many/much* students have cars nowadays.

Exercise 3. Переделайте предложения используя наречия *little/few*

1. My new car uses not much petrol so it's more economical.
2. You may not see many Peugeot 405s on the road today.
3. I don't have much need to use my car in town when public transport is so good.
4. I have to admit that there are not many occasions when I walk anywhere on foot.

Exercise 4. Образуйте от следующих глаголов форму инфинитива, Present Participle, Past Participle, Past Simple.

Пример: work – to work – working – worked – worked

break – to break – breaking – broken - broke

Buy, drive, mix, move, build, invent, repair, load, produce, take, replace, cost, be, fix.

Exercise 5. Переведите следующие глаголы в соответствующем времени, определите видовременную форму.

Is produced, was working, uses, maintained, was checked, will be filled up, paid, am accepting, were driving, will move.

Exercise 6. Прочтите диалог, поставьте глаголы в скобках в Present Simple или Present Continuous.

Marco: Hi Julie. Is Don there?

Julie: He can't come to the phone. He _____ a shower. (to take)

Marco: Maybe you can help me. I'm sure you _____ a lot about cars. (to know)



Julie: Well, that _____. Why? Are you going to buy a car? (to depend)

Marco: Yes I am. I _____ much money, so it has to be a used car. Any suggestions? (to have – negative)

Julie: You have to be more precise. First of all, tell me how much money you _____ to spend (to want)

Marco: About five thousands dollars. I want a small, economical car that _____ little maintenance. (to require)

Julie: Five thousands dollars! It's not much, but you can probably find a used Honda Civic for that price. It's a very dependable car. My friend Kate _____ an old Honda Civic and she's very happy with it. (to have)

Marco: Ok. I don't suppose she _____ to sell it. (to plan)

Julie: No, but you can find one very easily. But maybe you should speak to Don. He _____ into the room now. Hey, Don! Marco's on the phone. He wants to buy a used car. (to come).

Don: Hey, Marco. How's it going? Is it true that you _____ for a used car? (to look)

Marco: Sure is. I _____ a car to get a job. Any suggestions? (to need)

Don: My brother Bill _____ his car. It's a 94 Honda Civic. (to sell)

Marco: Sounds interesting. I suppose he _____ a new car? (to buy)

Don: No. Lucky him! He _____ jobs and with his new job he gets a company car. (to change)

Marco: Do you know how much he _____ for his Civic (to ask)

Don: No, but I can ask him this evening. Julie and I _____ with him and his wife. (to go)

Marco: Ok. Talk to you Later. Thanks.

A used car – б/у автомобиль

Exercise 7. Поставьте глаголы в скобках в Past Simple или Past Continuous.

A policeman is asking a witness about an accident.

Policeman: Where were (be) you when you _____ (see) the accident, Sir?

Witness: I _____ (stand) on the corner of Jameson Street.

Policeman: What exactly _____ (happen)?

Witness: Well, a boy _____ (ride) his bicycle along the road towards the traffic lights when suddenly a car _____ (drive) quickly around the corner. The driver _____ (lose) control and _____ (hit) the boy.

Policeman: _____ (boy/cycle) fast?

Witness: No, not at all.

Policeman: _____ (anyone else/see) the accident?

Witness: No, I don't think so.

Policeman: Thank you very much for *your* help, Sir.

Exercise 8. Составьте предложения из слов в скобках. Поставьте глагол в нужную форму Past Simple или Past Continuous. **Пример:** it/begin/ to rain when I / walk home – It began to rain when I was walking home.

1. I / drive / home when I / ran out of gas.
2. While Jim / work/ in Chicago, he / buy his first car.
3. When Diego / loose the race, he almost / cry
4. Jane / plan / her day while she / drive to work.
5. We/ see / an accident when we / wait / for the bus.

Exercise 9. Заполните пропуски, используя Participle I, Participle II. (-ed/-ing) и переведите.

a satisfi_ customer	well-design_ electric
load_ trunk	motor__ pioneers
self-mov_ vehicle	motorize_ carriage
underdevelop_ industry	grow_ competition
adapt_ for ordinary road conditions	reduc__ fuel consumption
driv_ belt	integrat_ bumper
self-propell_ vehicle	antilock brak_ system
distinguish_ inventors	

Exercise 10. Переведите на английский язык, используя времена Present Simple, Present Continuous, Past Simple, Past Continuous, Future Simple.

1. Infiniti – это подразделение (subdivision) компании Nissan, специализирующиеся на выпуске автомобилей класса "люкс".
2. В середине 80-х Nissan Motor в тайне проектировал и готовил к производству новый автомобиль высшего класса, в то время как главный конкурент – Toyota готовила аналогичный автомобиль.
3. У этого автомобиля есть традиционные для марки роскошь салона и идеально настроенная ходовая часть, дополненная 3,0-литровым двигателем, разгоняющим автомобиль до 240 км/ч.
4. Infiniti FX45 - своего рода гибрид спортивного универсала и внедорожника.
5. Он будет оснащаться сверхмощным двигателем с пятиступенчатой автоматической коробкой.

LESSON VI

Exercise 1. Read the following words and word combinations.

to derive from - получать, извлекать

cast iron - чугун

to attach - прикреплять(ся)

to house - размещать

alloy - сплав

Exercise 2. These terms you should know.

power plant - силовая установка

heating system – система обогрева

internal-combustion engine – двигатель внутреннего сгорания

transmission – передача

cycle – цикл

cylinder head – крышка цилиндра

piston - поршень

inlet (intake) valve - впускные клапана

outlet (exhaust) valve – выпускные клапана

engine block – блок двигателя

chassis – шасси

stroke - такт

downstroke - ход поршня вниз

crankshaft - коленвал

power stroke - рабочий ход

to evacuate - выпускать

silencer, muffler - глушитель

pipng - труба, трубопровод

straight line - ряд

perforated plates - перфорированная панель

READ AND TRANSLATE THE TEXT

camshaft - распредвал

passageway – перепускной клапан

ignition – система зажигания

to seal - изолировать

duct – трубка

two banks – два ряда

Power System

The power plant of the automobile includes an engine, fuel supply and exhaust, cooling and heating systems. Let's speak about the internal-combustion engine, because this is the most common engine. Gasoline internal-combustion engines power most automobiles, but some engines use diesel fuel, electricity, natural gas, solar energy, or fuels derived from methanol (wood alcohol) and ethanol (grain alcohol).

The basic components of an internal-combustion engine are the engine block, cylinder head, cylinders, pistons, valves, crankshaft, and camshaft. The lower part of the engine, called the engine block, houses the cylinders, pistons, and crankshaft. The components of other engine systems bolt or attach to the engine block. The block is manufactured with internal passageways for lubricants and coolant. Engine blocks are made of cast iron or aluminium alloy.

The upper part of the engine is the cylinder head. It seals the tops of the cylinders. Pistons compress air and fuel against the cylinder head before ignition. The top of the piston forms the floor of the combustion chamber. Fuel vapor enters and exhaust gases leave the combustion chamber through openings in the cylinder head controlled by valves. Inlet (intake) valves open to allow fuel to enter the combustion chambers. Outlet (exhaust) valves open to let exhaust gases out.

You know that the greatest number of cars use piston engines. The four-cycle piston engine requires four strokes of the piston per cycle. The first downstroke draws in the petrol mixture. The first upstroke compresses it. The second downstroke—the power stroke—following the combustion of the fuel, supplies the power, and the second upstroke evacuates the burned gases. Intake and exhaust valves in the cylinder control the intake of fuel and the release of burned gases. These gases escape with the sudden opening of the exhaust valve. They rush to a silencer (muffler), an enlarged section of piping containing expanding ducts and perforated plates through which the gases expand and are released into the atmosphere. Greater smoothness of operation of the four-cycle engine were provided by the development of the four-cylinder engine, which supplies power from one or another of the cylinders on each stroke of the cycle. A further increase in power and smoothness is obtained in engines of 6, 8, 12, and 16 cylinders, which are arranged in either a straight line or two banks assembled in the form of a V.

ANSWER THE QUESTIONS:



1. What does the power plant include? 2. What is the most common type of the engines?
 3. How does the four-cycle piston engine work? 4. What is a silencer? 5. What types of fuel do you know? 6. Describe the internal-combustion engine.

Vocabulary exercises

Exercise 1. Переведите слова. Составьте свои предложения со словами

Расширяющиеся трубки, сгорание топлива, отработавший газ, двухрядный двигатель, система зажигания, двигатель внутреннего сгорания, дизельное топливо, главный компонент, обеспечивать энергией, глушитель, поршень, впускной клапан, ход поршня вверх, ходовая часть, мощность.

Exercise 2. Translate from Russian into English:

1 Силовая установка, передача мощности, ходовая часть и система контроля являются основными компонентами автомобиля. 2. Впускные клапана контролируют подачу топлива, а выпускные клапана контролируют выброс отработанных газов. 3. Силовая установка включает в себя двигатель, карбюратор, систему зажигания, систему охлаждения, систему смазки двигателя и другое. 4. Глушитель - это устройство, через которое отработавшие газы выпускаются в атмосферу.

Exercise 3. Match the word and its meaning.

1) power plant	a) the steel frame, wheels, engine, and mechanical parts of a motor vehicle, to which the body is attached
2) heating system	b) any device designed to reduce noise, especially the tubular device containing baffle plates in the exhaust system of a motor vehicle
3) ignition	c) the equipment supplying power to a particular machine or for a particular operation or process
4) valve	d) device or system for supplying heat
5) chassis	e) the process of igniting the fuel in an internal-combustion engine
6) silencer	f) any device that shuts off, starts, regulates, or controls the flow of a fluid

Exercise 4. Translate from English into Russian without a dictionary. Remember your active vocabulary from lesson 1 - lesson 6.

A Although it is Karl Benz who is credited with the first prototype of the modern car, the first self-propelled vehicle was invented more than 100 years earlier. However unlike the "Benz model", most of the machines designed during that period were steam-propelled.

B The very first self-propelled car was built in 1769, when Nicolas Cugnot, a French military engineer designed a steam powered road-vehicle. It had three wheels

with the engine in the front along with the boiler. While Cugnot's 'car was capable of attaining speeds of up to 6 km/hour, it was far too heavy and slow to be of practical use.

C Issac de Rivaz, designed several successful steam-run cars towards the late 18th century. In 1807 he designed an "internal combustion engine". The engine was gas driven and used a mixture of hydrogen and oxygen to generate energy. De Rivaz used this engine to develop a car, and the occasion was historic. This was the first vehicle to run on an internal combustion engine.

D The first successful internal combustion engine was a two-stroke gas driven engine patented by Jean Joseph Etienne Lenoir of Belgium in 1860. In 1862 he built an experimental vehicle driven by his gas-engine, which managed to achieve a speed of 3 km/hour. By 1865 around 500 of these engines were in use in Paris alone. These heavy and crudely built steam-driven vehicles must have badly damaged roads, and to some extent the increase was possibly justified.

E The first practical "four-stroke" engine was patented by the Otto and Langen Company of Deutz, Germany. Nikolaus Otto had a model engine built and improved upon the gas engine, making it a practical power source. The four-stroke Otto Engine was invented in 1876, and a large number of engines were produced under the patent of Otto and Langen. It was however, a German engineer named Gottlieb Daimler, who, carried out much of the development work on the engine. Daimler was at the time employed with Otto and Langen, and a substantial credit for the success is due to him.

Exercise 5. What are the four strokes of a four stroke engine (in order) and what happens during each stroke?

_____ - _____

Grammar exercises

Exercise 1. Translate the following word combinations from English into Russian

Power plant, fuel consumption, horse power, direct injection, air conditioner, air cleaner, automatic transmission fluid, power output, crankshaft position, instrument panel, electric control unit, exhaust gas recirculation, electronic control transmission, front-wheel drive, idle air control, mixture control, mixture control radiator, fan motor.

Exercise 2. Переведите следующие предложения, обратите внимание на перевод “цепочек существительных”.

1. Gasoline internal-combustion engines power most automobiles, but some ones use diesel fuel, electricity, natural gas or solar energy. 2. Fuel-injection systems or, in older cars, a carburetor deliver fuel vapour from the gas tank to the engine cylinders. 3. An electric current flows through a spark plug to ignite the vapour. 4. The blocks in most internal-combustion engines are straight line designs or V designs. 5. Straight line configurations of six or eight cylinders require long engine compartments found more often in trucks than in cars.

Exercise 3. Преобразуйте предложения, заменив активный залог страдательным.

1. The rotating crankshaft causes pistons to move. 2. The pistons compress the vapour inside the cylinders. 3. The fuel mixture combusts and creates hot gases. 4. Hot gases push the pistons down the cylinders and cause the crankshaft to rotate.

Exercise 4*. Переведите с русского на английский язык.

1. Эта 2-местная спортивная машина была выпущена фирмой БМВ в 1936 году, когда фирма уже имела высокий авторитет на скоростных трассах Европы. 2. Прототипы БМВ-328 испытали в гонке на Большой приз Франции на треке в Монлери (Montlhery). 3. Серийная модель поступила в продажу год спустя. 4. Она оснащалась 6-цилиндровым 2-литровым двигателем, который устанавливался на седане БМВ-326. 5. Мощность мотора повысили с 50 до 80 л.с. 6. Это стало возможным благодаря применению трех карбюраторов вместо двух, новой полусферической форме камер сгорания и V-образной установке верхних клапанов вместо обычной параллельной.

Lesson VII

Exercise 1. Read the following words and word combinations.

previous - предыдущий

to find out - выяснять

to rely on - полагаться на

toxic emission - выброс токсичных веществ

Exercise 2. These terms you should know.

rotary engine – роторно-поршневой двигатель, двигатель Ванкеля

battery – аккумулятор

to recharge – подзаряжать

fuel efficiency - топливная экономичность (двигателя)

READ AND TRANSLATE THE TEXT

Engine Types

There are different types of engines. From the previous lesson you've found out that the internal-combustion engine is the most common one in the modern automobiles. Its basic components and the principles of the operation were described.

Engines become more powerful, and use more fuel, as the size and number of cylinders increase. The information below describes some other types of the engines.

Diesel engines are common in large trucks or buses. They are similar to gasoline internal-combustion engines, but they have a different ignition system. Diesels compress air inside the cylinders with greater force than a gasoline engine does, producing temperatures hot enough to ignite the diesel fuel on contact. Some cars have rotary engines, also known as Wankel engines. Rotors instead of pistons are used by such engines.

Electric motors are very popular nowadays. Electric power supplied by batteries runs the motor, which rotates a driveshaft, the shaft that transmits engine power to the axles.

Automobiles that combine two or more types of engines are called hybrids. A typical **hybrid** is an electric motor with batteries that are recharged by a generator run by a small gas- or diesel-powered engine. By relying more on electricity and less on fuel combustion, hybrids have higher fuel efficiency and fewer toxic emissions.

ANSWER THE QUESTIONS:

1. Does more powerful engine use more fuel? 2. What is the difference between the internal-combustion engine and diesel engine? 3. What is the advantage of electric motors? 4. Why do you think hybrids become more popular nowadays?

Vocabulary exercises

Exercise 1. Переведите слова. Составьте свои предложения со словами.

Двигатель внутреннего сгорания, ротор, поршень, заряжать, аккумулятор, передавать энергию, зажигать, комбинировать несколько типов двигателей, дизельный, бензиновый, запускать.

Exercise 2. Match the words and its meaning

1) emission	a) the revolving arm of the distributor of an internal-combustion engine
2) cylinder	b) an electric current or charge
	c) a substance, fluid, etc., that is emitted; discharge
3) rotor	d) the shaft that transmits power from the gearbox to the differential gear in a motor vehicle
4) driveshaft	e) the chamber in a reciprocating internal-combustion engine, pump, or compressor within which the piston moves
5) electricity	

Exercise 3. Guess the quiz.

1. Who developed rotary engine?

- a. Dr. Feliks Wankel
- b. Rudolf Diesel
- c. Henry Ford

2 . What is a rotary engine sometimes called?

- a. A diesel engine
- b. a piston engine
- c. a wankel engine

3. Which car manufacturer has been a pioneer in developing production cars with rotary engine?

- a. Ford
- b. Chrysler
- c. Mazda

4. Does a diesel engine have a spark plug?

- a. yes
- b. no

Exercise 4. Translate from Russian into English.

1. Двигатель — это устройство, преобразующее какой-либо вид энергии в механическую. 2. В 1784 году английский механик Джеймс Уатт создал паровую машину, названную универсальным паровым двигателем. 3. В 1816 шотландец Роберт Стирлинг предложил двигатель внешнего сгорания, называемый сейчас его именем Двигатель Стирлинга. 4. Проект первого двигателя внутреннего сгорания (ДВС) принадлежит известному изобретателю Христиану Гюйгенсу. Этот проект был предложен еще в XVII веке. 5. Первый надёжно работавший двигатель внутреннего сгорания сконструировал в 1860 году французский инженер Эжен Ленуар. Двигатель Ленуара работал на газе. 6. Спустя 16 лет немецкий конструктор Николас Отто создал более совершенный 4-тактный газовый двигатель. 7. В 1876 году шотландский инженер Дугальд Кларк испытал первый удачный 2-тактный двигатель. 8. Совершенствованием двигателя внутреннего сгорания занимались многие инженеры и механики. 9. В 1897 году инженер Рудольф Дизель предложил ДВС с воспламенением рабочей смеси в цилиндре от сжатия воздуха, названный впоследствии дизелем. 10. В 1890 году Рудольф Дизель разработал теорию «экономичного термического двигателя», который благодаря сильному сжатию в цилиндрах значительно улучшает свою эффективность.

Exercise 5. Read the story paying attention to the words in bold.

My car was **acting up** recently and wasn't running right, so I took it to a mechanic to have it checked. Every time I tried to start the car, the engine would **turn over** for a second or two and then die. The mechanic pulled the car into his garage to **look things over**. The mechanic **popped the hood**, checked to see if all the **hoses** and belts were in working order, and then tested the car battery and battery cables. After taking a look at things for a few minutes and trying to get the car going, the mechanic **diagnosed** the problem as a bad **alternator**. He said he could fix the problem by replacing the alternator with a new (\$130) or a rebuilt alternator (\$80). Just diagnosing the problem cost \$65, and the **labor** was \$50. I asked the mechanic to **go ahead** and do the repairs, and he said that there was a **30-day warranty** on **parts** and labor. Some mechanics might **overcharge** you for repairs, but the mechanic I go to is fair and does great work.

New words:

to act up – сломаться, барахлить, плохо работать
 to turn over – работать на холостом ходу
 to look smth over – тщательно изучить

to pop the hood – открыть капот

to diagnose – диагностировать

labor – работа

30-day warranty – 30 –дневная гарантия

overcharge – запрашивать завышенную цену

hose - шланг

alternator - генератор

to go ahead - начинать

parts - запчасти

Exercise 6. Translate from Russian into English.

1. В зависимости от конструкции камеры сгорания, существует несколько типов дизельных двигателей: дизель с неразделённой камерой и дизель с разделённой камерой. 2. Принцип работы дизеля с неразделённой камерой состоит в следующем: камера сгорания выполнена в поршне, а топливо впрыскивается в надпоршневое пространство. 3. Главное достоинство минимальный расход топлива. Недостаток — повышенный шум. 4. В настоящее время ведутся интенсивные работы по устранению указанного недостатка. 5. Дизель с разделённой камерой: топливо подаётся в дополнительную камеру. 6. В большинстве дизелей такая камера (она называется вихревой) связана с цилиндром специальным каналом так, чтобы при сжатии воздух, попадая в вихревую камеру, интенсивно закручивался. 7. Это способствует хорошему перемешиванию впрыскиваемого топлива и воздуха и самовоспламенению смеси.

Grammar exercises

Exercise 1. Put *some*, *any* or *no*.

1. Why don't you ask your father to lend you _____ money? I don't have _____.
2. Diesel engine has _____ ignition system.
3. _____ engines use resistive grid heaters
4. Internal combustion engines can contain _____ number of combustion chambers
5. _____ modern diesel engines feature diesel particulate filters.
6. Ford Motor Company tried diesel engines in _____ passenger cars in the 1980s
7. _____ engines can be run on vegetable oil without modification, and most others require fairly basic alterations.
8. _____ vehicle has an unlimited volume available for fuel storage.

Exercise 2. Translate into Russian, paying attention at translation of Participle I.

1. I see a man walking around your car.
2. I met Fred going to work.
3. We don't know the mechanics standing near service station.
4. He will manage the task using your methods.
5. You will make nice race car improving it every day.
6. The car stopping at the light was hit by the truck.
7. Seeing an accident ahead, I stopped my car.

Exercise 3. Translate into Russian, paying attention at translation of Participle I with *when/ while*.

1. When diagnosing your car found some breakdowns.
2. While fixing the wipers I had to ask my neighbor for help.

3. When driving my car I pay attention to the traffic signs
4. When disassembling a motor I found out what had caused the breakdown.
5. While crossing the road she dropped her phone.
6. When going to work I always meet Mary.

Exercise 4. Составьте предложения используя глагол из первой колонки и образуя герундий, используя слова из второй.

to like	learn English grammar
not to like	tinker one's car
to enjoy	read the latest auto news
to love	take part in street racing
not to love	ride motorcycle
to hate	unload baggage hold
can't stand	drive 60 km/h

Exercise 5. Compose your own sentences with the following phrases. Remember the gerund is always used after them.

- | | |
|---|-----------------------------------|
| to be (get) used to - привыкать/ привыкнуть к | to be fond of - любить |
| to be good at - быть способным/ хорошо уметь делать | |
| to be interested in - быть заинтересованным в | |
| to be responsible for - быть ответственным за | |
| to be surprised at – удивляться | to be tired of - уставать от |
| to be afraid of – бояться | to be keen on - увлекаться |
| to be grateful for - быть благодарным за | to be pleased at - быть довольным |
| to be capable of - быть способным на | to be sorry for - сожалеть о |
| to be proud of - гордиться | |

Exercise 6. Answer the questions using gerund. For example: Which is easier for you: making money or spending money? -Let me see. Spending money is easier than making money.

1. Which is more interesting for you: driving a car or sitting next to the driver?
2. Which is more comfortable for you: riding a bike or getting a taxi?
3. Which is more exciting for you: watching auto races or participating in them?
4. Which is more important for you: coming to classes on time or getting an extra hour of sleep in the morning?

Exercise 7. Complete the sentences with the correct form (infinitive or gerund) of the verb.

Early automobiles

1. Many inventors were trying (*build*) gas-powered, self-propelled vehicles in the late 1800's.
2. A French inventor succeeded in (*create*) a steam-powered tricycle in 1769.
3. A German engineer, Niklaus August Otto, is known for (*invent*) the four-stroke gas-powered engine in 1876.
4. Both Gottlieb Daimler and Carl Benz managed (*build*) and (*sell*) autos in Germany in the 1880s.
5. By 1898 there were 50 companies responsible for (*market*) cars in the United States alone.
6. It was in 1908 when Henry Ford started (*make*) automotive history.
7. It was in that year that he

managed (*put*) together the first assembly line and (*lower*) the price of automobiles so that everyone could buy one. 8. He began (*arrange*) workers so that they could each do a small part of the job in sequence. 9. This prevented (*repeat*) a log of unnecessary steps in the assembly process. 10. By 1913 he managed (*produce*) 250,000 cars a year. 11. His first mass-produced car, the Model T, guaranteed (*give*) modest-income Americans decent transportation for a reasonable (\$500) price. 12. While Ford declined (*give*) away more than a modest amount during his lifetime, the Ford Foundation arranges (*donate*) millions of dollars each year to deserving causes.

LESSON VIII

Exercise 1. Read the following words and word combinations.

motion – движение

to desire – желать

to adjust – регулировать

to consider – рассматривать

to match – соответствовать

corresponding – соответствующий

to exert – приводить в действие

friction – трение

emergency – аварийная ситуация

to pivot outward – расходятся в стороны

slippery surface – скользкая поверхность

uneven terrain – пересеченная местность

to insure – обеспечивать, гарантировать

Exercise 2. These terms you should know.

to feed (fed, fed) – питать, подавать

all-wheel steering – рулевое управление с приводом на все колеса

tie-rod – поперечная рулевая тяга

manual steering – ручное рулевое управление

conventional power steering – обычное рулевое управление

hydraulic pressure – гидравлическое давление

disc brake – тормозной диск

drum brake – барабанный тормоз

brake pad – педаль тормоза

hydraulic pump – гидравлический насос

to lock (wheel) – блокировать

hand-operated brake – ручной тормоз

level – уровень

READ AND TRANSLATE THE TEXT

Control System

A driver controls the automobile's motion by keeping the wheels pointed in the desired direction, and by stopping or slowing the speed at which the wheels rotate. These controls are made possible by the steering and braking systems. The driver controls the vehicle's speed with the transmission and the gas pedal, which adjusts the amount of fuel fed to the engine. So, the control system of the automobile is represented by steering system, brakes and antilock braking system (ABS). Let's consider each of them.



Steering. Automobiles are steered by turning the front wheels, although a few automobile types have all-wheel steering. Most steering systems link the front wheels together by means of a tie-rod. The tie-rod insures that the turning of one wheel is matched by a corresponding turn in the other.

Manual steering relies only on the force exerted by the driver to turn the wheels. Conventional power steering uses hydraulic pressure, operated by the pressure or movement of a liquid. It requires less effort by the driver. Electric power steering uses an electric motor instead of hydraulic pressure.

Brakes. Brakes enable the driver to slow or stop the moving vehicle. Disc and drum brakes create friction to slow the wheels. When a driver presses on the brake pedal of a vehicle, brake lines filled with fluid transmit the force to the brakes. In a disc brake, the fluid pushes the brake pads in the calliper against the rotor, slowing the wheel. In a drum brake, the fluid pushes small pistons in the brake cylinder against the hinged brake shoes. The shoes pivot outward and press against a drum attached to the wheel to slow the wheel.

An antilock braking system (ABS) uses a computer, sensors, and a hydraulic pump to stop the automobile's forward motion without locking the wheels and putting the vehicle into a skid. ABS helps the driver maintain better control over the car during emergency stops and while braking on slippery surfaces.

Automobiles are also equipped with a hand-operated brake used for emergencies and to park the car, especially on uneven terrain. Pulling on a lever or pushing down on a foot pedal sets the brake.

ANSWER THE QUESTIONS:

1. What does control system of a car include? 2. How does manual steering work?
3. What does electric power steering use? 4. What do brakes consist of? 5. What is the aim of ABS?

Vocabulary exercises

Exercise 1. Переведите слова. Составьте свои предложения со словами.

Управление, давление, жидкость, ручной тормоз, педаль газа, блокировать.

Exercise 2. Match the words with suitable meaning

1) friction	a) the curved metal casting to which the brake lining is riveted in a drum brake
2) pump	b) any device for compressing, driving, raising, or reducing the pressure of a fluid, especially by means of a piston or set of rotating impellers
3) brake shoe	c) a type of brake used on the wheels of vehicles, consisting of two pivoted shoes that rub against the inside walls of the brake drum when the brake is applied
4) pressure	d) the exertion of force by one body on the surface of another
5) drum brake	e) the act, effect, or an instance of rubbing one object against another

Exercise 3. Translate from Russian into English using an active vocabulary.

1. Импульсное торможение на мокрой и скользкой дороге обеспечивает антиблокировочная система тормозов. 2. Благодаря ей можно тормозить даже на повороте. 3. При этом автомобиль не теряет устойчивости и управляемости. 4. Кроме того, эта система предотвращает блокировку колес в экстренной ситуации. 5. С ее помощью удастся достичь максимальной эффективности, надежности, безопасности торможения. 6. Когда антиблокировочная система работает, слышны характерные звуки работы насоса, качающего тормозную жидкость, и ощущается пульсация при нажатии на тормозную педаль.

Exercise 4. Translate from Russian into English short texts about innovations in braking systems.

Brake assist 1. Система Brake Assist способна распознавать экстренные торможения и способна “дожать” педаль тормоза, обеспечивая максимально возможное замедление. 2. При резком нажатии на педаль тормоза, система динамического контроля за торможением мгновенно устанавливает максимальное давление в тормозном приводе. 3. Это сокращает тормозной путь автомобиля.

ПЗС (Противозаносная Система) - ESP (Electronic Stability Program)

1. Система предотвращает занос автомобиля в критических ситуациях. 2. Работа системы основана на использовании информативных датчиков. 3. При распознавании заноса, ESP притормаживает определенное колесо/колеса, и машина стабилизируется.

SBC (Sensotronic Brake Control)

1. На сегодняшний день это самая лучшая тормозная система, устанавливаемая серийно на современных автомобилях. 2. Главное назначение системы SBC – повышение эффективности работы тормозов автомобиля. 3. Основное отличие системы SBC – это электронная система взаимодействия между педалью тормоза и тормозными механизмами.

LESSON IX

Exercise 1. Read the following words and word combinations.

to clear up – выяснить	to slip – скользить	to spin at – вращаться
rear – задний	front - передний	to propel - двигать

Exercise 2. These terms you should know.

4WD – four-wheel drive - полный привод	traction - сила сцепления
differential - дифференциал	transfer case – раздаточная коробка
locking hub - захватывающая ступица (втулка)	
driveshaft – ведущий карданный вал	drive wheel – ведущие колеса
front-wheel - привод на передние колеса	

READ AND TRANSLATE THE TEXT

Four-wheel drives

Depending on the vehicle's design, engine power is transmitted by the transmission to the front wheels, the rear wheels or to all the four wheels. The wheels receiving power are called drive wheels. They propel the vehicle forward or backward. Most automobiles either are front-wheel or rear-wheel drive. In some vehicles four-wheel drive is an option the driver selects for certain road conditions, others feature full-time, all-wheel drive.

In rear-wheel drive, the driveshaft runs under the car to a differential is on the front axle and the connections to the transmission are much shorter. Four-wheel-drive vehicles have drive shafts and differentials for both axles.

There are almost as many different types of four-wheel-drive systems as there are four-wheel-drive vehicles. It seems that every manufacturer has several different schemes for providing power to all of the wheels. The language used by the different carmakers can sometimes be a little confusing, so before we get started explaining how they work, let's clear up some terminology.

Usually, if carmakers say that a car has four-wheel drive, they are referring to a part-time system. These systems are meant only for use in low-traction conditions, such as off-road or on snow or ice.

All-wheel-drive systems are sometimes called full-time four-wheel drive. They are designed to function on all types of surfaces, both on- and off-road, and most of them cannot be switched off. We need to know a little about torque, traction and wheel slip before we can understand the different 4WD systems found on cars.

The main parts of any 4WD system are the two differentials (front and rear) and the transfer case. In addition, part-time systems have locking hubs, and both types of systems may have advanced electronics that help them make even better use of the available traction.

A car has two differentials, one located between the two front wheels and one between the two rear wheels. They send the torque from the driveshaft or transmission to the drive wheels. They also allow the left and right wheels to spin at different speeds when you go around a turn. In all-wheel drive, the speed difference between the front and rear wheels is handled by the transfer case. Transfer case is the device that splits the power between the front and rear axles on a four-wheel-drive car. The transfer case on a part-time four-wheel-drive system locks the front-axle driveshaft to the rear-axle driveshaft, so the wheels are forced to spin at the same speed. This requires that the tires slip when the car goes around a turn. Part-time systems like this should only be used in low-traction situations in which it is relatively easy for the tires to slip.

ANSWER THE QUESTIONS:

1. What does the term “drive wheels” mean? 2. What is the difference between rear-wheel and front-wheel- drive vehicles? 3. Is it true that there are different types of 4WD?

Vocabulary exercises

Exercise 1. Translate the following terms.

a) power, drive wheels, rear axle, locking hub, wheel slip, on-road conditions, transfer case, to go around a turn, driveshaft, low-traction situations;

b) полноприводный, дифференциал, втулка, переднее ведущее колесо, сила сцепления (с дорогой), скользить, поворачивать., тормозить.

Exercise 2. Translate these sentences paying attention to the words of this lesson.

1. Research results suggest that 4WD vehicles can be safer than passenger cars in certain circumstances but less safe in others. 2. In multiple-vehicle collisions heavier 4WD vehicles can do a serious damage to people in other vehicles. 3. Some older 4WD imports may not have the built-in crumple zones that modern cars benefit from. 4. While the size and shape of your 4WD may improve your field of vision, it can reduce the field of vision for other road users.

Exercise 3. Using the table explain how 4WDs differ from other types of vehicles.

advantages	disadvantages
a higher seating position better vision of the road greater height and weight better off-road capability	a tend to roll over only modern ones have built-in crumple zones

Grammar exercises

Exercise 1. Choose which sentences are compound ones and translate them.

1. The roadworks (ремонтные работы на дороге) caused a traffic jam, and people in the jam started to get impatient. 2. The buses tend to be overcrowded in the cities and the one-way traffic system is complicated as well. 3. Suddenly a car came round the bend and tore along (нестись, мчаться) the road at high speed. 4. I went up on the pavement and crashed into a tree! 5. She checked her rear mirror and start driving. 6. Four-wheel- drive vehicles have drive shafts and differentials for both axles. 7. Jack had a car crash last year but fortunately nobody was hurt. 8. How it happened she didn't know, but she had put the car into reverse and driven into the car behind her. 9. In such cars the differential is on the front axle and the connections to the transmission are much shorter. 10. The driveshaft causes axles to rotate and turn the wheels.

Exercise 2. Translate the following complex sentences.

1. The window seat is usually the first one which is taken. 2. When we were leaving the motorway, we noticed an overturned truck on the verge (обочина дороги). 3. As the designed motor was made carefully and skilfully, it had no defects. 4. Take care when you cross the street. 5. Don't get off the bus while it's moving. 6. My car engine suddenly stopped, so I got out to look it up. 7. Nobody was injured although both cars were badly damaged. 8. The windscreen was so dirty that we could hardly see through it. 9. Higher gears permit the car to travel faster, while low gears provide more power for starting a car from a standstill and for climbing hills. 10.

The transmission usually located just behind the engine, although some automobiles were designed with a transmission mounted on the rear axle.

Exercise 3. Look through these sentences and choose which of them are a) complex sentence, or b) simple sentence

1. There is no reason for car makers to use distributor, because nowadays it is replaced by solid-state electronics controlled by computer. 2. You have to take extra care when overtaking, joining or leaving the motorway. 3. The gears of a differential allow a car's powered wheels to rotate at different speeds as the car around corners. 4. The alternator generates electric current that powers all the car's electrical needs. 5. In summer, it's a good idea to wear sunglasses when driving so as to cut down the reflected glare from the road surface. 6. The lorry was travelling at 80 miles per hour when it happened. 7. Most automobiles either are front-wheel or rear-wheel drive. 8. Some leaks will require immediate attention from your service specialist, while others can wait for your regular scheduled maintenance.

Exercise 4. Read this short text and translate it.

The crash of the Air France Concorde has now been explained by a piece of metal on the runway. This metal thing occurred on the way of a Continental Airlines DC 10 which had taken off minutes before. The metal caused one of Concorde's tyres to burst (лопнуть), which in turn ruptured (разрывать) the fuel tank on the left-hand side of the plane.

Exercise 5. Translate the following sentences without conjunction.

1. He was injured when the car he was in was involved in a collision. 2. In short, learner drivers haven't yet passed their driving tests can not drive on motorways. 3. In some vehicles four-wheel drive is an option the driver selects for certain road conditions.

Exercise 6. Translate the sentences, choose which sentences are complex or simple.

1. This mechanical operator will not be able to answer your questions, *because* he is not qualified. 2. Airplane travel is unpredictable, *because* the flight can be delayed for some hours. 3. The traffic was crawling along (медленно продвигаться) *because* of the roadworks. 4. Yesterday Ann's flight was delayed *for* seven hours. That's a long time to spend in an airport waiting for your plane to leave. 5. Some states in the USA even set a lower limit *for* night driving. 6. *Since* the lights were red, the accident was definitely the first car driver's fault. 7. *Since* I had parked on a double yellow line, my car had been towed away by the police. 8. *After* the customer had returned this car to the garage, the mechanic fixed it. 9. Signal left to leave the roundabout in the UK *after* you have passed the exit previous to yours. 10. Take particular care when starting to drive in the morning or *after* a break, it is so easy to forget and drive on the wrong side of the road in the UK. 11. *After* green, the light changes to amber (orange) and you can only continue if your car has already crossed the line and when stopping could cause an accident. 12. Rules of the road in the UK are different to Ukraine, and you should study them and get plenty of practice *before* you will be driving on the left. 13. Look at rear-view mirror *before* you set off. 14.

Before checking the oil level he stopped the engine. 15. If there is a stop sign at the junction, the driver must stop his or her car behind the white line and wait *until* there is a gap in the traffic.

Exercise 7. Translate into English.

1. После того, как машина была осмотрена, они забрали ее из автомастерской.
2. Так как машина с передним приводом может перевернуться при резком торможении, тебе следует соблюдать скоростной режим.
3. Он решил купить для себя машину с полным приводом.
4. В твоей машине все колеса ведущие?
5. Из-за дождя дорога была очень скользкой, и в городе произошло много аварий.

LESSON X

Exercise 1. Read the following words and word combinations.

standstill – остановка

hill – холм

to disengage – освобождать

circular plate – круглая пластина

Exercise 2. These terms you should know.

gearbox – коробка передач

axle – ось

higher gears – более высокие скорости

shift lever – рычаг переключения (скоростей)

steering column – рулевая колонка

pulley – шкив, блок

clutch – сцепление

clutch fork – вилка сцепления

to shift gear – переключать скорости

flywheel – маховик

CVT – бесступенчатая трансмиссия, или вариатор

manual transmission – МКПП (механическая коробка переключения передач)

automatic transmission – АКПП

READ AND TRANSLATE THE TEXT

Three basic types of transmission

The transmission (or gearbox) transfers power from the engine to the driveshaft. That causes axles to rotate and turn the wheels. The transmission usually is located just behind the engine, although some automobiles are designed with a gearbox mounted on the rear axle. There are three basic transmission types: manual, automatic, and continuously variable (CVT).

A manual transmission has a gearbox from which the driver selects specific gears depending on road speed and engine load. Higher gears permit the car to travel faster, while low gears provide more power for starting a car from a standstill and for climbing hills. Gears are selected with a shift lever located on the floor next to the driver or on the steering column. The driver presses on the clutch to disengage the transmission from the engine to permit a change of gears. The clutch disk attaches to the transmission's input shaft. It presses against a circular plate attached to the engine's flywheel. When the driver presses down on the clutch pedal to shift gears, a mechanical lever called a clutch fork and a device called a throwout bearing



separate the two disks. Releasing the clutch pedal presses the two disks together, transferring torque from the engine to the transmission.

An automatic transmission is one of the key components of an automobile. It selects gears itself according to road conditions and the amount of load on the engine. Instead of a manual clutch, automatic transmissions use a hydraulic torque converter to transfer engine power to the transmission. Located just behind the engine, the transmission changes the speed and power ratios between the engine and the driving wheels of a vehicle.

Instead of making distinct changes from one gear to the next, a continuously variable transmission (CVT) uses belts and pulleys to smoothly slide the gear ratio up or down. Continuously variable transmissions appeared on machinery during the 19th century and on a few small-engine automobiles as early as 1900. The transmission keeps the engine running at its most efficient speed by more precisely matching the gear ratio to the situation. Commercial applications have been limited to small engines.

Thus, nowadays cars use only two types of the transmission: an automatic transmission and a manual one.

ANSWER THE QUESTIONS:

1. How many types of transmission do you know? 2. Which one is commonly abbreviated “AT”? 3. How does the manual transmission work? 4. How does the automatic transmission work? 5. Why do you think CVT are not so popular today?

Vocabulary exercises

Exercise 1. Translate the following sentences into Russian.

1. Most automobile manual transmissions allow the driver to select any gear at any time, but some, such as those commonly mounted on motorcycles and some types of racing cars, only allow the driver to select the next-highest or next-lowest gear ratio. 2. Some manuals are referred to by the number of forward gears they offer (e.g., 5-speed) as a way of distinguishing between automatic or other available manual transmissions. Similarly, a 5-speed automatic transmission is referred to as a 5-speed automatic. 3. Manual transmissions are typically compared to automatic transmissions, as the two represent the majority of options available to the typical consumer. 4. Increased fuel economy with a properly operated manual transmission vehicle versus an equivalent automatic transmission vehicle can range from 5% to about 15% depending on driving conditions and style of driving - extra urban or urban (highway or city). 5. Automatic Transmissions have various modes depending on the model and make of the transmission. Vehicles conforming to US Government standards must have the modes ordered P-R-N-D-L (left to right, top to bottom, or clockwise).

Exercise 2. Match a word and its meaning.

Neutral/No gear (N), Park (P), Second (2 or S), Reverse (R), Drive (D), First (1 or L), M

1. This disconnects the transmission from the wheels so the car can move freely under its own weight. This is the only other selection in which the car can be started.
2. This mode limits the transmission to the first two gears, or more commonly locks the transmission in second gear.
3. This allows the car to move forward and accelerate through its range of gears.
4. This puts the car into the reverse gear, giving the ability for the car to drive backwards.
5. This selection mechanically locks the transmission, restricting the car from moving in any direction.
6. This mode locks the transmission in first gear only. It will not accelerate through any gear range. This, like second, can be used during the winter season, or towing.
7. This is the manual selection of gears for automatics, such as Porsche's Tiptronic. The driver can shift up and down at will, like a semi-automatic transmission. This mode may be engaged either through a selector/position or by actually changing gear (e.g. tipping the gear-down paddle).

Exercise 3. Put the necessary word: *fuel economy, hands, control, accelerator, less expensive, one handed, brake, active cooling,*

1. Manual transmissions typically offer better _____ compared to automatics.
2. Vehicles with manual transmissions are typically _____ than those with automatic transmissions.
3. _____ steering is very unsafe.
4. Automatic transmissions only require moving the foot from the _____ pedal to the _____ pedal, and vice versa.
5. Manual transmissions normally do not require _____, because not much power is dissipated as heat through the transmission.
6. A driver has more direct _____ over the state of the transmission with a manual than an automatic.
7. Manual transmissions do not allow the driver to have both _____ on the steering wheel at all times.

Exercise 4. Translate without a dictionary. Interesting to know...

Cars with manual transmissions can often be started when the battery is dead by pushing the car into motion or allowing it to roll downhill, and then engaging the clutch in third or second gear. This is commonly known as a "push start", "popping the clutch" (in the USA), "crash starting" (in New Zealand), "roll starting" (in Australia) or "bump starting" (in the UK).

Exercise 5. Look through the comparison of different types of transmission. Discuss their advantages and disadvantages. Use the following patterns:

To my mind... As for me... In the comparison with ... Unlike ...

Manual transmission	Automatic transmission
Advantages	
mechanical efficiency driver control low fuel consumption (fuel cut-off) gear train efficiency lighter no active cooling simpler construction	smooth and quick shifts simplicity of driving no clutch pedal (the 3 rd pedal)
Disadvantages	
one handed steering It takes time to become skilled in driving	much fuel consumption Cars with it are more expensive

Exercise 6. Translate into English.

1. Бесступенчатая трансмиссия, или вариатор состоит из двух шкивов (ведущего и ведомого), которые изменяют скорость автомобиля. 2. Так как МКПП требует от водителя большего опыта, чем АКПП, в некоторых странах водительские экзамены принимаются только на машинах с МКПП. 3. Машины с МКПП популярны, потому что потребляют меньше топлива.

Grammar exercises

Exercise 1. Translate the sentences.

1. If the runway had been swept after that air plane take-off, the disaster would have been avoided. 2. If only he hadn't been driving so fast! (Unfortunately he was driving very fast) 3. I wish sports car weren't so expensive 4. Taking the later flight would be preferable for me. 5. If she is travelling abroad on business, she phones me every evening. 6. If you had been driving more slowly, you could have stopped in time. 7. If you want to stop the car you'll push the brake. 8. Unless I hurry I'll miss the 5 o'clock train. 9. If you drive in the slow lane (правый ряд) of the motorway, you will be careful not to break the limit of speed. 10. If he held a full driving licence, he would be allowed to drive in the UK. 11. In England, you must drive on the left unless road signs tell you otherwise. 12. If I were you, I should keep to the speed limit.

fast lane - левый (скоростной) ряд

Exercise 2. Put the necessary form of the verb into each space.

1. If I were you I ___ (to go) around corners more slowly, because your 4WD vehicle handles differently. 2. If you wear a safety belt it ___ (to protect) your neck and spine (позвоночник) in a crash. 3. That accident wouldn't have happened if you ___ (to check) your engine.

Exercise 3. Read the following dialogue.

A: Sorry I'm late. I couldn't start the car this morning.

B: Well, winter scorning. It was probably cold.

A: It needs a service, really ... but garages are so expensive nowadays.

B: Can't you service it yourself?

A: Who? Me? I don't know anything about cars!

B: Then if I were you, I'd have it serviced. The garage that I use is very reasonable. And I have the radiator filled with anti-freeze. They say it's going to be a cold winter.

Exercise 4. Make your own dialogues using the following words.

Radiator (filled with anti-freeze), brakes (tested), battery (checked), oil (changed), tyres (checked).

Exercise 5. Translate into English.

1. Если бы у него было больше водительского опыта, он бы избежал столкновения. 2. Они бы завели машину «с толкача», если бы у машины была МКПП. 3. Если дорожные условия позволяют, она обгонит эту машину. 4. Если бы только машины с АКПП стоили дешевле! 5. До тех пор, пока ты не сдашь на водительские права, я не разрешу тебе брать мою машину. 6. Если бы я был на твоём месте, то не переключал бы передачу на поворотах, это может привести к заносу. 7. Если бы она вовремя поменяла масло, ей бы не пришлось ремонтировать коробку передач.

LESSON XI

Exercise 1. Read the following words and word combinations.

to feature - представлять

to draw from - получать

alternator - генератор переменного тока

battery - аккумулятор

arc - дуга

condenser - конденсатор

Exercise 2. These terms you should know.

turn signal - поворотник

horn - звуковой сигнал

windshield wipers - стеклоочиститель, дворник

spark plug – свеча зажигания

igniting spark – искра зажигания

coil – катушка

solid-state - полупроводник

READ AND TRANSLATE THE TEXT

Electrical System

The automobile depends on electricity for fuel ignition, headlights, turn signals, horn, radio, windshield wipers, and other accessories. A battery and an alternator supply electricity. The battery stores electricity for starting the car. The alternator generates electric current while the engine is running, recharging the battery and powering the rest of the car's electrical needs.

Electrical system of the automobile is featured by the ignition system. It delivers voltage to ignite the fuel in the automotive vehicle. When the ignition switch is turned on, low-voltage electric current flows from the battery to the coil, which converts the current to high-voltage. The current then flows to the distributor, which delivers it to each of the spark plugs. The spark plugs send an igniting spark to the fuel/air mixture in the combustion chambers.



The ignition system supplies high-voltage current to spark plugs to ignite fuel vapor in the cylinders. There are many variations. But all gasoline-engine ignition systems draw electric current from the battery. They increase the current's voltage. Then the ignition systems deliver it to spark plugs that project into the combustion chambers. An electric arc between two electrodes at the bottom of the spark plug ignites the fuel vapor.

In older vehicles, a distributor, which is an electrical switching device, routes high-voltage current to the spark plugs. In modern ignition systems, the distributor, coil, and condenser have been replaced by solid-state electronics controlled by a computer. A computer controls the ignition system and adjusts it to provide maximum efficiency in different driving conditions.

Vocabulary exercises

Exercise 1. Translate the following terms:

Искра, распределитель, генератор переменного тока, полупроводниковый, зажигание, свеча зажигания, камера сгорания, аккумулятор, низковольтный, катушка, доставлять, заменять, получать, топливо, пар, топливно-воздушная смесь, перезаряжать, работать, преобразовывать, подстраивать.

Exercise 2. Translate into Russian.

1. If the ignition system fires at the wrong time, power will fall and gas consumption and emissions can increase. 2. In order to get the most torque and power from the engine, the goal is to maximize the pressure in the cylinder during the power stroke. 3. In the distributorless ignition there are no high-voltage spark-plug wires, which also wear out. 4. The primary coil's current can be suddenly disrupted by the breaker points, or by a solid-state device in an electronic ignition. 5. Some small engines require a battery to supply electrical power and the ignition spark. 6. Servicing the ignition system of your small engine depends on which types of components it has. 7. When it gets really cold, gasoline evaporates slowly so it is harder to burn it.

Exercise 3. Translate into English.

1. Система зажигания предназначена для воспламенения рабочей смеси в цилиндрах бензиновых двигателей. 2. Общим условием для системы зажигания является ее надежность. 3. Существует множество типов систем зажигания, которые отличаются устройством и принципами действия. 4. Конденсатор необходим для того, чтобы контакты не обгорали в момент размыкания. 5. Когда импульс тока высокого напряжения попадает на свечу зажигания, между ее электродами проскакивает искра, она воспламеняет рабочую смесь.

Grammar exercises

Exercise 1. Find the sentences with “to” as preposition and the sentences with infinitive.

1. If the hand leaves the wheel, the steering will begin to straighten. 2. Manual transmissions work regardless of the angle of the car with respect to gravity. 3. In



order to select the mode, the driver would have to move a gear shift lever located on the steering column or on the floor next to him/her. 4. A car should be allowed to come to a complete stop before setting the transmission into park to prevent damage. 5. In order for the driver to select reverse they must come to a complete stop, push the shift lock button in (or pull the shift lever forward in the case of a column shifter) and select reverse. 6. A hydraulic automatic transmission takes the place of a mechanical clutch, allowing the engine to remain running at rest without stalling.

Exercise 2. Translate, paying attention to the different functions of infinitive

1. The manual selection of gears requires the driver to monitor the road and traffic situation, anticipate events and plan a few steps ahead. 2. The automatic transmission to be designed for this car has several shortcomings. 3. It's much more difficult for the driver to fidget in a manual transmission car, for instance by eating, drinking beverages, or talking on a cellular phone without a headset. 4. Hydraulic & lubricating oil are called Automatic Transmission Fluid, or ATF, this component of the transmission provides lubrication, corrosion prevention, and a hydraulic medium to convey mechanical power. 5. The multitude of parts, along with the complex design of the valve body, originally made automatic transmissions much more complicated and expensive to build and repair than manual transmissions. 6. To select gears/modes is made by pushing a button in (called the shift lock button) or pulling the handle (only on column mounted shifters) out. 7. The mechanical operator was to adjust new transmission on this car. 8. The goal of the ignition system on your car is to ignite the fuel at exactly the right time so that the expanding gases can do the maximum amount of work. 9. When the fuel/air mixture in the cylinder burns, the temperature rises and the fuel is converted to exhaust gas. 10. To make the best use of the fuel, the spark should occur before the piston reaches the top of the compression stroke.

Exercise 3. Read the following text and translate the sentences with “to”.

Support System

The suspension system, wheels and tires should be discussed while speaking about the automobile's support system. Automobiles would deliver jolting rides without a system of shock absorbers and other devices to protect the auto body and passenger compartment.

The suspension system contains springs that move up and down to absorb bumps and vibrations. Shock absorbers control or dampen the sudden loading to reduce wheel bounce and the shock transferred from the road wheels to the body. One shock absorber is installed at each wheel. Modern shock absorbers have a telescoping design and use oil, gas, and air, or a combination to absorb energy.

Automobile wheels generally are made of steel or aluminum. Aluminum wheels are lighter, more impact absorbent, and more expensive.

Tires help smooth out the ride and provide the automobile's only contact with the road, so traction and strength are primary requirements. Tire treads come in several varieties to match driving conditions.

Exercise 4. Translate into English.

1. Основная функция катушки зажигания – это генерировать высоковольтный импульс на свечу зажигания. 2. Раньше в двигателе была одна катушка, и чтобы обслужить несколько цилиндров применялся распределитель. 3. Для увеличения эффективности двигателя сейчас используются две свечи на цилиндр. 3. Поджог горючей смеси производится электрическим разрядом, который возникает между электродами свечи. 4. После запуска аккумулятор подзаряжается от генератора, который приводится в движение двигателем. 5. Уменьшение расхода топлива может быть получено при использовании инжекторной системы подачи топлива.

LESSON XII**Exercise 1.** Read the following words and word combinations.

poor – плохой, несоответствующий	light condition – состояние освещения
to distract – отвлекать	visibility – обзор
extra – дополнительные, сверх	to fit on – устанавливать
to dazzle – слепить	to confuse – сбивать с толку
warrant – гарантия	fitness – пригодность
hefty fine – большой штраф	

Exercise 2. These terms you should know.

headlight – фара	safety feature – меры обеспечения безопасности
roadside – обочина	oncoming – встречный
fog lamp - противотуманная фара	hazard lights – “аварийка”
tail light – задние огни	brake light – стоп-сигнал
stop lamp – стоп-сигнал	reverse lamp – фара заднего хода
daytime running lamps – фары дневного света (габариты)	
auxiliary headlight (dipped beam headlight)- фара ближнего света	
to dim (one's) headlights — переключить фары с дальнего света на ближний	

READ AND TRANSLATE THE TEXT**Lights**

Good headlights are known to be an important safety feature for driving at night and in poor light conditions. They should give you a good view of the road and roadside without distracting oncoming traffic. Fog lamps are designed to improve visibility in fog but should only be used in foggy conditions. Some cars have wipers or water jets to keep the headlights clean. Large, well-positioned tail lights, brake lights, high-mounted stop lamps, reverse lights and indicators let other road users know that the vehicle is there and what it is doing, so crashes are less likely to happen.

Inadequate lighting proves to make it difficult for a driver to see and for their vehicle to be seen at night. Too bright lights seem to be just as dangerous. There are now legal limits on how many and where extra lights can be fitted on a vehicle. The

law says your lights must not dazzle, confuse or distract other road users and sets out how and when you can use some types of vehicle lights.

If you don't get your lights right, not only could your vehicle fail its warrant of fitness, but you could also be in for a hefty fine. Even worse, you could cause a crash.

ANSWER THE QUESTIONS:

1. How many headlights does a car have? 2. Which headlights are extra ones? 3. What should the driver do not to dazzle oncoming traffic? 4. What is the function of stop lamp (auxiliary headlights, main beam lights)?

Vocabulary exercises

Exercise 1. Translate the following terms.

Фара, переключать с дальнего света на ближний, стоп-сигнал, поворотник, поворот, задний ход, обочина, слепить, идущий навстречу транспорт, слишком яркий свет, противотуманная фара, передняя фара, дополнительные фары.

Exercise 2. Choose which statements are true and which are false.

1. The beam headlamps are controlled so that the driver can see the road ahead causing glare to other road users.
2. Dipped beam and main beam headlamps are often combined into one lamp.
3. Stop lamps are usually positioned one by one towards the sides of the vehicle.
4. Because main beam headlamps are not dipped, they will dazzle other road users if not used properly.

Exercise 3. Match terms with their definitions.

- | | |
|--------------------------|--|
| 1. dipped beam headlamps | a. are used for lighting the way a long way ahead of the vehicle. |
| 2. front fog lamps | b. are optional lamps fitted to the front of a vehicle to make it easier to see in daylight. |
| 3. main beam headlamps | c. are used for lighting the way ahead of the vehicle at night. |
| 4. daytime running lamps | d. illuminate the road ahead in foggy conditions, both at night and during the day. |
| 5. stop lamps | e. are red lamps on the rear of the vehicle that light up automatically when the vehicle brakes. |
| 6. reversing lamps | f. indicate where you intend to turn. |
| 7. direction indicator | g. illuminate the area behind the vehicle when it is reversing. |

Exercise 3. Translate the following sentences.

1. He hadn't switched to dipped beam as soon as he noticed other vehicle ahead. 2. Additional main beam headlamps are also known as "driving lamps". 3. It is against the

law, to use fog lamps in clear conditions (day or night) as they can dazzle other road users. 4. Some vehicles are fitted with rear fog lamps, which are very bright rear-facing red lights designed to make the back of the vehicle more visible in fog. 5. Daytime running lamps are designed sometimes so that they turn on automatically with the engine ignition, and turn off when the dipped or main beam headlights are switched off. 6. Most vehicles also have “high-mounted” stop lamps (HMSLs) which are normally fitted in the centre of the base or top of the rear window. 7. Hazard lights should only be used to indicate a temporary hazard to traffic, e.g. the vehicle has broken down.

Grammar exercises

Exercise 1. Put the proper verb form. Each sentence has an infinitive construction.

1. Dipped beam headlamps ... (несомненно) to be used during the poor visibility conditions. 2. Main beam headlamps ... (маловероятно) to be used in all conditions. 3. It ... (было указано, что) to be against the law to use fog lamps in clear conditions. 4. Daytime running lamps ... (известно, что) to turn on automatically with the engine ignition, and turn off when the dipped or main beam headlamps are switched on. 5. Hazard lights ... (вероятно) to be used to indicate a temporary hazard to traffic, e.g. your vehicle has broken down and you're awaiting assistance. Only goods vehicles are allowed to use their hazard lights when double-parked, and only for trade purposes.

Exercise 2. Translate into English.

1. Известно, что дальний свет слепит водителей встречных автомобилей. 2. По-видимому, в этой стране по городу необходимо ездить с включенными габаритными огнями. 3. Несомненно, машины с АКПП были популярны. 4. Сообщили, что новый автомобиль будет более надежным. 5. Вероятно, что в данной ситуации он должен был включить ближний свет.

Grammar revision

Exercise I. Match English and Russian equivalents

- | | |
|-----------------------|---------------------------|
| 1. will be exported | a. экспортируются |
| 2. were exported | b. будут экспортироваться |
| 3. are being exported | c. экспортировали |
| 4. will be mixed | d. смешиваются |
| 5. were mixed | e. будут смешиваться |
| 6. are being mixed | f. смешали |
| 7. is reached | g. будет достигнут |
| 8. were reached | h. достигается |
| 9. will be reached | i. были достигнуты |
| 10. is filled | j. будет заполнен |
| 11. were filled | k. заполняется |
| 12. will be filled | l. были заполнены |
| 13. is fixed | m. будет ремонтироваться |
| 14. were fixed | n. ремонтируется |
| 15. will be fixed | o. были отремонтированы |

Exercise II. Translate the sentences from English into Russian. Make negative and interrogative forms.

1. This service station was reconstructed some years ago.
2. This Opel was not maintained in time.
3. The car radio will not be examined today.
4. The Service Engineer was asked how to repair the engine.
5. He is said to be a good master.
6. The spare parts were not sent for yesterday
7. New rules of taking out of Warranty at this service station were being talked about by the Warranty engineer and mechanics.
8. The state of tires is often acted upon by weather conditions.
9. Repair of auxiliary machinery was followed by repair of the engine.
10. The service book is often referred to.

Exercise III . Put the verbs into correct tense of passive voice. Translate into Russian.

1. The engine (repair) next weekend.
2. He (invite) to the party yesterday.
3. Automobile transporter (discharge) now.
4. Alfa Romeo (involve) with motor racing since that period.
5. The service (not / improve) yet.
6. The brake shoes (install) tomorrow morning.
7. In 2007, a total of 71 million new automobiles (sell) worldwide.
8. The automotive market (form) by the demand and the industry.

Exercise IV. Put the verbs into correct form of passive voice.

1. Brakes (fit) to most wheeled vehicles, including automobiles of all kinds, trucks, trains, motorcycles, and bicycles.
2. A vehicle brake (use) to slow down a vehicle by converting its kinetic energy into heat.
3. Like more and more systems on today's cars, the ABS (control) by an electronic computer.

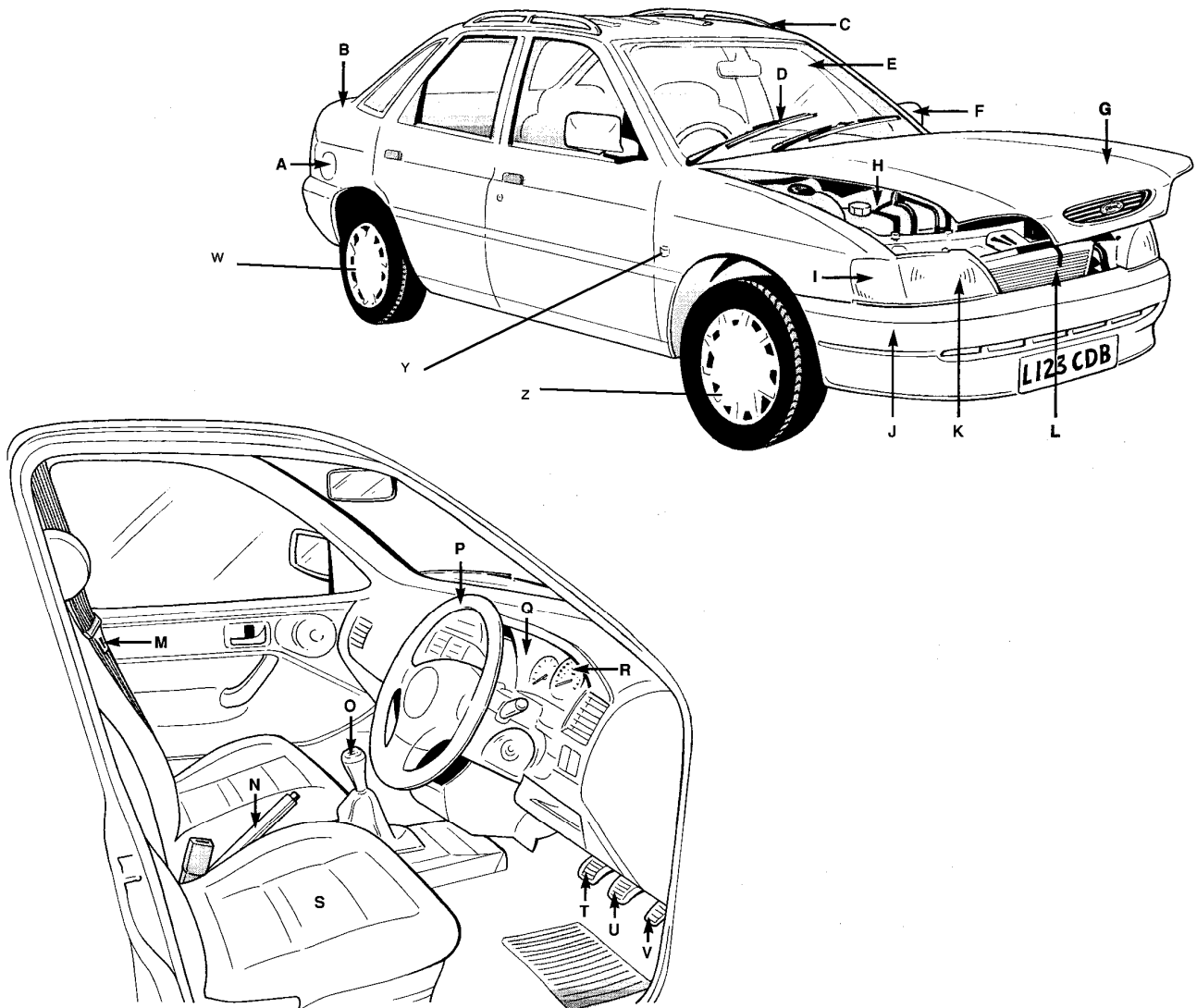
Приложение А

(пояснения к Figure 1, p. 8).

Система	Элементы или детали, входящие в систему
Exhaust system	muffler - глушитель tail pipe – выхлопная труба exhaust manifold – выхлопной коллектор
Support system	shock absorber - амортизатор coil springs – пружинная рессора
Engine	intake manifold – впускной коллектор engine - двигатель spark plug wire – кабель свечи
Steering system	steering wheel - руль
Power train	transmission – коробка переключения передач differential - дифференциал
Electrical system	distributor – трамблер, распределитель зажигания alternator – генератор (переменного тока) battery - аккумулятор
Coolant system	coolant reservoir – резервуар с хладагентом radiator - радиатор
Fuel system	fuel tank - бензобак fuel line - бензопровод
Brake system	brake pedal – педаль тормоза brake line – тормозная магистраль master brake cylinder – главный тормозной цилиндр drum brake – колодочный тормоз disc brake – тормозная колодка

Приложение В

Внешний вид автомобиля



- A** крышка бензобака – fuel tank flap
- B** багажник - boot
- C** корпус крыши - roof
- D** стеклоочистители – windscreen (windshield) wiper
- омыватель лобового стекла – washer nozzle
- E** лобовое стекло – windscreen (windshield)
- F** боковое зеркало заднего вида – outside mirror
- зеркало заднего вида - rearview mirror
- G** капот - bonnet
- H** бачок стеклоомывателя – screen washer tank
- I** поворотник - indicator
- J** бампер – bumper, absorber
- молдинг бампера - bumper moulding
- передний фартук – front fascia

боковой молдинг -body side moulding

K фара - headlight

L решетка радиатора - grille

M ремень безопасности – shoulder belt

N ручник (ручной тормоз) - handbrake

O рычаг переключения скоростей -gear level

коробка передач (МКПП) – manual transmission

P руль –steering wheel

Q приборная доска – dashboard

R датчик уровня топлива – fuel gauge

S переднее сидение – front (driver's) seat

T сцепление – clutch pedal

U тормоз – brake pedal

V газ – accelerator pedal

W заднее колесо – rear wheel

шина – tyre

брызговик – mud flap

Y поворотник - indicator

Z переднее колесо – front wheel

колпак колеса – wheel trim

крыло - wing

кузов – body

дверь – door

ручка двери – door handle

замок – door lock

стекло, окно - window

неотпускающееся стекло - quarter window

люк – sun roof

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Заказ № от Тираж экз.
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РЕЦЕНЗИЯ

на Методические указания к практическим занятиям по дисциплине «Английский язык» для студентов I-II курсов факультета «ТАМПТ» специальностей «Автомобильное хозяйство» и «Инженерная механика» дневной формы обучения

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В современных условиях подготовка специалистов, владеющих иностранным языком в сфере профессиональной коммуникации, приобретает важное значение.

Рецензируемые методические указания предназначены для студентов I-II курсов факультета «Тампт» специальности «Автомобильное хозяйство» очной формы обучения и являются профессионально ориентируемыми в плане овладения английским языком.

Цель данных методических указаний – подготовить студентов очной формы обучения к работе с литературой по специальности и профессионально - ориентированному общению.

Методические указания состоят из двенадцати уроков, каждый из которых включает лексико-грамматические упражнения, тексты для чтения и перевода, а также задания, связанные с активизацией устной речи.

Подобранные тексты имеют познавательную ценность, информативную значимость и охватывают широкий диапазон тем, представляющих интерес студентов данного факультета.

С учетом изложенного, представляется целесообразным издание указанных методических указаний и их использование в учебном процессе.

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