

Контрольная работа №3.

Вариант №1.

1. Выучите слова:

1	as well	также
2	axle shafts	полуоси
3	body	кузов
4	brakes	тормоза
5	chassis	шасси
6	clutch	сцепление
7	consist of	состоять из
8	differential	дифференциал
9	engine (power plant)	двигатель
10	fenders	крылья
11	final drive	главная передача
12	frame with axles	рама с осями
13	fuel	топливо
14	gearbox	коробка передач
15	heater	отопитель
16	hood	капот
17	include	включать в себя
18	in turn	в свою очередь
19	lubricating	смазка
20	power train	силовая передача
21	propeller shaft	карданный вал
22	rear axle	задний мост
23	running gear	ходовая часть
24	source of power	источник энергии
25	steering system	рулевое управление
26	wheels and springs	колеса с рессорами
27	windshield wiper	стеклоочиститель

2. Прочитайте и переведите текст «Components of the Automobile».

The automobile is made up of three basic parts: the power plant, or the engine, the chassis and the body.

The engine is the source of power that makes the wheels rotate and the car move. It includes fuel, cooling, lubricating and electric systems. Most automobile engines have six or eight cylinders.

The chassis includes a power train (power transmission), a running gear, steering and braking systems as well.

The power train carries the power from the engine to the car wheels.

The power transmission, in turn, contains the clutch, gearbox, propeller or cardan shaft, final drive, differential, rear axle and axle shafts. The running gear consists of a frame with axles, wheels and springs.

The body has a hood, fenders and accessories: the heater, stereo tape recorder, windshield wipers, conditioner, speedometer and so on.

3. Ответьте на вопросы по тексту «Components of the Automobile».

1. What main parts is the automobile made up of?
2. What is the function of the engine?
3. What systems does the engine include?
4. What does the chassis consists of?
5. What units does the power transmission comprise?
6. What assemblies does the running gear consist of?
7. What has the body?

4. Выпишите из текста английские эквиваленты слов:

двигатель, капот, коробка передач, крылья, кузов, отопитель, полуоси, рама с осями, тормоза, сцепление;

5. Отметьте соответствующие содержанию текста предложения буквой Т, а не соответствующие – буквой F.

1. The chassis includes eight cylinders. _____
2. The power transmission contains steering system. _____
3. The engine is the source of power that makes the wheels rotate and the car move. _____
4. It includes fuel, cooling, lubricating and electric systems. _____
5. The running gear consists of a frame with axles, wheels and springs. _____

6. Дополните предложения, используя данные слова:

cardan shaft, the clutch, cylinders, the power, springs, wheels;

1. The power train carries _____ from the engine to the car _____.
2. The power transmission, in turn, contains _____, gearbox, propeller or _____, final drive, differential, rear axle and axle shafts.
3. The running gear consists of a frame with axles, wheels and _____.
4. Most automobile engines have six or eight _____.

7. Дайте три формы глагола и выпишите предложения из текста «Components of the Automobile» (задание №2) с данными глаголами:

to be, to carry, to comprise, to contain, consist of, to have, to include, to make;

8. Поставьте глаголы, данные в скобках, в соответствующем времени.

1. The automobile (to make) up of three basic parts: the power plant, or the engine, the chassis and the body.
2. The engine (to be) the source of power that makes the wheels rotate and the car move.
3. It (to include) fuel, cooling, lubricating and electric systems.
4. The power train (to carry) the power from the engine to the car wheels.
5. The body (to have) a hood, fenders and accessories: the heater, stereo tape recorder, windshield wipers, conditioner, speedometer and so on.

9. Распределите данные слова по секциям и переведите их:

- the engine
- the chassis
- the body

accessories, axel shaft, clutch, cooling system, differential, electric system, final drive, frame with axles, fuel system, gearbox, heater, lubricating system, running gear, power transmission, propeller shaft, steering system, wheels and axle shafts, windshield wiper

10. Дополните предложения, используя данные группы слов:

- a power transmission, running gear, steering and braking systems;
- the clutch, gearbox, propeller shaft, final drive, differential and axle shafts;
- a hood, fenders and accessories;
- the engine, the chassis and the body;
- a frame with axles, wheels and springs;
- the source power;
- fuel, cooling, electric and lubricating systems.

1. The automobile is made up of...
2. The engine is...
3. The engine includes...
4. The chassis consists of...
5. The power transmission comprises...
6. The running gear consists of...
7. The body has...

11. Переведите предложения на английский язык:

1. Автомобиль состоит из трех основных частей: двигателя, шасси и кузова.
2. Двигатель- это источник энергии.
3. Двигатель включает в себя топливную, охлаждающую, смазывающую и электрическую системы.

4. Шасси включает в себя силовую передачу, ходовую часть, рулевую и тормозную системы.
5. Силовая передача (трансмиссия), в свою очередь, состоит из сцепления, коробки передач, карданного вала, главной передачи, дифференциала, заднего моста и полуосей.
6. Ходовая часть включает в себя раму с осями, колеса и рессоры.
7. Кузов включает в себя капот, крылья и вспомогательные аксессуары: отопитель, стеклоочистители, магнитоолу, кондиционер и т.д.

12. Выберите слово, относящееся к описанию механизма:

1. Mechanism which is used to stop the car.
a) clutch; b) brakes; c) gearbox; d) steering system
2. Mechanism which is used to guide the car.
a) clutch; b) brakes; c) gearbox; d) steering system
3. Mechanism which engages or disengages the engine and the car wheels.
a) clutch; b) brakes; c) gearbox; d) steering system
4. Mechanism which is used to change the speed of the car.
a) clutch; b) brakes; c) gearbox; d) accelerator
5. Mechanism which is used to guide the car in one or the other directions.
a) clutch; b) brakes; c) gearbox; d) steering system
6. Device which is designed to measure the speed of the car.
a) heater; b) windscreen; c) speedometer; d) tachometer

13. Переведите предложения на русский язык:

1. The automobile is known to be made up of three basic parts: the engine, the body and chassis, the engine being the source of power.
2. We know the body to include the hood and accessories.
3. The body should provide protection to the passengers from wind, cold and rain.
4. Thus to shape a car means to do it in such a way that it offers small resistance to the air.
5. Brakes are necessary for stopping the car.
6. Most braking systems used today are hydraulic.
7. The engine is known to be attached to the frame in three or four points.
8. Noise and vibration are inherent in engine operation.
9. To prevent this noise from passing to the frame, the engine should be insulated from the frame by washers.
10. We know the frame to provide support for engine, body and power train.
11. The frame is of channel sections welded together.

Вариант №2.

1. Выучите слова:

1	axle shafts	полуоси
2	brakes	тормоза
3	car springs	рессоры автомобиля
4	chassis	шасси
5	clutch	сцепление
6	crankshaft	коленчатый вал
7	driving wheels	ведущие колеса
8	final drive	главная передача
9	flywheel	маховик
10	fenders	крылья
11	final drive	главная передача
12	frame with axles	рама с осями
13	friction device	фрикционное устройство
14	gear	шестерня
15	gearbox	коробка передач
16	power transmission	силовая передача
17	rear axle	задний мост
18	running gear	ходовая часть
19	shaft	вал
20	steering system	система рулевого управления
21	tractive effort	тяговое усилие
22	unit	узел, блок, агрегат

2. Прочитайте и переведите текст « *Chassis* ».

The main units of the chassis are: the power transmission, the running gear and the steering mechanism. The power transmission includes the whole mechanism between the engine and the rear wheels. This entire mechanism consists of the clutch, gearbox, propeller (cardan) shaft, rear axle, final drive, differential and axle shafts. At the front end of the car is engine. On the back of it is the flywheel. Behind the flywheel is the clutch. The clutch is a friction device connecting the engine with the gear of the gearbox. The main function of the gearbox is to change the speed of the car.

The power is always transmitted by the cardan shaft to the live back axle. The final drive reduces the high speed of the engine to the low speed of the driving wheels.

The differential enables the driving wheels to turn at different speed which is necessary when turning the car. The foundation of the automobile is the frame to which different chassis units are attached.

The rear axle is capable of moving up and down about the frame. The rear axle is an important part of the transmission. It carries the greater portion of the weight of the car.

The steering mechanism is designed for changing the direction of the car.

The brakes are used for stopping the car, for decreasing its speed and for holding the car position.

3. Ответьте на вопросы по тексту « Chassis ».

1. What main units does the chassis consist of?
2. Where is the engine located?
3. Where is the flywheel fixed?
4. Where is the clutch placed?
5. What is gearbox designed for?
6. By what shaft is the power transmitted to the back axle?
7. What does the rear axle do?
8. What is the function of the differential?
9. What purpose is the steering system designed for?
10. What is the function of the brakes?

4. Выпишите из текста английские эквиваленты слов:

вал, ведущие колеса, главная передача, задний мост, коленчатый вал, коробка передач, система рулевого управления, фрикционное устройство;

5. Отметьте соответствующие содержанию текста предложения буквой Т, а не соответствующие – буквой F.

1. The rear axle is capable of moving up and down about the frame. _____
2. The rear axle is an important part of the transmission. _____
3. The rear axle doesn't carry the greater portion of the weight of the car. _____
4. The steering mechanism is designed for changing the direction of the car. _____
5. The brakes are used for stopping the car, for decreasing its speed and for holding the car position. _____

6. Дополните предложения, используя данные слова:

automobile, cardan shaft, driving wheels, enables, high speed;

The power is always transmitted by the _____ to the live back axle. The final drive reduces the _____ of the engine to the low speed of the _____. The differential _____ the driving wheels to turn at different speed which is necessary when turning the car. The foundation of the _____ is the frame to which different chassis units are attached.

7. Дайте три формы глагола и выпишите предложения из текста «Chassis » (задание №2) с данными глаголами:

to be, to carry, to change, to consist of, to enable, to include, to reduce, to transmit, to turn;

8. Поставьте глаголы, данные в скобках, в соответствующем времени.

1. The chassis (to include) the running gear, the power transmission and the steering mechanism.
2. The power transmission (to consist of) the clutch, gearbox, cardan shaft, rear axle, final drive, differential and axle shafts.
3. The clutch (to connect) the engine with the driving wheels.
4. The gearbox (to change) the speed of the car movement.
5. The steering mechanism (to change) the direction of the car.

9. Переведите предложения на русский язык:

1. Transmission, running gear and steering mechanism are known to be the main units of the chassis.
2. The clutch is known to connect the engine with the driving wheels of the car.
3. The gearbox is known to change the speed of the car.
4. The steering mechanism is known to change the direction of the car.
5. Brakes are considered to be one of the most important mechanisms of the car.

10. Выберите слово, относящееся к описанию механизма:

brakes, cardan shaft, clutch, differential, gearbox, rear axle, speedometer, steering system, steering wheel;

1. mechanism used to increase the speed of the car
2. wheel used to turn the direction of the car
3. mechanism used to transmit power to the back axle
4. Instrument used to measure the speed of the car.
5. mechanism that shows or stops the car
6. mechanism used to guide the car
7. mechanism used to engage or disengage the engine with gearbox
8. mechanism used to carry the greater portion of the car weight
9. mechanism used to turn the wheels at different speeds

11. Переведите предложения на английский язык:

1. Основными узлами шасси являются: трансмиссия ходовая часть и рулевой механизм.
2. Радиатор расположен в передней части автомобиля.
3. Маховик крепится на задней части двигателя.
4. Сцепление соединяет двигатель с коробкой передач.
5. Коробка передач предназначена для изменения скорости движения автомобиля.
6. Усилие передается карданным валом.
7. Главная передача снижает высокие обороты двигателя до невысоких оборотов ведущих колес.

8. Дифференциал позволяет ведущим колесам вращаться с разной скоростью при повороте автомобиля.
9. Рулевой механизм предназначен для изменения направления движения автомобиля.
10. Тормоза используются для остановки или снижения скорости автомобиля.

12. Переведите предложения на русский язык:

1. We know the chassis to be one of the most important units of the car.
2. The chassis is known to consist of a power train, a frame with axles, wheels and springs.
3. It should be noted that the chassis includes the brake and the steering systems as well.
4. Brakes are necessary to stop the car.
5. Springs are used with additional devices called shock absorbers.
6. The front wheels are attached to the rods by steering knuckle arms, the same wheels being on pivots.

Вариант №3.

1. Выучите слова:

1	body	кузов
2	channel section	полая секция
3	cross members	поперечины
4	frame	рама
5	insulate	изолировать
6	longitudinal members	лонжероны
7	reinforce	усиливать
8	rigid	жесткий
9	rivet	заклепывать
10	rubber pad	резиновая прокладка
11	strengthen	укреплять
12	strong	прочный
13	support	опора
14	suspension	подвеска
15	twist	кручение
16	unibody construction	конструкция с несущим кузовом
17	weld	сваривать
18	withstand strains	выдерживать нагрузки

2. Прочитайте и переведите текст «*Frame*».

The foundation of the automobile chassis is the frame which provides support for the engine, body and power-train members. Cross members reinforce the frame. The frame is rigid and strong so that it can withstand the shocks, vibrations, twists and other strains to which it is put on the road.

The frame provides a firm structure for the body, as well as a good point for the suspension system. There are two types of frames, namely: conventional frames and integral (unibody) frames (frameless constructions).

Conventional frames welded or rivended together. All other parts of the car are attached to the frame.

In order to prevent noise and vibrations from passing to the frame and from there to the passengers of the car, the frame is insulated from these parts by rubber pads.

It is also important to insulate the frame in order to prevent metal-to-metal contacts.

Frameless (unibody) constructions are called so because they are made integral with the body. The body parts are used to structurally strengthen the entire car. Some unibody frames have partial front and rear frames for attaching the engine and suspension members.

3. Ответьте на вопросы по тексту «Frame».

1. What does the frame provide?
2. Why is the frame rigid and strong?
3. What types of the frames are there?
4. What is the conventional frame made of?
5. By what is the frame insulated from the other car parts? For what purpose?
6. What do you know about unibody frames?

4. Выпишите из текста английские эквиваленты слов:

безрамная конструкция, выдерживать нагрузки, жесткий, лонжероны, обычная (общепринятая) рама, подвеска, полые секции, поперечины, прикреплять к раме, прочный, сваренные или заклепанные резиновые прокладки, укреплять

5. Отметьте соответствующие содержанию текста предложения буквой Т, а не соответствующие – буквой F.

1. The frame doesn't provide a firm structure for the body, as well as a good point for the suspension system. _____
2. There are three types of frames. _____
3. Conventional frames welded or rivended together. _____
4. All other parts of the car are attached to the frame. _____
5. The body parts are used to structurally strengthen the entire car. _____

6. Дополните предложения, используя данные слова:

body, chassis, members, rigid, vibrations, strains

1. The foundation of the automobile _____ is the frame which provides support for the engine, _____ and power-train members.
2. Cross _____ reinforce the frame.
3. The frame is _____ and strong so that it can withstand the shocks, _____, twists and other strains to which it is put on the road.

7. Дайте три формы глагола и выпишите предложения из текста

«Frame» (задание №2) с данными глаголами:

to be, can, to insulate, to provide, to reinforce, to weld;

8. Поставьте глаголы, данные в скобках, в соответствующем времени.

1. The frame (to be) a structural centre of any car as it provides support for the engine, body, wheels and power-train members.
2. Cross members (to reinforce) the frame and (to provide) support for the engine and wheels.

3. The frame (to be) extremely rigid and strong.
4. The engine (to attaché) to the frame in three or four points and (to insulate) in these points by some rubber pads to prevent vibration and noise from passing to the frame and thus to the passengers.
5. There (to be) two types of frames: conventional construction and unibody one.

9. Переведите предложения на русский язык:

1. We know the frame to be the structural centre of any car.
2. Car specialists consider the conventional frame to be extremely rigid and strong.
3. We know the frame to be insulated from the other parts by rubber pads to prevent metal-to metal contacts.
4. Many specialists consider the body parts to be used to structurally strengthen the entire car.
5. The manufacturers believe the unibody constructions to be called so because they are made integral with the body.

10. Дополните предложения, используя данные слова:

- channel sections welded together
- cross members
- the engine, body and power train members
- integral with the body
- prevent noise and vibrations from passing to the passengers

The frame provides support for... .

Conventional frames are made of... .

Frameless construction are made... .

The frame is insulated from other parts in order to... .

The frame is reinforced by... .

11. Переведите предложения на английский язык:

1. Рама обеспечивает опору для кузова, двигателя и узлов силовой передачи.
2. Она состоит из лонжеронов и поперечин, которые усиливают раму.
3. Рама должна выдерживать вибрацию, кручения и другие нагрузки (напряжения).
4. Рамы бывают двух типов: обычные (стандартные) и выполненные воедино с кузовом.
5. Стандартные рамы изготовлены из стальных полых секций, сваренных или закрепленных вместе.
6. Безрамные конструкции выполнены воедино с кузовом.

7. Рама изолируется от кузова резиновыми прокладками, чтобы шумы и вибрации не проходили к пассажирам автомобиля.

12. Переведите предложения на русский язык:

1. The frame is known to be the structural centre of the car.
2. It is made of channel section welded together, cross-member providing support for the engine and wheels.
3. We know the frame to be rigid.
4. Noise and vibrations are inherent in engine operation.
5. To prevent this noise and vibration from passing to the frame and to the Passengers of the car, the engine should be insulated from the by rubber washers.

Вариант №4.

1. Выучите слова:

1	axis	ось
2	axle	вал
3	characteristic feature	характерная особенность
4	constant-mesh gearbox	коробка передач с постоянным зацеплением шестерен
5	epicyclical (planetary) gearbox	эпициклическая (планетарная) коробка передач
6	fixed axes	зафиксированные (неподвижные) оси
7	forward speed	передняя скорость
8	gear	шестерня, передача
9	gearbox	коробка передач
10	gearing	зубчатое соединение
11	low gear	первая передача
12	ordinary gearing	стандартное зубчатое соединение
13	reverse drive	обратный (задний) ход
14	road conditions	дорожные условия
15	rotate bodily	вращаться корпусом
16	secure	обеспечить
17	shifting	переключение
18	sliding-mesh gearbox	коробка передач со скользящими шестернями
19	top gear	четвертая (прямая) передача

2. Прочитайте и переведите текст «*Gearbox*».

The gearbox is placed between the clutch and the propeller shaft. The principal function of the gearbox is to vary the speed of the car movement to meet the road conditions. The gearbox provides four forward speeds and one reverse, as follows:

- first or low gear
- second gear
- third gear
- fourth or top gear
- reverse gear

There are many constructional arrangements of gearboxes, which can be classified as follows:

- sliding – mesh type
- constant – mesh type
- epicyclical (planetary) type

The sliding - mesh type is the simplest one and is the oldest historically. The constant- mesh type is the most widely used type. They are termed “ordinary” gearing, the characteristic feature of which is that the axes of the various gears are fixed axes. The gears simply rotate about their own axes.

The characteristic feature of epicyclical (planetary) gearing is that one gear rotates about its own axis and also rotates bodily about some other axis.

To secure the several speeds of the car the clutch shaft is mounted in direct line with the gearbox shaft. The gearbox shaft carries on it the sliding gears which are used for shifting to secure the forward speeds and the reverse drive.

3. Ответьте на вопросы по тексту «*Gearbox*».

1. Where is the gearbox situated?
2. What is the function of the gearbox?
3. What speeds does the gearbox provide?
4. What types of gearboxes do you know?
5. Why is the clutch shaft mounted in direct line with the gearbox shaft?

4. Выпишите из текста английские эквиваленты слов:

вал, дорожные условия, ось, первая передача, передняя скорость, переключение, шестерня;

5. Отметьте соответствующие содержанию текста предложения буквой Т, а не соответствующие – буквой F.

1. The sliding - mesh type is the simplest one and is the youngest historically. _____
2. The constant- mesh type isn't widely used type. _____
3. They are termed “ordinary” gearing, the characteristic feature of which is that the axes of the various gears are fixed axes. _____
4. The gear simply rotate about their own axes. _____

6. Дополните предложения, используя данные слова:

clutch shaft, gearbox, secure, several, sliding

1. To secure the ____ speeds of the car the ____ is mounted in direct line with the ____ shaft.
2. The gearbox shaft carries on it the ____ gears which are used for shifting to ____ the forward speeds and the reverse drive.

7. Дайте три формы глагола и выпишите предложения из текста «*Gearbox*» (задание №2) с данными глаголами:

to be, to carry, to classify, to meet, to provide, to reinforce, to rotate, to use, to weld;

8. Поставьте глаголы, данные в скобках, в соответствующем времени и переведите данные предложения на русский язык:

1. Gearboxes (to assemble) and disassembled on special stands using special mechanisms.
2. In case of trouble in change-speed gearbox it can (to repair) only in workshop.
3. But in order not to get into trouble you should do the following steps: (to check) the oil level in the gearbox casing, (to wash) the breather channel, (to change) the oil in accordance with the lubrication schedule, (to wash) the gearbox with a thin mineral oil, (to drain) the used oil through the drain hole.
4. To secure the several speeds of the car the clutch shaft (to mount) in direct line with the gearbox shaft.

9. Дополните предложения, используя данные группы слов:

- four forward speeds and one reverse.
- the most widely used.
- to vary the speed of the car.
- The simplest one and historically oldest.
- Sliding-mesh type, constant-mesh type and planetary type.

1. The principal function of the gearbox is...
2. The gearbox provides...
3. Gearbox can be...
4. The sliding-mesh gearbox is...
5. The constant-mesh gearbox is...

10. Переведите предложения на английский язык:

1. Коробка передач предназначена для изменения скорости движения автомобиля.
2. Коробка передач обеспечивает четыре передние скорости и задний ход.
3. Коробки передач могут быть: со скользящими шестернями с постоянным зацеплением шестерен и планетарного типа.
4. Самыми простыми являются коробки передач со скользящими шестернями.
5. Коробки передач с постоянным зацеплением шестерен используются наиболее часто.
6. Скользящие шестерни на валу коробки передач используются для обеспечения передних скоростей и обратного хода.

Вариант №5.

1. Выучите слова:

1	at rest	в покое
2	clutch pedal	педадь сцепления
3	connect	соединять
4	fix	крепить, устанавливать
5	frictional force	сила трения
6	friction device	фрикционное устройство
7	friction disc (plate)	фрикционный диск
8	flywheel	маховик
9	gearbox	коробка передач
10	hard-wearing material	износостойкий материал
11	is disengaged	отключено
12	is engaged	включено
13	pressure disc	нажимной диск
14	release the engine	отсоединить двигатель
15	rotate bodily	вращаться корпусом
16	run idly	работать вхолостую
17	shifting	переключение
18	start the car	завести автомобиль
19	top gear	четвертая (прямая) передача

2. Прочитайте и переведите текст «*Clutch*».

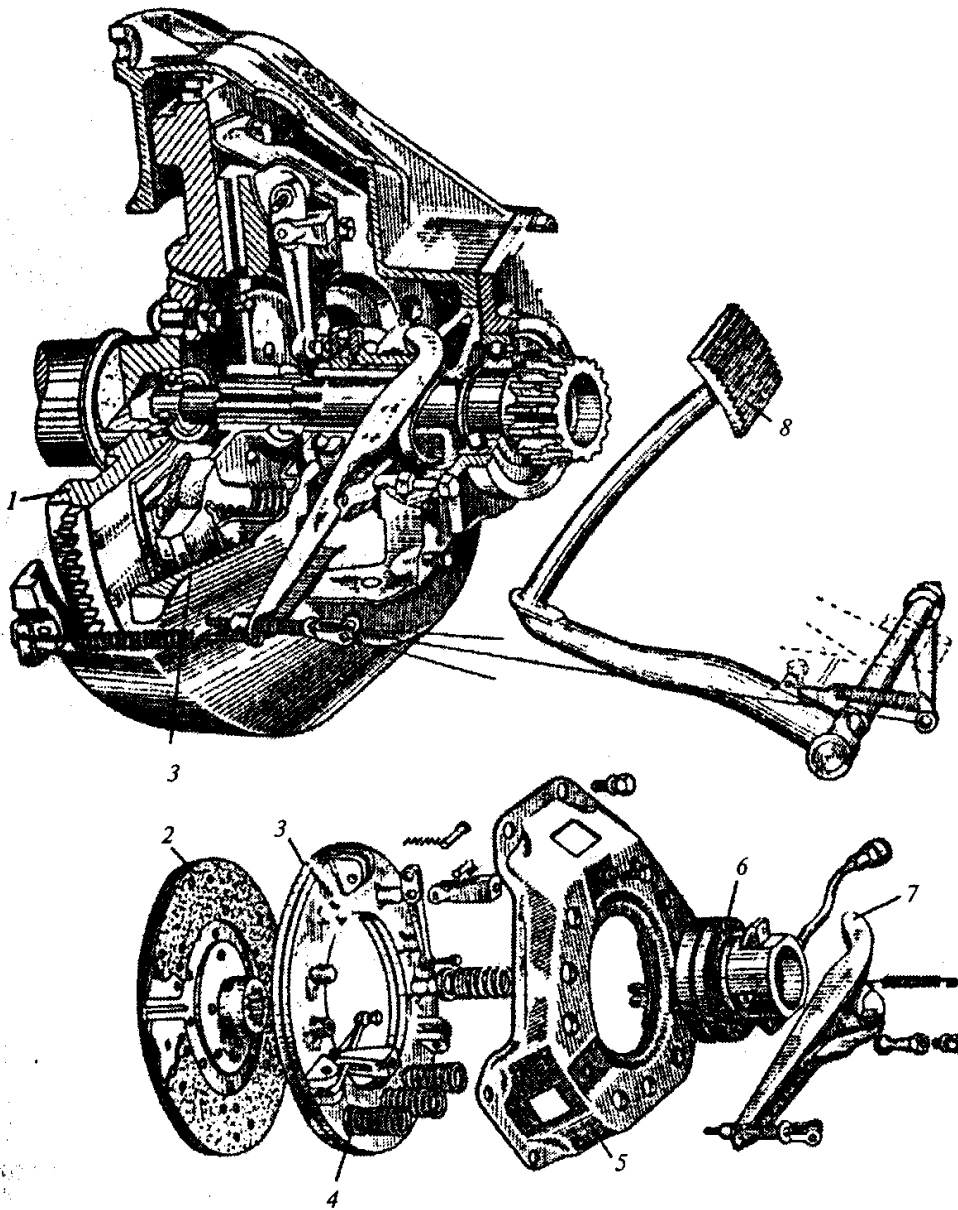
The clutch is a friction device. It connects the engine to the gears in the gearbox. It is used for disconnecting the engine from the gearbox, for starting the car and for releasing the engine from the car wheels.

The clutch is fixed between the flywheel of the engine and the gearbox and consists of two plates (discs): the friction disc and the pressure disc. The friction disc is situated between the flywheel and the pressure plate and has a hard-wearing material on each side. The basic principal operation of the clutch is a frictional force acting between two discs. The clutch is controlled by the clutch pedal. When the pedal is at rest the clutch is engaged and the running engine is connected to the gearbox. When the pedal is pressed down the clutch is disengaged and the engine runs idly.

3. Ответьте на вопросы по тексту «*Clutch*».

1. What device is the clutch?
2. What units does it connect?
3. What is the clutch used for?
4. Where is the clutch placed?
5. What plates does the clutch consist of?
6. What is the basic principal operation of the clutch?
7. What is the clutch controlled by?

8. What takes place when the clutch pedal is rest?
9. When does the engine run idly?



Picture 1. Clutch

1. flywheel – маховик
2. friction disc – фрикционный диск
3. pressure disc – нажимной диск
4. spring – пружина
5. cover - крышка
6. thrust bearing – упорный подшипник
7. lever - рычаг
8. pedal – педаль

4. Выпишите из текста английские эквиваленты слов:

для отключения двигателя от коробки передач, крепится между маховиком и коробкой передач, нажимной диск, педаль в исходном

положении, педаль сцепления нажата, сцепление включено, фрикционный (ведомый) диск, фрикционная сила, функции сцепления;

5. Отметьте соответствующие содержанию текста предложения буквой Т, а не соответствующие – буквой F.

1. The basic principal operation of the clutch is a frictional force acting between three discs. _____
2. The clutch is controlled by the gearbox. _____
3. When the pedal is at rest the clutch is engaged and the running engine is connected to the gearbox. _____
4. When the pedal is pressed down the clutch is disengaged and the engine runs idly. _____

6. Дополните предложения, используя группы слов и переведите данные предложения:

1. The clutch is a device connecting...
 - a) the rear axle and axle shafts.
 - b) the gearbox and differential.
 - c) the engine and the gearbox.
2. The clutch is situated between...
 - a) the gearbox and cardan shaft.
 - b) the flywheel and the gearbox.
 - c) the gearbox and rear axle.
3. The clutch is controlled by...
 - a) the brake pedal.
 - b) the clutch pedal
 - c) the gearbox and rear axle.
4. The clutch is engaged...
 - a) when the clutch pedal is pressed down.
 - b) when the clutch pedal is at rest.
5. The clutch is disengaged...
 - a) when the clutch pedal is at rest.
 - b) when the clutch pedal is pressed down.

7. Дайте три формы глагола и выпишите предложения из текста «Clutch» (задание №2) с данными глаголами:

to be , to do, to engage, to fix, to free, to press down, to release, to start

8. Поставьте глаголы, данные в скобках, в соответствующем времени и переведите данные предложения на русский язык:

1. The clutch (to fix) between the flywheel of the engine and the gearbox.
2. The clutch (to consist of) two plates (discs): the friction disc and the pressure disc.
3. The friction disc (to situate) between the flywheel and the pressure plate and (to have) a hard- wearing material on each side.

4. The basic principal operation of the clutch (to be) a frictional force acting between two discs.
5. The clutch (to control) by the clutch pedal.

9. Дополните предложения, используя данные группы слов:

at rest, controlled, do, disengaged, engaged, fixed, freeing the engine from the gearbox, freeing the engine from the car wheels, gearbox, located, pedal, serve, starting the;

1. What three frictions does the clutch...?
2. Is used for...
3. Where is it...?
4. It is... between the flywheel of the engine and the... .
5. By what is the clutch...?
6. It is... by the
7. What takes place when the pedal is...?
8. The clutch is... .
9. And when the driver pushes down on the pedal?
10. The clutch is... .

10. Переведите предложения на английский язык:

1. Сцепление – это фрикционное устройство.
2. Сцепление соединяет двигатель и коробку передач.
3. Сцепление расположено между маховиком двигателя и коробкой передач.
4. Как правило, сцепление состоит из двух дисков: ведомого и нажимного.
5. Сцепление управляется педалью сцепления.
6. Когда педаль сцепления находится в покое, диски сцепления соединены и работающий двигатель соединен с коробкой передач и колесами.
7. Когда водитель нажимает на педаль сцепления, диски отходят, сцепление отсоединяется, и двигатель работает вхолостую.

Вариант №6.

1. Выучите слова:

1	band brake	ленточный тормоз
2	brakes	тормоза
3	brake pedal	тормозная педаль
4	brakes are applied	тормоза срабатывают
5	braking effort	тормозное усилие
6	brake fluid	тормозная жидкость
7	brake shoes	колодки тормоза
8	depend	зависеть
9	divide	разделять
10	disc brakes	дисковые тормоза
11	drum brakes	барабанные тормоза
12	force the fluid	подавать жидкость
13	hydraulic assisted brakes	тормоза с гидравлическим приводом
14	master cylinder	главный цилиндр
15	namely	именно
16	performance	работа
17	push down on the brake pedal	нажать на тормозную педаль
18	safety	безопасность
19	shoe brake	колодочный тормоз
20	slow	замедлять
21	under pressure	под давлением

2. Прочитайте и переведите текст «*Brakes*».

Brakes are used to slow or stop the car where it is necessary. It is one of the most important mechanisms of the car as upon its proper performance the safety of passengers depends. Car brakes can be divided into two types, namely: drum brakes and disc brakes. The drum type may be either a band brake or a shoe brake. Depending on their functions, the automobile has foot brakes and hand brakes (parking brakes). According to their mode of operations, the brakes are classified as: mechanical brakes, hydraulic brakes, air brakes, electric brakes. Brakes are controlled by the brake pedal.

Most braking systems in use today are hydraulic. The system consists of a master cylinder mounted on the car frame and wheel cylinders. When the driver pushes down on the brake pedal, it forces the piston to move in the master cylinder and brake fluid is delivered from it to the wheel cylinders. The piston movement causes brake shoes to move and the brakes are applied (the brake shoes are pressed against the brake drums).

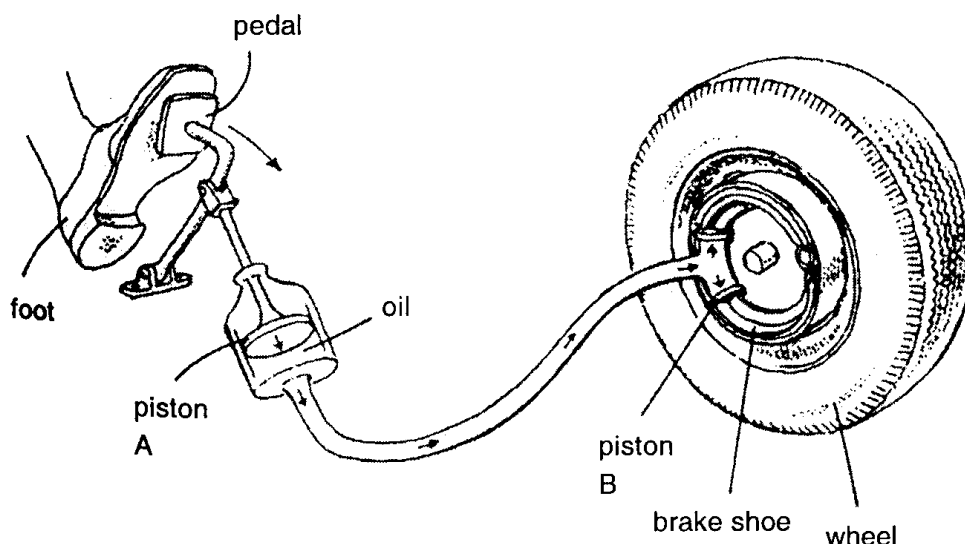
The air brake uses compressed air to apply the breaking force to the brake shoes.

Electric brakes use electromagnets to provide the braking effort against the brake shoes.

Formerly brakes were applied only to the two rear wheels, but now all cars are equipped with all-wheels brakes. Today many improvements are being made in brakes.

3. Ответьте на вопросы по тексту «Brakes».

1. What is the function of the brakes?
2. What types are brakes divided into?
3. What brakes do you know according to their mode of operation?
4. What braking systems are used today?
5. By what are brakes controlled?
6. When are brakes applied?



Picture 2. Brake System

4. Выпишите из текста английские эквиваленты слов:

барабанные тормоза, безопасность пассажиров, дисковые тормоза, зависит от, тормоза с гидравлическим приводом, тормоза с усилителем

5. Отметьте соответствующие содержанию текста предложения буквой Т, а не соответствующие – буквой F.

1. Most braking systems in use today are hydraulic. _____
2. The system consists of a master cylinder mounted on the car frame and wheel cylinders. _____
3. When the driver pushes down on the brake pedal, it forces the piston to stop in the master cylinder. _____

4. Brake fluid is delivered from it to the wheel cylinders. _____
5. The piston movement causes brake shoes to move and the brakes are applied. _____
6. The brake shoes are pressed against the brake drums. _____

6. Дополните предложения, используя данные слова:

- disk brakes and drum brakes
- the driver pushes down on the pedal
- the brake pedal
- stopping the car
- the most important mechanisms of the car

1. Brakes are used for...
2. Brakes are one of...
3. Brakes may be of two types...
4. Brakes are applied by...
5. Brakes are applied when

7. Дайте три формы глагола и выпишите предложения из текста

«**Brakes**» (задание №2) с данными глаголами:

to be, to deliver, to depend upon, to move, to press down

8. Поставьте глаголы, данные в скобках, в соответствующем времени и переведите данные предложения на русский язык:

1. Brakes (to be) the most important mechanism of the car.
2. They (to use) to slow or stop the car where it (to be) necessary.
3. The clutch (to be) a friction device.
4. It connects the engine to the wheels in the gearbox.
5. It (to use) for freeing the engine from the gearbox, for starting the car and for releasing the engine from the car wheels.
6. It (to find) between the flywheel of the engine and the gearbox.
7. They (to divide) into two types, namely: drum brakes and disc brakes.
8. Most cars of today (to use) hydraulic or power assisted brakes.
9. They may (to be) of two plates: friction disc and pressure disc.
10. The friction disc (to situate) between the flywheel and the pressure disc.

9. Переведите предложения на английский язык:

1. Тормоза являются наиболее важным механизмом автомобиля.
2. Они используются для замедления движения или остановки автомобиля.
3. Тормоза можно разделить на два типа, а именно: барабанные тормоза и дисковые тормоза.
4. На большинстве автомобилей используется гидравлический привод или пневматический привод.
5. Тормоза срабатывают, когда водитель нажимает на тормозную педаль.

Вариант №7.

1. Выучите слова:

1	ball joint	шаровой шарнир
2	for this purpose	для этой цели
3	front wheel	передние колеса
4	guide the car	управлять автомобилем
5	hose	шланг, рукав
6	injury	повреждение
7	in turn	в свою очередь
8	leverage	рычажный механизм
9	means of turning	средство поворота
10	pitman arm	рулевая сошка
11	pivot	шарнир
12	rack and pinion assembly	рулевой механизм с рейкой и шестерней
13	rack and pinion type	реечно-шестеренчатый тип (рулевого механизма)
14	recirculating ball steering	рулевой механизм с шариковой гайкой
15	steering box	steering box
16	steering column	рулевая колонка
17	steering knuckle arm	рычаг поворотного кулака
18	steering wheel	рулевое колесо
19	swing (swang, swung)	поворачивать (ся)
20	tie-rod	замедлять
21	worm and sector	червяк и сектор

2. Прочитайте и переведите текст «*Steering System*».

To guide the car, it is necessary to have some means of turning the front wheels so that the car can be pointed in the direction the driver wants to go. The steering wheel in front of the driver is linked by gears and levers to the front wheels for this purpose. The front wheels are on pivots so they can be swung to the left or right. They are attached by steering knuckle arms to the rods. The tie-rods are, in turn, attached to the pitman arm.

When the steering wheel is turned, gearing in the steering gear assembly causes the pitman arm to turn to the left or right. This movement is carried by the tie-rods to the steering knuckle arms, and wheels, causing them to turn to the left or right.

The steering system incorporates: the steering wheel and column, steering gear, pitman arm, steering knuckle arm, front axle, steering knuckle pivot, tie-rods.

There are several different manual steering gears in current use, such as the rack and pinion type and the recirculating ball type. The rack and pinion steering gear is widely used. Another manual steering gear which is popular in imported cars is the worm and sector type.

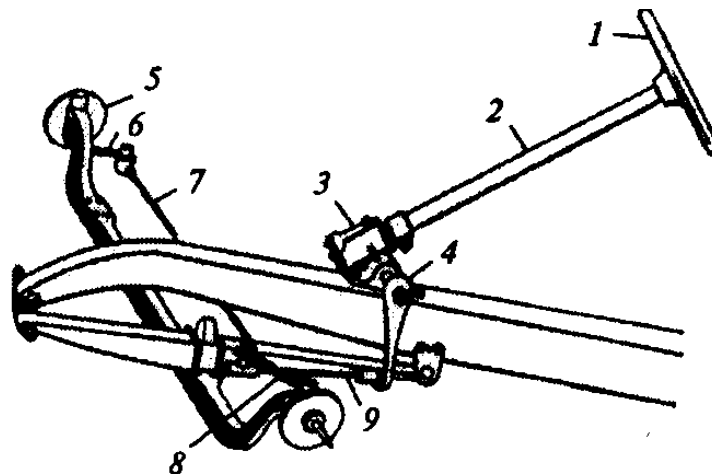
The steering wheel and column are the source of injury to the driver, air bags and other devices being developed now to save the life of a driver.

Energy-absorbing columns must stop the steering wheel and column from being pushed to the rear as the front of the car is crushed in an impact.

Energy—absorbing column must also provide the driver with a tolerable impact as he moves forward and strikes the wheel with his chest.

3. Ответьте на вопросы по тексту «*Steering System*».

1. What mechanism is necessary to guide the car?
2. How is the steering wheel connected to the front wheels?
3. Why can the front wheel be swung to the left or to the right?
4. What does the manual steering system incorporate?
5. What types of manual steering gears in use do you know?



Picture 3. Steering System

1. steering wheel
2. steering column, steering mast
3. steering gear
4. steering arm, steering lever (steering pitman arm)
5. steering knuckle
6. steering knuckle lever, steering knuckle lever arm
7. single tie-rod
8. steering knuckle lever, steering knuckle lever arm
9. drag link, steering gear connecting rod, steering drag rod

4. Выпишите из текста английские эквиваленты слов:

картер рулевого механизма, передние колеса, поперечная тяга, рулевое колесо, рулевая колонка, рулевой механизм, рулевая сошка, рычажный механизм, средство поворота, управлять автомобилем, червяк и сектор, шланг (рукав)

5. Отметьте соответствующие содержанию текста предложения буквой Т, а не соответствующие – буквой F.

1. The steering system incorporates: the steering wheel and column, steering gear, pitman arm, steering knuckle arm, front axle, steering knuckle pivot, tie-rods. _____
2. There are several different manual steering gears in current use, such as the rack and pinion type and the recirculating ball type. _____
3. The rack and pinion steering gear isn't widely used. _____
4. Another manual steering gear which is popular in imported cars is the worm and sector type. _____

6. Дополните предложения, используя данные слова:

1. The front wheels are on pivots so...
2. When the steering wheels is turned...
3. The steering wheel is linked...
4. Most manufactures use...
5. Steering gear may be...
6. Steering knuckle arms and wheels are turned...
 - by the tip-rods.
 - rack and pinion type, recirculating ball type, worm and sector type.
 - gearing in the steering systems causes the pitman arm to turn.
 - rack and pinion type.
 - they can be swung to left or right.
 - By gears and levers to the front wheels.

7. Дайте три формы глагола и выпишите предложения из текста

«Steering System»(задание №2) с данными глаголами:

to be, to guide the car, to have, to turn, to carry

8. Поставьте глаголы, данные в скобках, в соответствующем времени и переведите данные предложения на русский язык:

Troubles of Steering Gear Components

1. Steering gear and linkage may (to have) the following basic troubles: excessive steering-wheel free play, bending of steering rod, oil leakage from the steering-gear case, disadjustment of steering gear.

What to do

1. (to check) the steering – wheel free play and steering gear performance while the car is running.
2. (to check) the steering – gear case for oil leakage by visual inspection.
3. (to adjust) the steering gear. Steering gear of the worm and roller type (to adjust) by end playing in the steering worm shaft bearings.

9. Переведите предложения на русский язык:

1. This method is not good enough to be used everywhere.
2. People made many efforts to find a new source of energy.
3. A new comfortable coach was developed to transport people over long distances.
4. He was saving money to travel about the country.
5. It did not take much time to pave the road again.
6. The internal combustion engine to be used in this lorry is of a new design.
7. The road surface to be repaired was destroyed many years ago by heavy vehicles.
8. The main step to take is to settle the problem of city transport at peak hours.

10. Переведите предложения на английский язык:

1. Для управления автомобилем необходима система рулевого управления.
2. Рулевое управление включает в себя: рулевое колесо и рулевую колонку, зубчатое соединение, рулевую сошку, рычаги поворотного кулака и шарнирные соединения, рычаги и поперечные тяги.
3. Существуют различные типы рулевых механизмов, а именно: реечно-шестеренчатый тип, механизм с шаровой гайкой, механизм с червяком и сектором.
4. Когда водитель поворачивает руль влево или вправо, то рулевой механизм заставляет рулевую сошку поворачиваться влево и вправо.
5. Это движение передается поперечными тягами к рычагам поворотных кулаков и к колесам, заставляя их поворачиваться влево или вправо.

Вариант №8.

1. Выучите слова:

1	compress	сжимать
2	compression	такт сжатия
3	crankshaft	коленчатый вал
4	cylinder	цилиндр
5	exhaust stroke	такт выпуска
6	fuel injection	впрыск топлива
7	intake stroke	такт впуска
8	move down	двигаться вниз, опускаться
9	piston	поршень
10	pitman arm	рулевая сошка
11	pivot	шарнир
12	power stroke	рабочий ход
13	reliability	надежный
14	valve	клапан

2. Прочитайте и переведите текст «*Engine Components*».

Let's look closer at the engine components that operate together to generate power. The basic unit of the engine is the piston which moves up and down inside a cylinder. As air is compressed in the cylinder, fuel is injected on top of the piston. Under high pressure the fuel mixes with the hot air and self-ignites causing combustion. The force of the Combustion pushes the piston and connecting rod down turning the Crankshaft and flywheel which drive other components.

During engine operation the piston goes through four strokes: intake, compression, power and exhaust. During the four strokes, the piston moves down and up to complete cycles.

Intake: During the intake stroke the piston moves down in the cylinder pulling air past an open intake valve into the combustion chamber.

Compression: During the compression stroke all valves are closed, and piston moves up in the cylinder compressing the air. As the air molecules are compressed the air temperature increases dramatically to about 10000 F (5370 C). As the piston nears the top of its stroke, fuel is injected into the combustion chamber on top of the piston. The fuel mixes with the hot compressed air and causes combustion.

Power: During the power stroke the valves are closed as the forces from combustion push the piston and connecting rod down, thereby turning the crankshaft. The heat energy has now been converted into mechanical power.

Exhaust: During the exhaust stroke the inertial force of the turning flywheel helps continue the rotation of the crankshaft to push the piston up again in the cylinder forcing the burned gases out the open exhaust valve. This completes the four strokes of the piston. These four strokes are repeated over and over as the engine operates.

Diesel engine offer the following advantages over automotive-type gasoline engines:

Fuel economy

Diesel engines have higher compression ratios and therefore burn fuel more completely and efficiently.

Reliability

Diesel engines have no electrical ignition system to fail or be maintained. They are built with heavy-duty parts to withstand the higher compression ratios and to operate for long periods with minimum breakdown.

In on-highway trucks for instance, diesel engines have a projected service life of many hundreds of thousands of miles.

Power

It depends on engine size, but diesel engines generally produce more torque and power output than gasoline engines.

3. Ответьте на вопросы по тексту «*Engine Components*».

1. What takes place in the combustion chamber during the intake stroke?
2. What takes place in the cylinder during the compression stroke?
3. What takes place in the combustion chamber during the power stroke?
4. What takes place in the combustion chamber during the exhaust stroke?
5. What advantages do diesel engines offer?

4. Выпишите из текста английские эквиваленты слов:

впрыск топлива, двигаться вниз, клапан, коленчатый вал, поршень, рабочий ход, сжимать, такт сжатия

5. Отметьте соответствующие содержанию текста предложения буквой Т, а не соответствующие – буквой F.

1. The basic unit of the engine is the cylinder. _____
2. The piston moves up and down inside a cylinder. _____
3. As air is compressed in the cylinder, fuel is injected on top of the piston. _____
4. During the compression stroke all valves are opened. _____
5. The fuel mixes with the hot compressed air and causes combustion. _____

6. Дополните предложения, используя по смыслу данные группы слов:

1. The internal combustion engine is called so because fuel is burned... .

- a) out side the engine
- b) inside the engine
- 2. On the inlet stroke....
 - a) the intake valve opens
 - b) the intake valve is closed
 - c) the intake and the exhaust valves are closed
- 3. On the exhaust stroke....
 - a) the stark plugs ignite the mixture, both valves are closed during its combustion
 - b) the exhaust valve is opened and the residual gas flows through the exhaust valve into the atmosphere
- 4. It is done....
 - a) by means of pistons
 - b) by means of the connecting rods

7. Дайте три формы глагола и выпишите предложения из текста «*Engine Components*»(задание №2) с данными глаголами: *to be, to call, to connect, to flow, to inject, to move*

8. Поставьте глаголы, данные в скобках, в соответствующем времени и переведите данные предложения на русский язык:

1. During the compression stroke all valves (to close), and piston (to move) up in the cylinder compressing the air.
2. As the air molecules (to compress) the air temperature (to increase) dramatically to about 10000 F (5370 C).
3. As the piston (to near) the top of its stroke, fuel (to inject) into the combustion chamber on top of the piston.
4. The fuel (to mix) with the hot compressed air and causes combustion.

9. Переведите предложения на русский язык:

- Не знаю, что случилось с моей машиной.
- Let me trace the fault.
- Пожалуйста. Ты опытный водитель?
- Yes, I am. I have been driving a car for fifteen years now. May be you have run out of fuel.
- Бак почти полный.
- When did you have your plugs checked?
- Вчера. Карбюратор тоже в порядке.
- В таком случае давай поедем до ближайшей ремонтной станции.
- Good idea. They will have the car fixed.

10. Дополните предложения, используя группы слов:

air, compression stroke, increases, is injected, mixes, piston

1. During the _____ all valves are closed, and piston moves up in the cylinder compressing the _____.
2. As the air molecules are compressed the air temperature _____ dramatically to about 10000 F (5370 C).
3. As the _____ nears the top of its stroke, fuel _____ into the combustion chamber on top of the piston.
4. The fuel _____ with the hot compressed air and causes combustion.

11. Переведите предложения на русский язык:

5. We know the power train include the most clutch, gearbox, propeller shaft, rear axle, final drive and differential.
6. The clutch is used for engaging the engine with the gearbox, the gearbox being located between the clutch and the propeller shaft.
7. The clutch is known to consist of tow plates incorporated within the flywheel housing.
8. To shape the car means to make it in such manner that it offers small resistance to the air.
9. We know the engine to be the source of power.
10. In some types of engines a V-type fan belt is utilized to drive the fan, the same belt being used for driving the generator pulley and the water pump.
11. The engine is known to comprise the fuel, cooling, electric and lubricating systems.
12. It should be noted that the gasoline pump is operated from the camshaft by the engine, called also the power plant.
13. To guide the car means to turn it in one direction or the other

Вариант №9

1. Выучите слова:

1	adaptive memory	адаптивная память
2	advanced	усовершенствованный
3	a breaker point ignition	прерывистое зажигание
4	CPU(Central Pressing Unit)	центральный процессор
5	expensive	дорогостоящий
6	fire the spark plug	воспламенять свечой зажигания
7	integrated circuit	интегральная схема
8	invent	изобретать
9	on board computer system	бортовой компьютер
10	permanent memory	постоянная память
11	provide	обеспечить
12	PROM(programmable read only memory)	программируемое постоянное запоминающее устройство, ППЗУ
13	RAM (random access memory)	оперативная память, оперативное запоминающее устройство, ОЗУ
14	ROM (read only memory)	постоянная память, постоянное запоминающее устройство, ПЗУ
15	semiconductor	полупроводник
16	silicon	кремний
17	smooth operating	плавная работа
18	software	обеспечение
19	specific sequence	специальная последовательность
20	trouble code	неисправный код
21	until	пока не

2. Прочитайте и переведите текст «Using Computer».

Ever since the car was first invented, a breaker point ignition has been used to transform battery voltage into 20,000 volts to fire the spark plugs. With government intervention and regulation, more advanced system was needed. This system had to meet emission control levels, gas mileage, and provide a smooth and continuous operation. The answer was found in an on – board computer system. The computer mounted on modern cars has two components. One is the hardware and the hardware and the other is the software.

The computer hardware on an automobile uses a Central Processing Unit (CPU), which, when made in an integrated circuit, is referred to as a microprocessor. The integrated circuit (IC) combines transistors, diodes, and capacitors, which are placed on a tiny chip of semiconductor material that is smaller and thinner than an eraser on a pencil. The material used most of the time is silicon. Silicon, like any semiconductor, does not conduct electricity until either voltage, a magnetic field, heat, or light is directed to the semiconductor. A program instructs the microprocessor.

The computer software on a car carries a program. The program tells the computer what to do, and when to do it in a specific sequence. The program is stored in a permanent memory, which is referred to as Read Only Memory (ROM). The computer knows only what is placed in its memory. There is another variation, which called the Programmable Read Only Memory (PROM), which can be readily removed and replaced, while the ROM cannot. This makes it less expensive if the memory becomes defective. Only the PROM has to be replaced, not the entire microprocessor.

The microprocessor contains a ROM (or PROM) and a RAM. RAM stands for Random Access Memory, which can be accessed without going through a specific sequence. The technician interfaces with the RAM whenever trouble codes are accessed. Not all computerized ignition systems have trouble codes, however. Some computers have the ability to learn. This is referred to as an adaptive memory. When a value falls outside of a specified limit, due to engine wear, the adaptive memory makes a slight adjustment in the program to compensate. The car must be driven from 20 to 30 miles, as it takes the computer this long to learn. Any time that power is disconnected from the computer, it will have to relearn everything.

3. Ответьте на вопросы по тексту «Using Computer».

1. How many components have the computer on modern cars? What are they?
2. How do we call the computer hardware on the automobile?
3. What does an integrated circuit combine?
4. What material is used in the integrated circuit? Why?
5. What does the computer software do?
6. Why is the computer used on board the car?
7. What does the program tell to the computer?
8. Where is the program stored?
9. What is ROM?
10. What is PROM?
11. What is RAM?

4. Выпишите из текста предложения с данными словами:

battery, chip, code, compensate, computer, defective, diode, electricity,

limit, magnetic, material, microprocessor, program, regulation, system, transform, transistor, variation, voltage

5. Переведите данные слова:

1. ignite – ignition,
2. transform – transformation,
3. regulate – regulation,
4. break – breaker,
5. conduct – conductor,
6. process – processor,
7. specify – specific,
8. adapt – adapter – adaptive,
9. expense – expensive,
10. adjust – adjustment,
11. connect – disconnect,
12. learn – relearn.

5. Отметьте соответствующие содержанию текста предложения буквой Т, а не соответствующие – буквой F.

1. The computer mounted on modern cars has two components. _____
2. Silicon, like any semiconductor, does not conduct electricity. _____
3. The computer software on a car doesn't carry a program. _____
4. Not all computerized ignition systems have trouble codes. _____
5. The computer hardware on an automobile uses a Central Processing Unit. _____

Module 1

7. Дайте три формы глагола и выпишите предложения из текста «Using Computer» (задание №2) с данными глаголами:

access, be, fall, have, invent, know, learn, meet

8. Поставьте глаголы, данные в скобках, в соответствующем времени и переведите данные предложения на русский язык:

1. Some computers (to have) the ability to learn.
2. This (to refer) to as an adaptive memory.
3. When a value (to fall) outside of a specified limit, due to engine wear, the adaptive memory (to make) a slight adjustment in the program to compensate.
4. The car must be driven from 20 to 30 miles, as it (to take) the computer this long to learn.

5. Any time that power (to disconnect) from the computer, it will have to relearn everything.

9. Переведите предложения на английский язык:

1. Многие современные автомобили оборудованы бортовыми компьютерными системами для лучшей работы автомобиля.
2. Программа такого компьютера имеет только два запоминающих устройства: постоянную память (ПЗУ) и оперативную память (ОЗУ).
3. Компьютерная программа сообщает компьютеру, что надо делать и когда необходимо выполнить данное действие в соответствующей последовательности.
4. Программа хранится в постоянной памяти компьютера.
5. Микропроцессор содержит в себе постоянную и оперативную память.
6. Некоторые компьютеры обладают способностью запоминать (заучивать). Это относится к адаптивной памяти.

Вариант №10.

1. Выучите слова:

1	bottom dead center	нижняя мертвая точка
2	charge of fuel	заряд топлива
3	combustion	сгорание
4	combustion chamber	камера сгорания
5	compression stroke	такт сжатия (смеси)
6	connecting rod	шатун
7	crankshaft	коленчатый вал
8	cylinder	цилиндр
9	diesel engine	дизельный двигатель
10	engine	двигатель
11	exhaust stroke	такт выпуска
12	four-stroke cycle fuel injection	четырёхтактный цикл
13	fuel injection	впрыск топлива
14	ignite	воспламенять
15	ignition	воспламенение
16	intake (inlet) stroke	такт впуска
17	internal combustion engine	двигатель внутреннего сгорания
18	mixture	смесь
19	operating cycle	рабочий цикл
20	petrol engine	поршень
21	piston	под давлением
22	power stroke	рабочий ход
23	pressure	давление
24	reciprocating movement	возвратно-поступательное движение
25	residual gas	остаточный газ
26	rotary movement	вращательное движение
27	spark plug	свеча зажигания
28	stroke	ход (поршня)
29	top dead center	верхняя мертвая точка

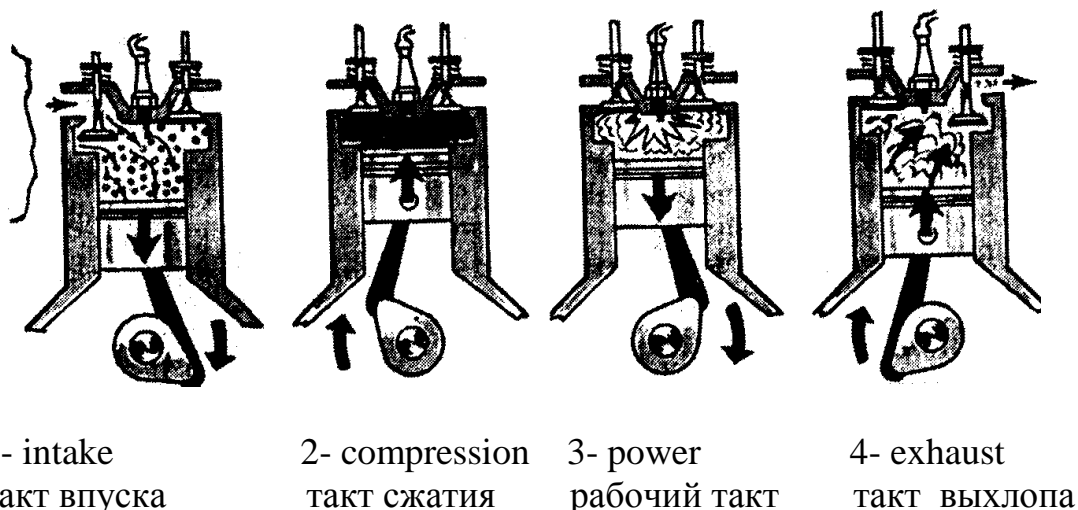
2. Прочитайте и переведите текст «*Principle of Operation of the Four-Stroke Petrol Engine*».

The internal combustion engine is called so because fuel is burned directly inside the engine itself. Most automobile engines work on a 4-

stroke cycle. A cycle is one complete sequence of 4 strokes of the piston in the cylinder. The operating cycle of the four-stroke petrol engine includes: inlet stroke (intake valve opens), compression stroke (both valves closed), power stroke (both valves closed), exhaust stroke (exhaust valve is opened).

To describe the complete cycle, let's assume that the piston is at the top of the stroke (top dead center) and the inlet and the exhaust valves are closed. When the piston moves down the inlet valve opens to intake a charge of fuel into the cylinder. This is called the inlet (intake) stroke. On reaching the lowest position (bottom dead center) the piston begins to move upward into the closed upper part on the cylinder, the inlet valve is closed and the mixture is compressed by the rising piston. This is called the compression stroke. As the piston again reaches the top dead center the spark plugs ignite the mixture, both valves being closed during its combustion. As a result of burning mixtures the gases expand and great pressure makes the piston move back down the cylinder. This stroke is called the power stroke. When the piston reaches the bottom of its stroke, the exhaust valve is opened, pressure is released, and the piston again rises. It lets the burnt gas flow through the exhaust valve into the atmosphere. This is called the exhaust stroke which completes the cycle. So the piston moves in the cylinder down (intake stroke), up (compression stroke), down (power stroke), up (exhaust stroke).

The heat released by the fuel is transformed into work so that the reciprocating movement of the pistons is converted into rotary movement of a crankshaft by means of connecting rods.



Picture 4. Principle of Operation of the Four- Stroke Petrol Engine

3. Ответьте на вопросы по тексту «Principle of Operation of the Four-Stroke Petrol Engine».

1. Why is the engine called the internal combustion engine?

2. What stroke is called the inlet one?
3. What is a compression stroke?
4. What takes place in the cylinder on power stroke?
5. What takes place on the exhaust stroke?
6. By means of what is the reciprocating movement of the pistons converted into rotary movement of a crankshaft?

4. Выпишите из текста предложения с данными словами:

бензиновый двигатель, заряд топлива, камера сгорания, коленчатый вал, остаточный газ, свеча зажигания, смесь, такт впуска, такт выпуска, ход (поршня)

5. Отметьте соответствующие содержанию текста предложения буквой Т, а не соответствующие – буквой F.

1. When the piston moves down the inlet valve opens to intake a charge of fuel into the cylinder. _____
2. This is called the inlet (intake) stroke. _____
3. On reaching the lowest position (bottom dead center) the piston begins to move upward into the closed upper part on the cylinder. _____
4. The inlet valve is closed but the mixture isn't compressed by the rising piston. This is called the compression stroke. _____
5. As the piston again reaches the top dead center the spark plugs ignite the mixture, both valves being closed during its combustion. _____
6. As a result of burning mixtures the gases expand and great pressure makes the piston move back down the cylinder. _____
7. This stroke is called the power stroke. _____

6. Дополните предложения, используя подходящий вариант:

1. On the inlet stroke... .
 - a) the intake valve opens
 - b) the intake valve is closed
 - c) the intake and the exhaust valves are closed
2. On the compression stroke
 - a) the intake valve opens
 - b) the intake valve is closed
 - c) the intake and the exhaust valves are closed
3. On the power stroke... .
 - a) the intake valve opens
 - b) the intake valve is closed
 - c) the intake and the exhaust valves are closed
4. On the exhaust stroke... .
 - a) the exhaust valve opens
 - b) the intake valve is closed
 - c) the intake and the exhaust valves are closed

7. Дайте три формы глагола и выпишите предложения из текста «Principle of Operation of the Four-Stroke Petrol Engine» (задание №2) с данными глаголами:
to burn, to call, to close, to convert, to flow, to ignite, to let, to move, to reach.

8. Поставьте глаголы, данные в скобках, в соответствующем времени и переведите данные предложения на русский язык:

1. Disk and drum brakes (to be) conventional ones.
2. Improved hydraulic systems and anti-lock devices (to design) to make brakes more effective.
3. But they (not to improve) the brakes themselves.
4. Recently a clutch-type brake of extreming simplicity (to create).
5. Most brakes (to cool) by air, like an air-cooled engine.

9. Переведите предложения на английский язык:

1.

- Когда тебе починили машину?
- Last month. The engine is in good condition now. It was well greased.
- Хорошо. Мне тоже надо чинить машину. Ослабли тормоза (The brakes are slack). Аккумулятор разрядился. (The battery has run down).
- It can be easily done.
- Я рад это слышать.

2.

- Какую машину ты хочешь купить?
- I want a second-hand car. Could you help me?
- С большим удовольствием.
- I hear there are good cars on sale 42nd Street.
- Я знаю этот магазин. Давай поедem туда.
- Good idea. If I choose a car there, I won't have to bother any more.
- Совершенно верно.

10. Дополните предложения, используя подходящие варианты предложенных слов:

1. It is called so because the fuel (the mixture) is burned...
 - a) directly inside the engine
 - b) outside the engine
2. The inlet stroke is called so because during moving down the piston...
 - a) the inlet valves opens to intake a charge of fuel into the cylinder
 - b) the inlet valves is closed and the mixture is compressed
3. The compression stroke is a stroke...
 - a) when the inlet valve opens to intake a charge of fuel into

the cylinder

b) when the inlet valve is closed and the mixture is compressed

4. On power stroke... .

a) the spark plugs ignite the mixture, both valves are closed during its combustion

b) the exhaust valve is opened and the residual gas flows through the exhaust valve into the atmosphere

11. Переведите предложения на русский язык:

1. We know the clutch to consist of tow plants: the driven plate and the pressure plate.

2. The driven plate is known to be situated between the flywheel and the pressure plant.

3. The clutch used for engagement the engine and the gearbox is incorporated within the flywheel housing.

4. To guide the car it is necessary to have some means of turning the car, the steering wheel being linked to the front wheels for this purpose.