**Практическая работа по английскому языку для студентов 239 группы (1 семестр)**

***Read and translate the text:***

***Text 1***

***Effects of mechanization on American agriculture***

The dominant trend in American agriculture in the past years can be summarized in two words - increased productivity,

The increased productivity is a resist of technological revolution1. The principal components of this revolution in crop and livestock production have been greater use of fertilizers, improved crop varieties, better breeding and feeding practices, better skills in management, mechanization and au­tomation being the most important among them.

Mechanization and application of other scientific developments to farming have increased the output per farm worker. Hand labour required for farming has markedly decreased while the production per person has increased.

The increase in production is greater in crop farming than in livestock breeding because crop production has been mechanized to a greater extent2than in livestock production.

About 50 years ago 27 per cent of the total population of the country was engaged in agriculture, now the employment in this sector of the econ­omy is about 2.5%.

In 1955 labour made up 32 per cent of the cost of farming; by 1980 it only 3.1 per cent. The machinery cost in farming, on the other hand, has continued to increase.

The organization of agriculture in the years to come will use less land, lees labour, fewer but better managers and much more capital, machines and various types of technology. These trends have been in progress for decades and it is unlikely3 that there will be any change from this direction.

**Notes:**

technological revolution – научно- техническая революция

to … extent – в… степени it is unlikely - вряд ли, маловероятно

**Vocabulary:**

employment – занятость

manager – управляющий

population –население

skill – мастерство, умение

trend – тенденция

***1.*** ***Find and translate the sentences, which says:***

1.о факторах научно-технической революции;

2.о снижении ручного труда в сельском хозяйстве;

3.о более высокой продуктивности растениеводства;

4.об основных тенденциях развития сельского хозяйства в будущем.

***2. Answer the following questions:***

1. What is the trend in American agriculture?

2. What are the most im­portant components of the technological revolution?

3. What has increasedthe output per farm worker?

4. Why is the produce increase in crop pro­duction greater than inlivestock breeding?

5. What is the employment in agriculture now?

6. What will the trend of the development of agriculture be in future?

***Read and translate the text:***

***Text 2***

***Soviet tractors***

The tractor industry in our country is highly developed. Many different types of tractors are being produced for doing various agricultural practices on soils, including the K-701 wheeled tractor powered by a 300 horse power engine the T-150 crawler tractor, MTZ — 80 wheeled tractor and many others. These tractors are used with different mounted and trailed farm machines for plowing, cultivating, har­rowing, sowing and harvesting agricultural crops.

At present millions of tractors are working in the fields of the state and collective farms. With the modern Soviet tractors all the main field operations have been fully mechanized in our country.

**Vocabulary:**

wheeled tractor – колёсный трактор

engine – двигатель

crawler tractor – гусеничный трактор

***1. Answer the following questions:***

1) Is the tractor industry highly developed in our country?

2) For what used tractors?

3) What kinds of tractors do you know?

***2. Find English equivalents.***

полностью механизированы, 300 лошадиных сил, сельхоз. культуры, коллективные фермы, в настоящее время.

***3. Insert necessary word (industry, at present, used with)***

1. Tractors are \_\_\_\_\_\_\_\_\_\_different mounted and trailed farm machines.

2. The tractor \_\_\_\_\_\_\_\_in our country is highly developed.

3.***\_\_\_\_\_\_\_*** millions of tractors are working in the fields.

***Read and translate the text:***

***Text 3***

***Farm machines***

Every collective farm has various types of machines that plow the soil, plant the seeds, cultivate the plants, harvest the crops and transport the products harvested.

Soviet collective farmers use tractors (in terms of 15 horsepower units), lorries, different drills, planters and harvesters. At present nearly every branch of agronomy uses specialized harvesters. Thus, we find grain combine harvesters, corn pickers, cotton pickers, tea pickers, fruit pickers, tomato harvesters. For harvesting root and tuber crops there exist various diggers such as potato diggers, carrot diggers, sugar beet diggers, onion diggers, etc.

**Vocabulary:**

a lorry- грузовик

in terms – в пересчёте

the tubers – клубни

a digger – экскаватор

an onion – лук

***1. Answer the following questions:***

1*.*What kinds of farm machines do you know?

2. What belongs to the specialized harvesters?

3. Exist various diggers for harvesting root and tuber crops ?

***2. Complete the sentences:***

1.Every branch of agronomy uses \_\_\_\_\_\_\_\_\_\_\_\_.

2.There are various diggers such as\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

3.\_\_\_\_\_\_\_\_\_\_\_ has various types of machines.

4.\_\_\_\_\_\_\_\_\_\_\_\_\_\_ use tractors, lorries, different drills, planters and harvesters.

………………………………………………………………………………..

potato diggers, carrot diggers; every collective farm; specialized harvesters; collective farmers.

***3. Find English equivalents.***

Используются различные экскаваторы, транспортировка выращенной продукции, в настоящее время, отрасли агрономии, сбор урожая.

***4. Make singular from plural:***

Types, diggers, pickers, harvesters, seeds, plants, lorries, drill

***Read and translate the text:***

***Text 4***

***The Engine***

*The Engine***.**  The engine is the source of power that makes the wheels go around and the car move. It is usually referred to as an internal-combustion engine because gasoline is burned within its cylinders or combustion chambers. This burning, or combustion, takes place at such high speed as to be termed an "explosion». Most automobile engines have six or eight cylinders, although some four-, twelve-, and sixteen-cylinder engines are in use.

*Engine Operation***.**  The activities that take place in the engine cylinder can be divided into four stages, or strokes. "Stroke" refers to the piston movement. The upper limit of piston movement is called top dead center, or T. D. C. The lower limit of piston movement is called bottom dead centre or B. D. C. The piston completes a stroke each time it changes direction of motion. Where the entire cycle of events in the cylinder requires four strokes (two crankshaft revolutions), the engine is called a four-stroke-cycle engine. The four strokes are: intake, compression, power and exhaust.

*Intake*. On the intake stroke the intake valve is opened. The piston is moving down, and a mixture of air and vaporized gasoline is being drawn into the cylinder through the valve opening. The mixture of gasoline and air is delivered to the cylinder by the fuel system.

*Compression*. After the piston reaches B.D.C. it begins to move upward and at this instant the intake valve closes. The other valve is also closed so that the cylinder is sealed. The piston moves upward, compressing the mixture to as little as one sixth of its original volume or less. This creates a fairly high pressure within the cylinder.

*Power*. As the piston reaches T.D.C. or the upper limit of its travel, an electric spark is generated at the cylinder spark plug. The spark plug consists of two electrodes, which are electrically insulated from each other. At the proper instant the ignition system delivers a high-voltage surge of electricity to the spark plug. This causes an electric spark to jump across the gap between the spark plug electrodes.

*Exhaust*. As the piston reaches the lower limit of its travel again, the exhaust valve opens. The piston moves upward on the exhaust stroke, forcing the burned gases out of the cylinder through the exhaust-valve opening. At the instant that the piston once more reaches top dead center, the exhaust valve closes and the intake valve opens so that, when the piston begins to move downward on the intake stroke, a fresh charge of gasoline vapor and air can be drawn into the cylinder. Four strokes are continually repeated during the operation on the engine.

**Vocabulary:**

1. Engine - двигатель

2. internal combustion - внутреннее сгорание

3**.** engine operation – работа двигателя

4. cylinder - цилиндр

5. exhaust - выхлоп

6. valve - клапан

7. piston - поршень

8. fuel system - топливная система

9**.** power – рабочий ход

10. crankshaft - коленчатый вал

11. spark plug - свеча зажигания

12. top dead center - верхняя мертвая точка

13. bottom dead centre - нижняя мертвая точка

14. crank - кривошип

15. shaft - вал

16. stroke - такт

17. seal - герметичный

18. combustion chamber - камера сгорания

19**.** an electric spark – электрическая искра

20**.** gasoline vapor - пары бензина

21. direction of motion - направление движения

22. a four-stroke-cycle engine – четырехтактный двигатель

23. clutch - сцепление

 24. intake - впуск

 25. a high-voltage surge – волна высокого напряжения

***Read and translate the text:***

***Text 5***

***Steam Engine***

A steam engine is a machine using steam power to perform mechanical work through the agency of heat. In a steam engine, hot steam, usually supplied by a boiler, expands under pressure, and part of the heat energy is converted into work. The remainder of the heat may be allowed to escape, or, for maximum engine efficiency, the steam may be condensed in a separate apparatus, a condenser, at comparatively low temperature and pressure.

For high efficiency, the steam must fall through a wide temperature range as a consequence of its expansion within the engine. The most efficient performance - that is, the greatest output of work in relation to the heat supplied - is secured by using a low condenser temperature and a high boiler pressure.

The steam may be further heated by passing it through a super-heater on its way from the boiler to the engine. A common super-heater is a group of parallel pipes with their surfaces exposed to the hot gases in the boiler furnace. By means of super-heaters, the steam may be heated beyond the temperature at which it is produced by boiling water. In a reciprocating engine, the piston and cylinder type of steam engine, steam under pressure is admitted into the cylinder by a valve mechanism.

As the steam expands, it pushes the piston, which is usually connected to a crank on a flywheel to produce rotary motion. In the. double-acting engine, steam from the boiler is admitted alternately to each side of the piston. In a simple steam engine, expansion of the steam takes place in only one cylinder, whereas in the compound engine there are two or more cylinders of increasing size for greater expansion of the steam and higher efficiency; the first and smallest piston is operated by the initial high-pressure steam and the second by the lower-pressure steam exhausted from the first. hi the steam turbine, steam is discharged at high velocity through nozzles and then flows through a series of stationary and moving blades, causing a rotor to move at high speeds.

The turbine is the universal means used to generate large quantities of electric power with steam. The earliest steam engines were the scientific novelties of Hero of-Alexandria in the 1st century AD. In 1698 Thomas Savery patented a pump to raise water from mines by condensing steam. Watt developed a new engine that rotated a shaft. A steam carriage for roads was built in France by Nicholas-Joseph Cugnot in 1769. Richard Trevithick in England was the first to use a steam carriage on a railway; in 1803 he built a steam locomotive.

***Read and translate the text:***

***Text 6***

***Modern field machinery***

A wide range of tractors and implements in America are available from local farm machinery dealers. Most of the larger machines and equipment sold are manufactured in the USA, while many of the smaller tractors - particularly diesel ones - are imported from abroad, mostly from Western Europe. Garden tractors arc designed primarily for light estate duty and are not intended for continuous heavy services. It is important to manage machine properly.

This includes planning the use of machinery for timely and productive operations, selecting proper types and sizes, replacing worn-out machinery at the right time. Improvements in farm machinery are continually being made to increase their efficiency and to reduce manual labour. These changes are coming so rapidly that innovations may become common practice in a remarkably short time. Most manipulations involve several different crops with specific tillage, planning, pest control and harvesting requirements.

 Ideally, each crop should have its own set of specialized implements to produce maximum yields. More equipment in turn means higher overhead costs. Lack of adequate equipment can delay getting crops planted or harvested in time, reducing yields and product quality. Thus, the most crucial progress, now seen on many farms, is in combining of various operations and universal piant-species treatments in one machine.

For instance, this has been done in the combine for harvesting and threshing wheat and other grains, and in the grain drill that in one trip over the field does the work of preparing the seedbed, planting seed and applying fertilizers and herbicides. Among the advantages of farm mechanization we might mention first, that the production and income per person engaged in farming have been markedly increased, that farm tasks can be done more rapidly and with better quality when weather and soil conditions are the least favourable, and, then, modem machinery enables crops to be planted, cultivated and harvested in a considerably shorter time than in the past, and the same is largely true in case of livestock production operations.

Keeping farm machinery in top mechanical condition is one of the best ways to improve field working efficiency. Machines should be technically maintained properly, i.e. serviced regularly and adjusted correctly. Neglecting this can result in expensive repair procedures or cause complete overhauls.