



ДОНСКОЙ ГОСУДАРСТВЕННЫЙ ТЕХНИЧЕСКИЙ УНИВЕРСИТЕТ
УПРАВЛЕНИЕ ЦИФРОВЫХ ОБРАЗОВАТЕЛЬНЫХ ТЕХНОЛОГИЙ

Кафедра «Лингвистика и иностранные языки»

**Методические указания и
контрольные задания**
по дисциплине

**«Иностранный язык в
профессиональной сфере»
(английский язык)**

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Аннотация

Практикум предназначен для студентов заочной формы обучения направления 23.03.02 «Наземные транспортно-технологические комплексы».

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ТРЕБОВАНИЯ К ИТОВОМУ КОНТРОЛЮ ПО ДИСЦИПЛИНЕ «ИНОСТРАННЫЙ ЯЗЫК В ПРОФЕССИОНАЛЬНОЙ СФЕРЕ»

II семестр – экзамен

1. Контрольная работа.
2. Чтение, изложение фрагмента текста на русском языке и обсуждение текста профессиональной направленности.
3. Беседа с преподавателем по одной из изученных тем.

I. Общие требования к выполнению контрольной работы

Контрольная работа предназначена для студентов заочной формы обучения направления 23.03.02 «Наземные транспортно-технологические комплексы».

Контрольное задание предлагается в четырех вариантах. Номер варианта определяется по последней цифре номера зачетной книжки студента:

- 1, 2, 3 – 1-й вариант;
- 4, 5, 6 – 2-й вариант;
- 7, 8 – 3-й вариант;
- 9, 0 – 4-й вариант.

Контрольная работа должна быть выполнена в отдельной тетради. На обложке тетради необходимо указать следующие данные: факультет, курс, номер группы, фамилию, имя и отчество, дату, номер контрольного задания и вариант.

Первую страницу необходимо оставить чистой для замечаний и рецензии преподавателя.

Все предлагаемые к выполнению задания (включая текст заданий на английском языке) переписываются на левой стороне разворота тетради, а выполняются на правой.

Контрольная работа должна быть написана четким почерком, для замечаний преподавателя следует оставить поля.

Контрольная работа, выполненная не полностью или не отвечающая вышеприведенным требованиям, не проверяется и не засчитывается.

Проверенная контрольная работа должна быть переработана студентом (та часть её, где содержатся ошибки и неточности

перевода или неправильное выполнение заданий) в соответствии с замечаниями и методическими указаниями преподавателя. В той же тетради следует выполнить «Работу над ошибками», представив её на защите контрольной работы.

Четыре варианта контрольной работы имеют одинаковую структуру. Все задания должны быть выполнены в письменной форме.

Темы по грамматике:

1. Инфинитив и его функции.
2. Инфинитивные обороты.
3. Герундий.
4. Герундиальные обороты.
5. Причастие (I и II).
6. Причастные обороты.

При выполнении грамматических заданий необходимо пользоваться словарями, грамматическими справочниками и различными пособиями. Есть много различных учебных пособий, которые могут помочь в изучении иностранного языка самостоятельно. Это различные самоучители, учебники. Существуют компьютерные интерактивные программы для занятий иностранным языком самостоятельно и пособия с тестовыми материалами для самоконтроля.

ВАРИАНТ 1

1. Прочитайте текст и переведите в письменной форме абзацы 2,3.

An Average Automobile

1) An average automobile is made of roughly 14000 parts, which can be divided into several structural and mechanical subsystems.

2) The most basic of these is the body of the automobile, which contains the passenger and storage space as well as the engine compartment. It is usually classified according to the number of doors and the type of roof it has (e.g., two-door hardtop) and is made of molded steel, which is painted and treated to retard corrosion. The body sits upon the chassis, a steel frame that also supports the engine, wheels, axle assemblies, transmission, steering mechanism, brakes, and sus-

pension members.

3) The internal-combustion gasoline engine, with reciprocating pistons and a four-stroke cycle, is the most widely used power plant. In the United States in the 1940s engines were developed in size and design from four cylinders to the more powerful configuration of eight cylinders in a "V" shape. Since the 1970s, however, the trend has been toward smaller, less powerful and more efficient engines. A transmission-comprised of shafts, gears, and a clutch-is installed between the engine and the driving wheels to allow the engine to be disconnected when the engine is started and idling and to make the most efficient use of the engine's power varying loads. Transmissions are of two types: those in which the gears are shifted manually by the driver and those where the gears are shifted automatically by such a device as a hydraulic torque converter.

4) To control it once it is in motion, a car is equipped with steering and braking systems. The steering system consists of a series of linkages and gears that transmit the movement of the steering wheel to the front wheels. One braking system employs two semicircular "shoes" at each wheel that when activated press outward against the inner surfaces of drums attached to each wheel. More recently disk brakes, in which a clamp squeezes a disk attached to the wheel, have been used.

5) Automobiles have complex electrical systems that consist of a storage battery, alternator (alternating-current generator), devices for starting the engine and for vehicle operation (e.g. headlights and windshield wipers), and such accessories as heaters and radios. The battery provides enough power to engage the starting motor and to activate the ignition system. Once the engine is started, the alternator continually recharges the battery and supplies power to the other electrical equipment.

2. Письменно ответьте на следующие вопросы, используя информацию из текста:

1. What does the chassis support?
2. What does transmission comprise?
3. What transmits the movement of the steering wheel to the front wheels?
4. What types of braking systems are there?
5. What does the battery provide power for?

3. Переведите предложения и определите функцию инфинитива в них, где это возможно (выполняет инфинитив функцию подлежащего, дополнения, определения, обстоятельства или является частью составного сказуемого).

1) The problem is to convert the latent power of the gas in the inlet pipe into the power which will be driving a car.

2) The operation of the steering system should not require great effort.

3) To control it once it is in motion, a car is equipped with steering and braking systems.

4) The force to be applied to the steering wheel depends on the load of the front wheels.

5) It is usually classified according to the number of doors and the type of roof it has and is made of molded steel, which is painted and treated to retard corrosion.

6) In some special cases it is required to assist the driver's effort by means of a pneumatic or hydraulic servo-steering unit.

7) The battery provides enough power to engage the starting motor and to activate the ignition system.

8) On modern engines, the starting devices are small secondary carburetors to be switched on and off.

9) Passenger car tires are also rated for their load carrying ability, the amount of weight a tire can safely carry.

10) Rebound clips are located at intermediate positions in the length of the spring to prevent any shifting of the leaves.

4. Заполните пропуск соответствующей формой причастия или герундия и переведите предложения на русский язык:

1) The hull is ... up of frames covered with plating.

a) having made; b) made; c) making

2) Gears control speed and power of the engine in different ... conditions.

a) driving; b) having driven; c) driven

3) Bulkheads are vertical steel walls ... across the ship and along.

a) having gone; b) gone; c) going

4) The upper shaft is the main or ... shaft, the lower shaft is the countershaft or lay shaft.

a) sliding; b) slid; c) having slid

5) The driveshaft carries the power to the axle which is ... to the wheels.

a) having connected; b) connecting; c) connected

6) It carries the clutch thrust plate ... the shaft to follow and the main drive gear, located inside the transmission housing and constantly in mesh with a gear on the countershaft.

a) causing; b) having caused; c) being caused

7) Openings ... access to holds are called hatches.

a) given; b) giving; c) being given

8) The main shaft is ... in the drive shaft and has longitudinal grooves carrying the individual gear clusters to be shifted in longitudinal direction by shifter forks.

a) having supported; b) supporting; c) supported

9) The differential is ... to the rear end of the driveshaft.

a) connected; b) connecting; c) having connected

10) In addition to these two shafts, the reverse idler gear shaft is laterally supported in the housing; it carries also the reverse idler gear for ... the direction of rotation when backing.

a) changed; b) changing; c) having changed

5. Соотнесите названия элементов автомобиля (1 – 10) с их русскими эквивалентами (а – j):

1. windscreen

a. выхлопная труба

2. clutch

b. распределительный кулачковый вал

3. exhaust pipe

c. рулевое колесо (руль)

4. steering wheel

d. капот

5. tyre

e. коленчатый вал

6. bonnet

f. рычаг переключения передач

7. brake

g. лобовое стекло

8. camshaft

h. тормозной механизм

9. crankshaft

i. покрывка

10. gear lever

j. муфта

6. Вставьте пропущенные слова, приведенные ниже, вместо пропусков:

consists, suspension, transmitting, vehicles, life, prevent, attached, absorber, steering, case, equipped.

The mechanism for 1_____ the rotary motion of the steering wheel to the steering-gear arm is arranged in the steering-gear 2_____. It is bolted to the frame; in case of a frameless construction, it is 3_____ to a member of the body. Many motor 4_____, especially passenger cars, are now 5_____ with the rack-and-pinion steering. It 6_____ of a straight-guided rack arranged at right angles to the driving direction, and a spur-gear pinion, attached to the end of the steering column, engaged with the rack. This type of 7_____ requires a minimum of joints; as a result, it features long service 8_____ and minimum steering slack. It is especially used in case of axleless front-wheel 9_____. A friction shock 10_____ is arranged behind the spur-gear pinion to 11_____ road shocks from being transmitted to the steering wheel.

7. Напишите резюме и сопроводительное письмо к нему на вакансию инженера сервисного центра.

ВАРИАНТ 2

1. Прочитайте текст и переведите в письменной форме абзацы 4,5.

The Internal Combustion Engine

1) The method of turning refined petrol into power is as follows: The petrol is stored in the tank, which is connected by a small diameter pipe to the carburetor —a device for turning it into gas and mixing it with air in the correct proportions. The carburetor is attached to the inlet pipe. The explosive petrol-air mixture is sucked into the engine's cylinder through the inlet pipe and, at the correct instant, is exploded by an electric spark inside the cylinder at the point of the sparking plug.

2) When all the work is extracted from the gas, the exhaust valve opens and the burnt gas escapes through the exhaust pipe into

the air. The problem is to convert the latent power of the gas in the inlet pipe into the power which will be driving a car.

3) Let us imagine the engine with the piston near the top of its stroke. The piston is descending and the gas is being sucked into the engine past the open inlet valve. This is the first phase of the cycle, and it is called the suction or induction stroke because the gas is being sucked into the cylinder.

4) When the piston reaches the bottom of the stroke, the inlet valve closes. Now the cylinder is filled with clean explosive gas and the piston begins to ascend to the top of the cylinder. This is the second or compression stroke, so called because the gas is being compressed. By the time the piston reaches the top of the stroke, the charge is fully compressed and a spark appears at the sparking-plug point, igniting the charge. The pressure of the gas within the cylinder immediately rises and the piston is pushed down with considerable force. It is the force which drives the car, and the third stroke is therefore called the "power" or "firing" stroke. One must remember that this is the only stroke during which the gas is doing any useful work. The momentum supplied to the flywheel by this stroke makes it possible for the other three strokes to occur.

5) As the piston descends, the gas pressure falls and when the piston is near the lower end of its stroke, there is little pressure left in the cylinder. When the piston is at the bottom of its stroke the exhaust valve begins to open and the burnt gas rushes past the open exhaust valve into the exhaust pipe. During its ascent the piston is pumping the exhaust gas out of the cylinder. This is the fourth and final stroke of the cycle, and it is known as the exhaust stroke because the burnt gas is being exhausted out of the cylinder. When the piston reaches the top of the stroke, the exhaust valve closes and the cycle of operations is completed.

2. Письменно ответьте на следующие вопросы, используя информацию из текста:

1. In what kind of engine is the fuel converted directly into power?
2. Where is the petrol stored in the internal combustion engine?
3. What is the tank connected to?
4. What is a carburetor?
5. Where is the petrol-air mixture exploded?

3. Переведите предложения и определите функцию инфинитива в них (выполняет инфинитив функцию подлежащего, дополнения, определения, обстоятельства или является частью составного сказуемого).

1) Emergency hand brake is also called a parking brake because you use it to stop a vehicle from rolling down a hill.

2) Most cars have shock absorbers to guarantee a smooth ride.

3) A water pump forces the mixture of water and chemicals to flow between the cylinders of the engine.

4) Unless the engine is cooled, the moving parts such as valves and pistons will expand enough to stick.

5) Without lubrication the metal would become too hot and the engine would be destroyed.

6) Most of heat has to be removed by a cooling system.

7) It carries the clutch thrust plate causing the shaft to follow and the main drive gear, located inside the transmission housing and constantly in mesh with a gear on the countershaft.

8) The other numbers are designed to give you an idea of the expected tread life of a tire, a tire's ability to grip the road, a tire's speed capability based upon tests under ideal conditions.

9) Many parts of the diesel engine are designed to be somewhat heavier and stronger to withstand the higher temperatures and pressures the engine generates.

10) Now the cylinder is filled with clean explosive gas and the piston begins to ascend to the top of the cylinder.

4. Заполните пропуск соответствующей формой причастия или герундия и переведите предложения на русский язык:

1) Since the length of the spring varies with the load, one of the spring eyes has to be suspended in ... condition by means of a shackle.

a) swinging, b) swung, c) having swung

2) The cylinder block contains the cylinders and carries the crankshaft, to which the connecting rods and pistons are attached.

a) being connected, b) connected, c) connecting

3) The spring is ... to the axle by U-bolts, and the centre bolt connecting the leaves secures the spring assembly against shifting on the axle

by its pin.

- a) attaching, b) attached, c) having attached
- 4) The numbers and letters stamped on the sidewall of a tire give a better understanding of your tire's ... use and capabilities.
a) having intended, b) intending, c) intended
- 5) The engines differ also in the fuel used, in the method of ... it into the cylinders, and in how the air-fuel mixture is ignited.
a) introducing, b) introduced, c) having introduced
- 6) Another type of leaf-spring suspension is the cantilever spring with the spring ... upside down.
a) incorporated, b) incorporating, c) having incorporated
- 7) Lighter motor vehicles are frequently ... with the quarter elliptic leaf spring with its thick end firmly connected to the frame.
a) equipping, b) equipped, c) having equipped
- 8) The source of the energy ... the electrical spark may be a storage battery or a high-tension magneto.
a) produced, b) being produced, c) producing
- 9) The most common method of classification is ... on the type of fuel used; that is, whether the engine burns gasoline or diesel fuel.
a) basing, b) having based, c) based
- 10) ... fuel inside a car's engine creates a lot of heat.
a) being burnt, b) burning, c) burnt

5. Соотнесите названия элементов автомобиля (1 – 10) с их русскими эквивалентами (а – j):

- | | |
|-------------------------------|-----------------------------------|
| 1. internal combustion engine | a. поршень |
| 2. combustion chamber | b. верхняя мертвая точка |
| 3. stroke | c. четырехтактный двигатель |
| 4. piston | d. впускной клапан |
| 5. top dead centre | e. такт |
| 6. bottom dead centre | f. двигатель внутреннего сгорания |
| 7. four-stroke cycle engine | g. нижняя мертвая точка |
| 8. exhaust valve | h. камера сгорания |
| 9. inlet valve | i. такт впрыска (топлива) |

10. intake stroke

j. выпускной клапан

6. Вставьте пропущенные слова, приведенные ниже, вместо пропусков:

Slipping, vehicles, brakes, tires, stop, road, ability, wheels, skidding, adhesion

Every motor vehicle is to be equipped with two independent 1____. Each brake must be able to 2____ the vehicle within the shortest distance. Above all, braking of a vehicle depends on the friction between 3____ and road surface. Brakes operate most efficiently when they are applied so that the 4____ do not quite lock but continue to turn without 5____ on the road. The force of the slipping friction between tires and 6____ is much smaller than the brake power. In addition, the wheel loses all of its road-holding 7____ and tends to 8____. In order to utilize the whole wheel load, i. e. the total ground 9____ of a vehicle for its braking, all 10____ are now equipped with all-wheel brakes.

7. Напишите резюме и сопроводительное письмо к нему на вакансию директора сервисного центра.

ВАРИАНТ 3

1. Прочитайте текст и переведите письменной форме абзацы 1, 4.

Clutch

1) The internal-combustion engine is not a self-starting type. It has to be started and only after its speed has been increased it develops a sufficient torque. For putting the vehicle in motion, all internal-combustion engines require some disengageable connection between engine and axle drive. This disengageable connection is designed as a friction clutch.

2) The disk clutches are built as multiple-disk and single-disk clutches. A difference is made between dry clutches and oil-bath clutches. The motorcar clutch is required to engage smoothly and it transmits the full engine torque without any slippage when completely engaged. Since the clutch is foot-operated, the force (pedal force) required for its disengagement should be as small as possible. Coupling is performed by friction. The friction surfaces of disks alternately

connected with the engine and the change-speed gear to be driven are forced together by spring pressure.

3) They have been replaced by the single-disk clutch after wear-resistant clutch linings with high friction values had been developed. In modern automotive engineering it is used almost exclusively.

4) Nearly the whole diameter of the flywheel is employed for its housing resulting in a maximum friction surface area. It has only one clutch disk **whose** hub rests in the spines of the gear shaft, and it is forced between the clutch pressure plate and the flywheel by the spring-loaded pressure plate. The elastic force is acting concentrically.

5) Six pressure springs are located at the circumference of the clutch in height of the clutch bolt. The springs are supported by a spring cage toward the outside and by the clutch pressure plate toward the inside, and they push the clutch disk against the flywheel.

6) Disengagement of the clutch is performed by the slip ring connected with the clutch pedal via the throttle lever; in some models, this slip ring corresponds to a thrust ball bearing. This slip ring made of hard graphite pushes against the pressure ring when the clutch is disengaged. The three clutch levers actuated by the pressure ring are lifting the clutch pressure plate from the clutch disk by the adjusting screw.

2. Письменно ответьте на следующие вопросы, используя информацию из текста:

- 1) What is the function of a clutch?
- 2) What purpose is a hydraulic clutch used for?
- 3) Why does the clutch disengagement have to be as small as possible?
- 4) How is coupling performed?
- 5) What is a carburetor?

3. Переведите предложения и определите функцию инфинитива в них (выполняет инфинитив функцию подлежащего, дополнения, определения, обстоятельства или является частью составного сказуемого).

- 1) Springs allow each wheel to move up and down on its own.
- 2) To keep the water in circulation about 5 gallons in all, a centrifugal pump, driven by the engine, aids the natural process of convection.
- 3) After you have driven a certain number of kilometres you

must change the oil and the oil filter.

4) Many parts of the diesel engine are designed to be somewhat heavier and stronger to withstand the higher temperatures and pressures the engine generates.

5) In the gasoline engine the heat compression is not enough to ignite the air-fuel mixture; therefore, spark plugs are necessary.

6) The heat of compression ignites the fuel injected into the cylinder and causes the fuel-air mixture to burn.

7) The engine must be a rigid structure in order to withstand the heavy loads which are applied to the crankshaft bearings and other internal parts.

8) Oil is important for an engine to work.

9) Fuel gases must be removed so that new fuel can be burned.

10) The momentum supplied to the flywheel by this stroke makes it possible for the other three strokes to occur.

4. Заполните пропуск соответствующей формой причастия или герундия и переведите предложения на русский язык:

1) The lubrication system keeps friction from wearing out ... parts.

- a) moved, b) moving, c) having moved

2) The frame of the motorcar supports all the ... units such as engine transmission and rear axle.

- a) having driven, b) having been driven, c) driving

3) The body is ... on the frame and tightly bolted.

- a) placed, b) having been placed, c) placing

4) In a frameless construction the body is ... so stiff that it replaces the frame.

- a) designing, b) having been designed, c) designed

5) Only a limousine or bus body can be ... for a chassis-less construction since only these bodies may be built sufficiently resistant to torsion due to their particular type of construction.

- a) used, b) being used, c) using

6) The generator, which is driven by the motor, supplies all the electric energy needed in addition to ... the battery.

- a) being recharged, b) recharging, c) recharged

7) When the motor is started and the generator begins to function, the ammeter shows a charge ... into the storage battery.

- a) going, b) having gone, c) having been gone

8) It is known that for a long time scientists were looking for ways of ... fuel directly into power.

- a) having converted, b) being converted, c) converting

9) They invented the internal combustion engine in which the fuel is ... directly into power within the engine's cylinder.

- a) having converted, b) converting, c) converted

10) The mixture ... of fuel vapour and air burned in the cylinder is produced in the carburetor.

- a) having been consisted, b) consisting, c) consisted

5. Найдите в правой колонке русские эквиваленты английских слов и словосочетаний.

- | | |
|-------------------------|--------------------------------------|
| 1. choke | a. пусковое устройство |
| 2. air intake | b. ускорительный насос |
| 3. needle valve | c. дроссельная заслонка |
| 4. accelerator pump | d. топливный фильтр |
| 5. airflow sensor | e. впуск воздуха |
| 6. ignition distributor | f. игольчатый клапан |
| 7. electric fuel pump | g. датчик расхода воздуха |
| 8. throttle | h. воздушная заслонка |
| 9. starting device | i. распределитель системы |
| зажигания | |
| 10. fuel filter | j. топливный насос с электроприводом |

6. Вставьте пропущенные слова, приведенные ниже, вместо пропусков:

engine, downward, process, pump, draws, hollow, motion, radiator, forced, complete, circulate.

To cool the engine the cylinder walls are made 1_____, so that water from the radiator can 2_____ through the space. Hot water from the top of the engine flows into the top of the radiator and

passes 3_____ through the air-cooled metal tubes. From the bottom of the radiator the water re-enters the engine near the bottom of the engine to 4_____ the circuit. To keep the water in circulation about 5 gallons in all, a centrifugal 5_____, driven by the engine, aids the natural 6_____ of convection.

The 7_____ is in front of the car. As the result, air is 8_____ past the tubes when the car is in 9_____ and the water is cooled. In addition a fan is placed between the 10_____ and the radiator. The fan 11_____ air through the radiator and drives it against the engine.

7. Напишите резюме и сопроводительное письмо к нему на вакансию директора сервисного центра.

ВАРИАНТ 4

1. Прочитайте текст и переведите в письменной форме абзацы 2, 3, 4.

Suspension System

1) For dampening the road shocks otherwise transmitted to frame and body as much as possible, springs have to be arranged between axles and frame. Spring suspension of motor vehicles is performed in various ways. The type of spring most frequently used is the leaf spring, designed either as a "semi elliptic leaf spring" or "one-quarter elliptic leaf spring." Leaf springs are composed of a number of flat spring leaves arranged one upon another. Depending on the load of the axles, springs of different strength for front and rear axle are used.

2) Since the length of the spring varies with the load, one of the spring eyes has to be suspended in swinging condition by means of a shackle. The spring is attached to the axle by U-bolts, and the centre bolt connecting the leaves secures the spring assembly against shifting on the axle by its pin. Rebound clips are located at intermediate positions in the length of the spring to prevent any shifting of the leaves.

3) Another type of leaf-spring suspension is the cantilever spring with the spring incorporated upside down. Lighter motor vehicles are frequently equipped with the quarter elliptic leaf spring with its thick end firmly connected to the frame. Reduction of the "unsprung weight" — comprising wheels, rims, tires, axles, steering and

driving components attached to the axle — has led to the application of the transverse leaf spring. Arranged either as a single spring or in pairs, the transverse leaf spring takes the function of the front axle. The rear-axle suspension of floating half-axles is likewise performed by a transverse leaf spring. In these cases, the transmission of the driving and braking thrust and torque cannot be performed by the spring but by special rods connecting axle and frame.

4) Spring suspension is performed by spring bolts supported in a bushing in the spring eye requiring always ample lubrication. Frequently, intermediate rubber bushings (silent blocks) are used. They require less servicing and have long service life.

5) In case of the cantilever spring the loaded end is placed on the rear axle. Generally, it rests on a spring roller riding on the deflecting spring leaf. For heavy lorries (trucks), one spring alone cannot be expected to meet all the requirements. A supplementary spring is arranged above the normal car spring.

6) A special type of rear-axle suspension is the torsion-bar spring. It is fixed at both ends and is loaded in torsion on springing. This type of suspension is very simple. Pneumatic cushioning is used in modern automotive engineering replacing the mechanical suspension by a compressed-air cushion.

7) Pneumatic cushioning is used in modern automotive engineering replacing the mechanical suspension by a compressed-air cushion.

2. Письменно ответьте на следующие вопросы, используя информацию из текста:

1. Why do springs have to be arranged between axles and a frame?

2. What type of springs is most frequently used and what are they composed of?

3. Do you know anything about another type of leaf-spring suspension?

4. What has led to the application of transverse leaf spring?

5. Can one spring alone meet all the requirements for heavy lorries?

3. Переведите предложения и определите функцию инфинитива в них (выполняет инфинитив функцию подлежащего, дополнения, определения, обстоятельства или является частью составного сказуемого).

1) Since it is essential to secure rapid and complete combustion in the cylinder of an internal combustion engine, the fuel and air mixture must be thoroughly mixed. 2) To cool the engine the cylinder walls are made hollow, so that water from the radiator can circulate through the space.

3) The fuel from the fuel nozzle is mixed with the air from the air jet to form a fuel-air mixture.

4) The first carburetor to come into use was the updraft type in which the air enters at the bottom and leaves at the top, so that the direction of its flow is generally upward.

5) The internal combustion engine has to be started and only after its speed has been increased it develops a sufficient torque.

6) Now the cylinder is filled with clean explosive gas and the piston begins to ascend to the top of the cylinder.

7) It is the purpose of the change-speed gear to adapt the movement of the car to the particular conditions.

8) The change-speed gear is meant to adapt the driving speed to the particular situations with the engine operating at uniform speed as much as possible and to permit to back up the car.

9) The main shaft is supported in the drive shaft and has longitudinal grooves carrying the individual gear clusters to be shifted in longitudinal direction by shifter forks.

10) The drive of a motorcar can be performed both by the front wheels or rear wheels.

4. Заполните пропуск соответствующей формой причастия или герундия и переведите предложения на русский язык:

1) The other numbers are ... to give you an idea of the expected tread life of a tire, a tire's ability to grip the road, a tire's speed capability based upon tests under ideal conditions.

a) designed, b) having designed, c) designing

2) Automobiles have complex electrical systems that consist of a storage battery, alternator (alternating-current generator), devices for ... the engine and for vehicle operation (e.g., headlights and windshield wipers), and such accessories as heaters and radios.

a) having started, b) started, c) starting

3) Passenger car tires are also rated for their load ... ability, the amount of weight a tire can safely carry.

a) being carried, b) carrying, c) carried

4) A special type of frameless construction can be used only for independent wheel suspension with front-wheel drive or rear-mounted engine since it has no ... universal shaft.

a) having oscillated, b) having been oscillated, c) oscillating

5) Nearly the whole diameter of the flywheel is employed for its housing ... in a maximum friction surface area.

a) resulting, b) being resulted, c) having been resulted

6) The heavy flywheel has inertia: that is, once it starts ... it tends to keep on spinning.

a) spun, b) spinning, c) having spun

7) With the starting device in operation and the throttle valve closed, the engine draws the additional "starting mixture" through a feed duct ... into the intake pipe behind the throttle valve.

a) discharging, b) discharged, c) having discharged

8) ... on or off is performed either by a rotary slide valve or starter valve operated by means of a cable.

a) Having switched, b) Switching, c) Switched

9) The mechanism for ... the rotary motion of the steering wheel to the steering-gear arm is arranged in the steering-gear case.

a) being transmitted, b) transmitted, c) transmitting

10) For dampening the road shocks otherwise transmitted to frame and body as much as possible, springs have to be arranged between axles and frame.

a) dampening, b) being dampened, c) dampened

5. Найдите в правой колонке русские эквиваленты английских слов и словосочетаний.

1. brake disk

a. вакуумный усилитель

2. shock absorber

b. задний мост

3. coil spring

c. маховик

4. vacuum booster

d. пневматическая амортизация

- | | |
|-------------------------|--------------------------------|
| 5. rear axle | e. рычаг ручного тормоза |
| 6. pneumatic cushioning | f. ведущий вал коробки передач |
| 7. parking brake lever | g. тормозной диск |
| 8. flywheel | h. цилиндрическая пружина |
| 9. gearbox input shaft | i. колесный тормозной цилиндр |
| 10. wheel cylinder | j. амортизатор |

6. Вставьте пропущенные слова, приведенные ниже, вместо пропусков:

compression, pushed, filled, piston, valve, ascend, stroke, a spark, cylinder, force, useful.

When the 1___reaches the bottom of the stroke, the inlet 2___closes. Now the cylinder is 3___ with clean explosive gas and the piston begins to 4___to the top of the cylinder. This is the second or 5___stroke, so called because the gas is being compressed. By the time the piston reaches the top of the stroke, the charge is fully compressed and 6___appears at the sparking-plug point, igniting the charge. The pressure of the gas within the 7___ immediately rises and the piston is 8___ down with considerable force. It is the 9 ___ which drives the car, and the third stroke is therefore called the "power" or "firing" stroke. One must remember that this is the only stroke during which the gas is doing any 10___work. The momentum supplied to the flywheel by this 11___makes it possible for the other three strokes to occur.

7. Напишите резюме и сопроводительное письмо к нему на вакансию главного инженера автотранспортного предприятия.

II. При работе с текстом нужно иметь в виду, что понимание текстового материала предполагает умение распознавать и переводить сложные грамматические конструкции на иностранном языке, типичные для иностранной специальной литературы и для иностранного языка. Обращать внимание на устойчивые выражения, фразеологические глаголы. Помните, что не все переводится дословно. Начинать работу над текстом следует с его просмотра в целом, т.к. общее представление о тематике и содержании текста поможет при переводе. Только после общего ознакомления с содержанием текста можно приступать к его переводу. Не следует пытаться переводить предложение «подряд»,

не дочитав его до конца.

При работе с лексикой, не надо пытаться заучивать ее в отрыве от текста. При первичном чтении текста параллельно с процессом чтения нужно акцентировать внимание на приведенной в учебном пособии новой лексике по мере ее употребления в тексте, так как логический смысл словосочетаний и самого предложения облегчает ее запоминание в тексте. Неоднократное чтение текста с опорой на приведенный в каждом уроке словарь, а также выписанные новые слова и словосочетания будут способствовать постепенному усвоению лексики, облегчат понимание специальных текстов, что явится стимулом для дальнейшего совершенствования английского языка.

В целях подготовки к сдаче экзамена по дисциплине «Иностранный язык в профессиональной сфере» прочитайте и переведите тексты по специальности, ответьте на вопросы к текстам:

ТЕХТ 1.

How cars work (part 1)

Cars are very complicated machines and all systems in them work together. They power a car, control and steer it and make it comfortable for people to drive in. The heart of every car is its engine. It produces the power that turns the wheels and electricity for lights and other systems.

Most automobiles are powered by an internal combustion engine. Fuel, usually gasoline or petrol, is burned with air to create gases that expand. A spark plug creates a spark that ignites the gas and makes it burn. This energy moves through cylinders in which pistons slide up and down. They are attached to rods that move a crankshaft.

Normal car engines have four to six cylinders but there are also models with eight and sixteen cylinders. The turning movement is passed through the drive train to the drive wheels.

The fuel system pumps petrol from the tank to the engine. Older cars used to have carburetors that mix fuel with air and send the gas to the engine. Some cars have a special fuel injection system that sprays petrol into the engine. Modern cars have turbochargers that suck in extra air and therefore create more power.

The engine and all parts that carry power to the wheels are called the drive train. It includes the transmission, drive shaft,

differential, the axles and the drive wheels that move the car. While most cars have drive wheels in the front, some have them in the back. Cars that need to drive over all kinds of ground have a four-wheel drive.

The transmission controls the speed and torque. When a car travels at a normal speed on a flat road it does not need so much torque to keep it moving, but when you want to start a car from a hill the engine must produce more power. Gears control speed and power of the engine in different driving conditions.

In cars with manual transmission you have to change gears by pressing down the clutch with your foot and moving a lever. Cars with automatic transmission change gears without control by the driver. Lower gears give the car more torque and speed. When the car moves faster the transmission shifts to higher gears.

The driveshaft carries the power to the axle which is connected to the wheels. It has several joints which make the axle and wheels moveable as the car drives on uneven and bumpy roads.

The differential is connected to the rear end of the driveshaft. It lets the wheels turn at different speeds because in curves the outer wheels must travel a greater distance than the inner ones.

1. What turns the wheels and produces electricity for cars?
2. What are pistons attached to?
3. What does fuel system do?
4. All cars have a special fuel injection system to spray petrol into the engine, don't they?
5. What is the differential used for?

TEXT 2.

How cars work (part 2)

The steering system controls the front wheels. Turning the steering wheel makes them point to the left or right. Most cars have power steering; a hydraulic system makes it easier for a driver to turn the wheels.

The brake system slows down or stops the car. Brakes operate on all four wheels. There are two basic types of brakes: drum or disc brakes. In both cases a friction pad is pressed against a drum or disc with the help of a hydraulic system.

All cars have emergency hand brakes which you use if the hydraulic system fails. It is also called a parking brake because you use it to stop a vehicle from rolling down a hill. Antilock braking sys-

tems (ABS) keep the wheels turning when you step on the brakes. This computer controlled system prevents skidding if you are on a slippery road.

The suspension system supports the weight of the car. It has wheels, axles, tires and springs. Most cars have shock absorbers to guarantee a smooth ride. Springs are between the axles of the wheels and the body of the car. They allow each wheel to move up and down on its own. The tires also help to make driving smoother. They are built so that they give the car grip on roads in all conditions.

When a car burns fuel gases are produced. They must be removed so that new fuel can be burned. The pistons in the engine's cylinders force gas out of the engine. It passes through a muffler into tail pipes. The muffler also keeps the car running quietly. For about thirty years cars have been equipped with a catalytic converter. It reduces pollution by converting harmful gases into carbon dioxide and water.

Burning fuel inside a car's engine creates a lot of heat. Most of it has to be removed by a cooling system. Liquid cooling systems have a mixture of water and chemicals. A water pump forces this mixture to flow between the cylinders of the engine. The hot water is then pumped through a radiator where the air carries away the heat.

Oil is important for an engine to work. It flows through the moving parts so that the metal does not rub against other metallic pieces. Without lubrication the metal would become too hot and the engine would be destroyed.

Oil is stored in an oil tank at the bottom of the engine. From there it is pumped around the engine. A filter removes dirt from the oil so that it won't do any damage to engine parts. After you have driven a certain number of kilometres you must change the oil and the oil filter.

1. What types of brakes are there?
2. How does ABS work?
3. What reduces pollution by converting harmful gases into CO₂ and water?
4. How does lubricating system work?
5. What removes dirt from oil?

TEXT 3.

Separating the main parts.

The engine must be a rigid structure in order to withstand heavy loads which are applied to the crankshaft bearings and other internal parts.

It is made of two basic parts that are bolted together: the upper is the cylinder head, the lower is the cylinder block, which contains the crankshaft assembly. Both the head and the block are usually made of cast iron, but aluminium is an alternative material for lightness and good heat dissipation.

The valves of practically all modern engines are incorporated in the cylinder head. These engines are known as overhead-valve engines (OHV).

In the cylinder head there is a combustion chamber, two valve ports and two valves, for each cylinder.

The engine draws in the petrol/air mixture through one set of valves (the inlets) and expels burnt gases through the other (the exhausts). On top of the cylinder head is the valve-operating gear.

The cylinder block is usually in one piece with the crankcase. It contains the cylinders and carries the crankshaft, to which are attached the connecting rods and pistons. It may also contain the camshaft by which the valves are opened and closed.

Sometimes the camshaft may be carried on the cylinder head, in which case the engine is known as an overhead-camshaft (OHC) unit.

Both the cylinder head and the block contain passages that are known as the water jackets through which water circulates and cools the engine.

The sump, which is the reservoir for the engine lubricating oil, is made of sheet steel, cast aluminium or magnesium, and is bolted to the bottom of the crankcase.

A cover, usually of similar material to the sump, is fitted over the valve gear in order to exclude dust and retain oil.

1. What is engine made of?
2. What is there in the cylinder head?
3. What are inlets and exhausts?
4. What makes valves open and close?
5. Where is reservoir for lubricating oil installed?

TEXT 4.

Classification of engines

Engines for automotive and construction equipment may be classified in several ways: type of fuel used, type of cooling employed, or valve and cylinder arrangement. They all operate on the internal combustion principle. The application of basic principles of construction to particular needs or systems of manufacture has caused certain designs to be recognized as conventional.

The most common method of classification is based on the type of fuel used; that is, whether the engine burns gasoline or diesel fuel.

Mechanically and in overall appearance, gasoline and diesel engines resemble one another. However, many parts of the diesel engine are designed to be somewhat heavier and stronger to withstand the higher temperatures and pressures the engine generates. The engines differ also in the fuel used, in the method of introducing it into the cylinders, and in how the air-fuel mixture is ignited. In the gasoline engine, we first mix air and fuel in the carburetor. After this mixture is compressed in the cylinders, it is ignited by an electrical spark from the spark plugs. The source of the energy producing the electrical spark may be a storage battery or a high-tension magneto.

The diesel engine has no carburetor. Air alone enters its cylinders, where it is compressed and reaches a high temperature because of compression. The heat of compression ignites the fuel injected into the cylinder and causes the fuel-air mixture to burn. The diesel engine needs no spark plugs; the very contact of the diesel fuel with the hot air in the cylinder causes ignition. In the gasoline engine the heat compression is not enough to ignite the air-fuel mixture; therefore, spark plugs are necessary.

1. How may engines be classified?
2. How do engines differ from each other?
3. What can generate a spark?
4. How does carburetor work?
5. What causes ignition in diesel engines?

III. Подготовить устные темы для ответа на экзамене

Выполнение различных заданий нацелено на формирование умений и навыков использования тематики текста для осуществления целого ряда речевых действий: ответы на вопросы к тек-

сту, выполнение подстановочных упражнений, передача содержания текста в форме монолога или диалога. При ответе на вопросы, пересказе текста не следует забывать о порядке слов в предложении: 1) подлежащее, 2) сказуемое, 3) дополнение, 4) обстоятельство.

УСТНЫЕ ТЕМЫ ДЛЯ БЕСЕДЫ НА ЭКЗАМЕНЕ:

1. Работа инженера. Виды инженерной деятельности.
2. Моя будущая профессия – инженер.
3. Известные ученые, внесшие вклад в развитие науки и техники.
4. Роль иностранного языка в профессиональной деятельности.
5. Как добиться успеха в своей профессиональной деятельности.
6. Структура промышленного предприятия.
7. Правила безопасности на рабочем месте.
8. Роль информационных технологий в сфере производства.