Міністерство освіти і науки України
Київський коледж міського господарства
Таврійського національного університету імені В.І.Вернадського

АНГЛІЙСЬКА МОВА ЗА ПРОФЕСІЙНИМ СПРЯМУВАННЯМ

Методичний посібник для студентів спеціальності 5.06010105“Обслуговування електротехнічного обладнання та автоматичного устаткування будівель і споруд”/192 «Будівництво та цивільна інженерія».

Київ – 2017

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5.0601105 «Обслуговування електротехнічного обладнання та автоматичного устаткування будівель і споруд» / 192 «Будівництво та цивільна інженерія».

Розглянуто та схвалено на засіданні циклової комісії документознавчих дисциплін
Голова циклової комісії Галка Л.Ф.
Протокол № 4 від 10.11.2016
Рекомендовано для студентів денної та заочної форми навчання

Укладачі

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ЗМІСТ

Пояснювальна записка

Головна мета курсу «Англійська мова за професійним спрямуванням» - формування навичок практичного володіння англійською мовою в різних видах іншомовленнєвої діяльності в обсязі тематики, що обумовлена професійними потребами; розвиток іншомовних комунікативних умінь у сферах академічного та професійного спілкування в усній та письмовій формах.

Методичний посібник розрахований для студентів денної та заочної форм навчання, для аудиторної та самостійної роботи студентів.

Методичний посібник містить тематичні тексти, словник вживаних у текстах слів та вправи на закріплення граматичного матеріалу.

Запропонований граматичний матеріал є узагальненням для вдосконалення теоретичних та практичних знань, умінь та навичок з предмету.

Тексти з професійних тем охоплюють матеріал, необхідний для професійної підготовки в галузі майбутньої праці.

Підсумком навчальної програми з предмету є залік.

Transport and Municipal Services

Urban transport in Kyiv is diverse with buses, trams, a funicular, an underground (metro), taxis, and trolleybuses, as well as computer-train stops.

The Kyiv metro is quick, clean, efficient and safe, with three underground lines radiating out from the centre to remote districts. Trains come every minute in the rush hour and you don`t have to wait more than a few minutes even late at night.

Metro is also rather cheap. A single-use token allows a transfer from one line to another, or you can buy a monthly pass.

Both are available at any metro station.

Public transport in Kyiv is often crowded. Tickets are sold at any station. Stamp them during your ride in the stamping machines or your may be fined.

The metro uses plastic tokens, which you always buy at the ticket office as you enter metro station, but there may be a queue especially at the start of the month or during the rush hour. One token allows you to travel to any other station on the metro network.

There are a lot of taxi companies in Kyiv. You may also order a taxi via the internet. Taxis waiting in the street are considerably more expensive.

It is easier and cheaper to hail a private car in the street, as owners often act as taxi drivers.

Municipal services are very important for Kyivites : Fire-101, Police-102, Ambulance-103, Gas-104, Telephone Directory and assistance (pay) 109, Train schedule information-005, Ukraine International airlines - 1556.

Word list

Urban transport- міський транспорт

remote districts-віддалені райони

rush hour- година пік

a single-use token- одноразовий жетон

a monthly pass- проїзний на місяць

Public transport – громадський транспорт

Crowded- переповнений

Stamp- ставити штамп, печатку; штемпелювати, штампувати, ставити або вибивати

plastic token- пластиковий жетон

Kyivites- кияни

Telephone Directory and assistance- Телефонний довідник та допомога

Train schedule information- Інформація розкладу поїздів
Municipal- муніципальний, міський

Conversation questions

1) Do you often use public transport?
2) Which is your favourite kind of public transport?
3) Are you happy with the public transport system in your country?
4) How do you "call" a taxi in your country from the side of the road?
5) Is the public transportation in your city efficient?
6) Do you feel safe when you use public transportation?
8) How do you usually get to work or college in your country?
9) Is the public transportation system in your country good?
10) Are taxis expensive in your country?

Complete the dialogue

Fei: Jerry! You're here early. What a pleasant surprise! How did you get here so fast?
Jerry: I flew! I have just parked my airplane across the street...
Fei: No, seriously. You rarely arrive on time.
Jerry: Today I took the subway instead of the bus. It's really convenient .
Fei: Yes, the subway is very fast.
Jerry: As for me I like.....
Fei: I think.....
Jerry: .....?
Fei: It is very expencive for me but.....
Jerry: Have you got a car?
Fei: Yes, ...
Jerry:Public transport in Kyiv is often crowded.
Fei:What do you think about.....?
Jerry: Oh.....
Fei: It's really cheaper!
Jerry: Stamp them during your ride in the .....
Fei:.....
Jerry: .....
Fei:.....

History of electrical engineering

Electrical phenomena attracted the attention of European thinkers as early as the 17th century. The most noteworthy pioneers include Ludwig Wilhelm Gilbert and Georg Simon Ohm of Germany, Hans Christian Oersted of Denmark, André-Marie Ampère of France, Alessandro Volta of Italy, Joseph Henry of the United States, and Michael Faraday of England. Electrical engineering may be said to have emerged as a discipline in 1864 when the Scottish physicist James Clerk Maxwell summarized the basic laws of electricity in mathematical form and predicted that radiation of electromagnetic energy would occur in a form that later became known as radio waves. In 1887 the German physicist Heinrich Hertz experimentally demonstrated the existence of radio waves.

The first practical application of electricity was the telegraph, invented by Samuel F.B. Morse in 1837. The need for electrical engineers was not felt until some 40 years later, upon the invention of the telephone (1876) by Alexander Graham Bell and of the incandescent lamp (1878) by Thomas A. Edison. Electrical

Word list

Electrical phenomena- електричні явища
Noteworthy- визначний
Pioneer-першовідкривач
Electrical engineering- електротехніка
Summarize-узагальнювати
the basic laws- основні закони
predict-передбачати
radiation- випромінювання
occur-відбуватися
wave-хвиля
incandescent lamp-лампа розжарювання

Top 10 facts about electricity

1)Electricity travels at the speed of light, which is 186,000 miles per second.

2) Electricity can be created using water, wind, the sun, and even animal waste.

3) When lightning strikes, it flows

from the cloud to the ground, but the part we see is actually the charge going from the ground back up into the cloud.

4) Iceland is the country that uses the most electricity annually. Their consumption is about 23% more than the U.S.

5) The world's biggest light bulb is located in Edison, New Jersey. It's 14 feet tall, weighs eight tons, and sits on top of the Thomas Edison Memorial Tower.

6) Electricity is present in our bodies – our nerve cells use it to pass signals to our muscles.

7) The first power plant - owned by Thomas Edison - opened in New York City in 1882

8) Coal is the world's biggest source of energy for producing electricity.

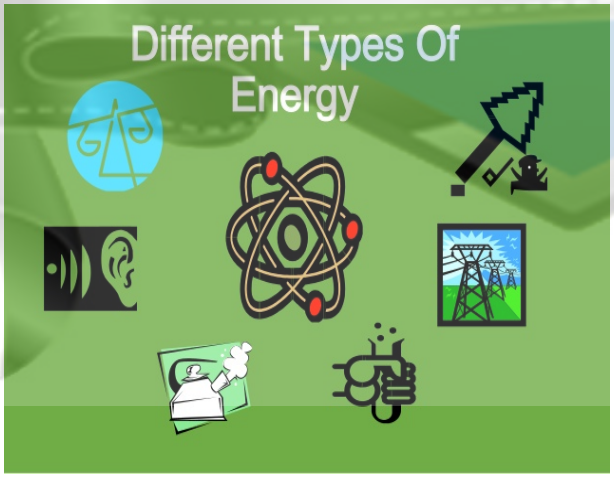
9) The first successful electric car was built in 1891 by American inventor William Morrison.

10) Ever wondered why birds that sit on power lines don't get electrocuted? If a bird sits on only one power line it's safe. If the bird touches any part of its body to another line, it creates a circuit, causing electrocution

Electric power generation

A generator is a device that converts mechanical energy into electrical energy. The process is based on the relationship between magnetism and electricity. In 1831, Faraday discovered that when a magnet is moved inside a coil of wire, electrical current flows in the wire.

A typical generator at a power plant uses an electromagnet—a magnet produced by electricity—not a traditional magnet. The generator has a series of insulated coils of wire that form a stationary cylinder. This cylinder surrounds a rotary electromagnetic shaft. When the electromagnetic shaft rotates, it induces a small electric voltage in each section of the wire coil. Each section of the wire becomes a small, separate electric conductor. The small voltage of individual sections are added together to form one large voltage. The load being connected to the windings terminals the current appears in the circuit. This current stipulates the electric power that is transmitted from the power company to the consumer.



An electric utility power station

uses a turbine, engine, water wheel or other similar machine to drive an electric generator or a device that converts mechanical or chemical energy to generate electricity. Steam turbines, internal-combustion engines, gas combustion turbines, water turbines, and wind turbines are the most common methods to generate electricity.

Word list

generator – генератор
relationship – взаємовідношення, залежність, співвідношення
magnetism – магнетизм, магнітні явища
electricity – електричні явища
discover – виявляти, відкривати
magnet – магніт
coil of wire – котушка (секція обмотки) з дроту
electrical current – електричний струм
flow – рух рідини, течія; текти
electromagnet – електромагніт
series of insulated coils – послідовність ізольованих котушок (секцій)
stationary – нерухомий, стаціонарний, сталий
cylinder – циліндр
electric voltage – електрична напруга
section of wire coil – секція обмотки з дроту
load –вантаж, навантаження; завантажувати
winding terminals – затискачі обмотки
circuit – (*електр.*) схема, (*електр.*) коло, контур, (електр.) мережа
stipulate – обумовлювати, ставити за умову
consumer – споживач
electric utility power station – електростанція енергосистеми
engine – двигун, мотор
water wheel – гідротурбіна

Different Forms of Energy

When John's alarm clock rings, it *gives out* sound energy. Sound is produced by the vibrations of an object. The louder the sound, the more energy it *carries*.

Food *stores* chemical energy. When John takes in the food, the chemical energy can be changed to other forms of energy for his activities. Fuels, such as coal and petrol, also *store* chemical energy.

Moving objects, such as buses or cable cars, *have* kinetic energy. The faster an object moves, the more kinetic energy it *has*. When two objects are moving at the same speed, the heavier one has more kinetic energy.

When John goes up a hill in a cable car, his potential energy increases. When an object is raised, it gains potential energy. The potential energy in an object increases when it is raised higher.

Some objects *have* potential energy when they are compressed, stretched or bent. For example a jack-in-the box can store potential energy in its compressed spring. The pole used by a pole vaulter *contains* potential energy when it is bent.

When John is having a barbecue, the charcoal burns and *gives out* heat energy. Heat energy can increase the temperature of an object. The Sun gives out heat energy. That is why we usually feel hot in the sun.

Many electrical appliances, such as computers and televisions, *use* electrical energy. They change electrical energy to other forms of energy. Electrical energy for most appliances comes from the power station. Some appliances, such as toy cars or small radios, *use* cells to supply electrical energy. The sun gives out light energy.

Which forms of energy are mentioned in the passage?

1._____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____

Note the verbs which are used in the passage for connecting an object to a form of energy:

A moving bicycle *has* kinetic energy.

A television *uses* electrical energy.

A radio *gives out* sound energy.

Complete the sentences below with an appropriate verb (has/uses/gives out):

1. A match _____ chemical energy.
2. A moving sportsman _____ kinetic energy.
3. An electric iron _____ heat energy.
4. A nuclear submarine _____ nuclear energy.
5. A computer _____ electrical energy.
6. A CD player _____ sound energy.
7. A lamp _____ light energy. 8. If you stretch an elastic band, it has potential energy.

Definition of electric circuit

An electric circuit is a collection of electrical devices and components connected together for the purpose of processing information or energy in electrical form. An electric circuit may be described mathematically by ordinary differential equations, which may be linear or nonlinear, and which may or may not be time varying. The practical effect of this restriction is that the physical dimensions are small compared to the wavelength of electrical signals. Many devices and systems use circuits in their design.

Electric Charge. In circuit theory, we postulate the existence of an indivisible unit of charge. There are two kinds of charge, called *negative* and *positive* charge. The negatively charged particle is called an *electron.* Positive charges may be atoms that have lost electrons, called *ions;* in crystalline structures, electron deficiencies, called *holes,* act as positively charged particles. In the International System of Units (SI), the unit of charge is the coulomb (C). The charge on one electron is

$1.60219\ 10^{19}$ C.

Electric Current. The flow or motion of charged particles is called an *electric current.* In SI units, one of the fundamental units is the ampere (A). The definition is such that a charge flow rate of 1 A is equivalent to 1 C/s. By convention, we speak of current as the flow of positive charges. When it is necessary to consider the flow of negative charges, we use appropriate modifiers. In an electric circuit, it is necessary to control the path of current flow so that the device operates as intended.

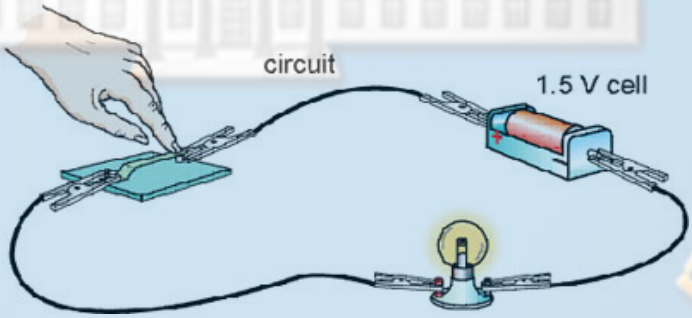
Voltage. The motion of charged particles either requires the expenditure of energy or is accompanied by the release of energy. The voltage, at a point in space, is defined as the work per unit charge (joules/coulomb) required to move a charge from a point of zero voltage to the point in question.

Magnetic and Dielectric Circuits. Magnetic and electric fields may be controlled by suitable arrangements of appropriate materials. Magnetic examples include the magnetic fields of motors, generators, and tape recorders. Dielectric examples include certain types of microphones. The fields themselves are called *fluxes* or *flux fields.* Magnetic fields are developed by magnetomotive forces. Electric fields are developed by voltages (also called *electromotive forces,* a term that is now less common). As with electric circuits, the dimensions for dielectric and magnetic circuits are small compared to a wavelength. In practice, the circuits are frequently nonlinear. It is also desired to confine the magnetic or electric flux to a prescribed path.

Sources of Voltage or Electric Potential Difference. A voltage is caused by the separation of opposite electric charges and represents the work per unit charge (joules/coulomb) required to move the charges from one point to the other. This separation may be forced by physical motion, or it may be initiated or complemented by thermal, chemical, magnetic, or radiation causes.

Word list

definition – визначення, чіткість, різкість
device – пристрій
to devise – винаходити
purpose – намір, мета, призначення
dimension – розмір, розмірність
compare – порівнювати
wavelength – довжина хвилі
design – розрахунок, проект
charge – заряд
circuit – електричне коло
electric current – електричний струм
flux, flux field – потік, поле потоку
induction – індукція
particle – частка
junction – з‘єднання
thermocouple – термопара
current density – щільність струму
semiconductor – напівпровідник

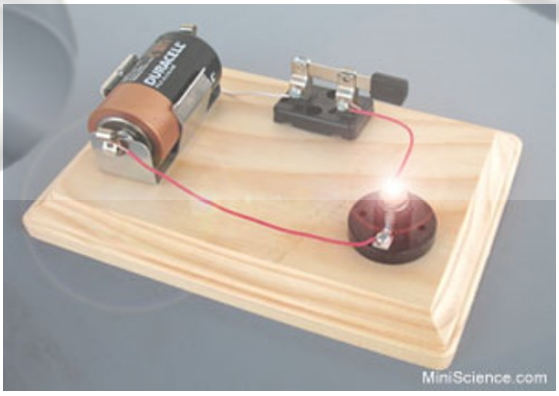


10 Interesting Circuits And Electricity Facts

Circuits and Electricity Facts 1: Dependency

It is no doubt electricity is important. Modern society has the biggest necessity among all. They have the need to use electricity for different appliances. There are many electronics which may consume electricity. House lightning is the basic one. The others are microwave, TV, computer, and more.

Circuits and Electricity Facts 2: measurement



Electric current has the measurement of ampere. Many people have already recognized about this. The volt is used as the measurement of potential

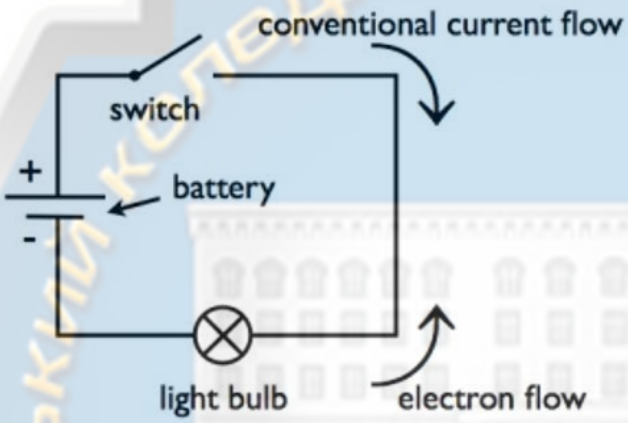
energy.http://www.myinterestingfacts.com/wp-content/uploads/2013/12/Circuit-and-Electricity.jpg

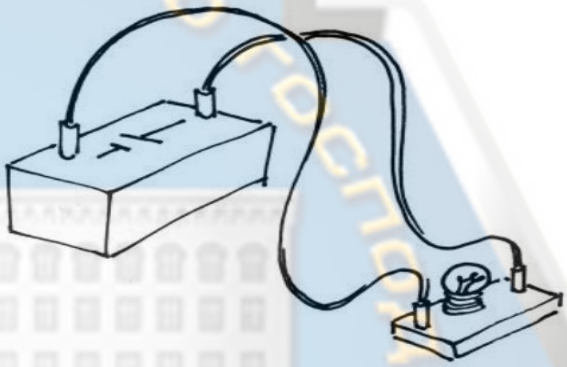
Circuits and Electricity Facts 3: Charges

Different or opposite charges may attract each other. It means the same charges may repel to the other. Positive charges may repel positive charges. Negative charges will resist the negative charges.

Circuits and Electricity Facts 4: electric charge

Static electricity occurs when electric charge builds on certain surface.





Therefore, sometimes you often experience a little shock from such condition.

Circuits and Electricity Facts 5: Electric Eel

There is an animal which can product electricity. It is the electric eel. This animal can produce significant electric shock of 500 volts. This can be used to hunt for food or self defense.

Circuits and Electricity Facts 6: circuit parts

Electric circuits have some parts. The circuits contain transformers, resistors, and switches. Any electrician or regular people need to understand this.

Circuits and Electricity Facts 7: Hydropower

There are different methods to produce electricity. Hydropower is one of them. The procedure is to use turbine powered by water stream. It will be attached to generator to produce electricity.

Circuits and Electricity Facts 8: coal

The fact, coal is the biggest source to produce electricity. The coal may heat up the boiled water. Later the steam will be used to spin turbines of generator.http://www.myinterestingfacts.com/wp-content/uploads/2013/12/Circuits-and-Electricity-facts.jpg

Circuits and Electricity Facts 9: Lightning Bolt

The natural electricity discharge is lightning. It has approximately the temperature such as 30,000º. The speed can reach 210,000 kph.

Circuits and Electricity Facts 10: fields work

Electricity has similar fields work towards gravity. The gravity only attracts while electricity can both attract and repulse.

Faraday's law of induction

According to Faraday's law, in any closed linear path in space, when the magnetic flux surrounded by the path varies with time, a voltage is induced around the path equal to the negative rate of change of the flux in webers per second.

The minus sign denotes that the direction of the induced voltage is such as to produce a current opposing the flux. If the flux is changing at a constant rate, the voltage is numerically equal to the increase or decrease in Weber’s in 1 s.

The closed linear path (or circuit) is the boundary of a surface and is a geometric line having length but infinitesimal thickness and not having branches in parallel. It can vary in shape or position.

If a loop of wire of negligible cross section occupies the same place and has the same motion as the path just considered, the voltage n will tend to drive a current of electricity around the wire, and this voltage can be measured by a galvanometer or voltmeter connected in the loop of wire. As with the path, the loop of wire is not to have branches in parallel; if it has, the problem of calculating the voltage shown by an instrument is more complicated and involves the resistances of the branches.

For accurate results, the simple Eq. (4.1) cannot be applied to metallic circuits having finite cross section. In some cases, the finite conductor can be considered as being divided into a large number of filaments connected in parallel, each having its own induced voltage and its own resistance. In other cases, such as the common ones of D.C. generators and motors and homopolar generators, where there are sliding and moving contacts between conductors of finite cross section, the induced voltage between neighboring points is to be calculated for various parts of the conductors. These can then be summed up or integrated. For methods

of computing the induced voltage between two points, see text on electromagnetic theory.

In cases such as a D.C. machine or a homopolar generator, there may at all times be a conducting path for current to flow, and this may be called a *circuit,* but it is not a closed linear circuit without parallel branches and of infinitesimal cross section, and therefore, Eq. (4.1) does not strictly apply to such a circuit in its entirety, even though, approximately correct numerical results can sometimes be obtained.

If such a practical circuit or current path is made to enclose more magnetic flux by a process of connecting one parallel branch conductor in place of another, then such a change in enclosed flux does not correspond to a voltage according to Eq. (4.1). Although it is possible in some cases to describe a loop of wire having infinitesimal cross section and sliding contacts for which Eq. (4.1) gives correct numerical results, the equation is not reliable, without qualification, for cases of finite cross section and sliding contacts. It is advisable not to use equations involving / *t* directly on complete circuits where there are sliding or moving contacts.

Where there are no sliding or moving contacts, if a coil has *N* turns of wire in series closely wound together so that the cross section of the coil is negligible compared with the area enclosed by the coil, or if the flux is so confined within an iron core that it is enclosed by all *N* turns alike, the voltage induced in the coil is

In such a case, *N* is called the *number of interlinkages of lines of magnetic flux with the coil,* or simply, the *flux linkage.*

For the preceding equations, the change in flux may be due to relative motion between the coil and the magnetomotive force (mmf, the agent producing the flux), as in a rotating-field generator; it may be due to change in the reluctance of the magnetic circuit, as in an inductor-type alternator or microphone, variations in the primary current producing the flux, as in a transformer, variations in the current in the secondary coil itself, or due to change in shape or orientation of the loop of coil.

Word list

path – шлях, контур, вітка
produce – представляти, виготовляти
intensity – інтенсивність
increase – зростати, збільшуватися
straight – натяг, деформація
wire – дріт, провід
branch – відгалуження, вітка
permeability – магнітна проникність
complicate – ускладнювати
involve – входить до складу
filament – нитка розжарювання, плавка вставка
homopolar – однополюсний
coil – виток, котушка

flux linkage – потокозчеплення complicate – ускладнювати

10 fun facts about Michael Faraday

Fact 1. Michael Faraday's father was a poverty-stricken blacksmith who worked in the village of Newington in Surrey, England and the family hardly ever had enough to eat.

Fact 2. Due to money constraints, Faraday had to leave school at the age of 13. Initially, he ran errands for different people to earn money. By the time he turned 14, he apprenticed with a book-binder in London.

Fact 3. Michael Faraday attended several of scientist Humphry Davy's lectures. After taking brilliant notes at one of the lectures, which Davy happened to read, he started assisting the great scientist in his work.

Fact 4. In 1821, he proved that magnetism that was created by an electric current could set a magnet in motion. This invention was a simplified version of the electric motors that are used today.

Fact 5. Michael Faraday largely worked as a chemist until 1830. It was in 1825 that he discovered the chemical, benzene.

Fact 6. In 1931 Faraday discovered that when a magnet is brought near an electric wire, it creates an electric current in the wire. This exact same discovery was made around the same time in the United Sates, by Joseph Henry.

Fact 7. Putting the theory of electric induction into practical use, he made the very first dynamo which was used in electricity generation. It was this discovery that opened the path to the age of electricity.

Fact 8. Michael Faraday chanced upon the first two laws of electrochemistry by accident. He was in the middle of an experiment to prove that that all kinds of electricity operate on the same concept.

Fact 9. His interest wasn't limited to electromagnetism and physics. The Bunsen burner was invented by Faraday. Terms such as cathode, ion, anode and electrode were coined by him.

Fact 10. Faraday refused to accept a knighthood and declined becoming the President of the Royal Society. He turned down the British Governments request to assist them with the manufacture of chemical weapons that they intended to use in war.

Who invented the elevator?

Although elevators may seem like a modern invention, devices used to transport people or goods vertically have been around for thousands of years. According to the writings of Vitruvius, the Greek mathematician Archimedes created a primitive elevator in 236 B.C. that was operated by hoisting ropes wound around a drum and rotated by manpower applied to a capstan. In ancient Rome, a subterranean complex of rooms, animal pens and tunnels stood beneath the Colosseum. At various intervals, elevators powered by hundreds of men using winches and counterweights brought gladiators and large animals up through vertical shafts into the arena for battle.

In 1743, Louis XV had what was referred to as a “flying chair” built to allow one of his mistresses to access her quarters on the third floor of the Palace of Versailles. Similarly, a “flying table” in his retreat château de Choisy allowed the king and his private guests to dine without intrusion from the servants. At the sound of a bell, a table would rise from the kitchen below into the dining room with an elaborate meal, including all of the necessary accoutrements. By the mid-19th century, elevators powered by steam or water were available for sale, but the ropes they relied upon could be worn out or destroyed and were not, therefore, generally trusted for passenger travel. However, in 1852, Elisha Graves Otis invented a safety break that revolutionized the vertical transport industry. In the event that an elevator’s hoisting rope broke, a spring would operate pawls on the car, forcing them into position with racks at the sides of the shaft and suspending the car in place. Installed in a five-story department store in New York City in 1857, Otis’ first commercial passenger elevator soon changed the world’s skyline, making skyscrapers a practical reality and turning the most valuable real estate on its head—from the first floor to the penthouse.

Word list

Although-хоча
hoisting ropes-підйомні канати
drum-барабан, циліндр
capstan-лебідка
subterranean-підземний
winch-лебідка

counterweight-противага
shaft-шахта
retreat-таємне місце
intrusion-вторгнення
accoutrements-спорядження
spring-пружина
pawl-собачка (тех.)

1. Watch the video about elevators and answer the questions (True or False) https://www.youtube.com/watch?v=CeOklEyUw0I

A) There is one chance in 12 million that something will go wrong with an elevator you're riding in

B) There are three motors in an elevator

C) The ropes are made of wood

History of the Otis Elevator Company

What do the Eiffel Tower, the Empire State Building, the Kremlin, and the Burj Khalifa have in common?

Elevators from the Otis Elevator Company. The company, which is celebrating its 160th anniversary today, has an interesting history: it was founded in 1853, the year Elisha Otis invented the elevator safety brake. Before Otis' invention, buildings rarely reached seven stories (elevators were considered just too dangerous to implement).

But it was Otis' elevator that would allow for the creation, and proliferation of, the skyscraper - an explosion that would for ever alter the 20th and 21st century skylines.

The first elevator shaft (built in 1853) actually preceded the first elevator by about four years; architect Peter Cooper, confident that a safe elevator would soon be invented, designed New York's Union Foundation building with a *cylindrical* shaft (thinking that the most efficient shape). Otis would later design a special elevator just for the building.

In 1854, Otis attempted to shatter the public's conception of the elevator's perilousness by performing a dramatic, death-defying demonstration of his safety break feature, cutting the hoisting platform rope at New York's World Fair in 1854.

It seems the stunt worked - in 1857 the first Otis passenger elevator was installed at 488 Broadway. Soon after, the Otis elevator appeared in the Eiffel Tower and the Empire State Building.

Today, in conjunction with the implementation of the steel frame, the Otis elevator is generally considered the invention that paved the way for the global proliferation of skyscrapers.

While the original invention of the safety break elevator precipitated the design of 20th century sky scrapers, today's modern buildings are demanding the elevator's transformation. For example, the Otis Elevator Company's latest invention, the Gen2 Switch™ elevator, is solar-power capable.

Word list

have in common-мати спільного
implement-виконувати
proliferation-розповсюдження
skyscraper-хмарочос
precede-передувати
efficient-ефективний
perilousness-безпечний
stunt-трюк
solar-power-сонячна енергія

Burj Dubai: The tallest tower features world's highest elevators

Dubai: Burj Dubai, the world’s tallest building, set to be inaugurated on January 4, 2010 to mark the fourth anniversary of the Accession Day of His Highness Sheikh Mohammad Bin Rashid Al Maktoum as the Ruler of Dubai, is setting new trends as well as world records in elevator and escalator installation and operation.

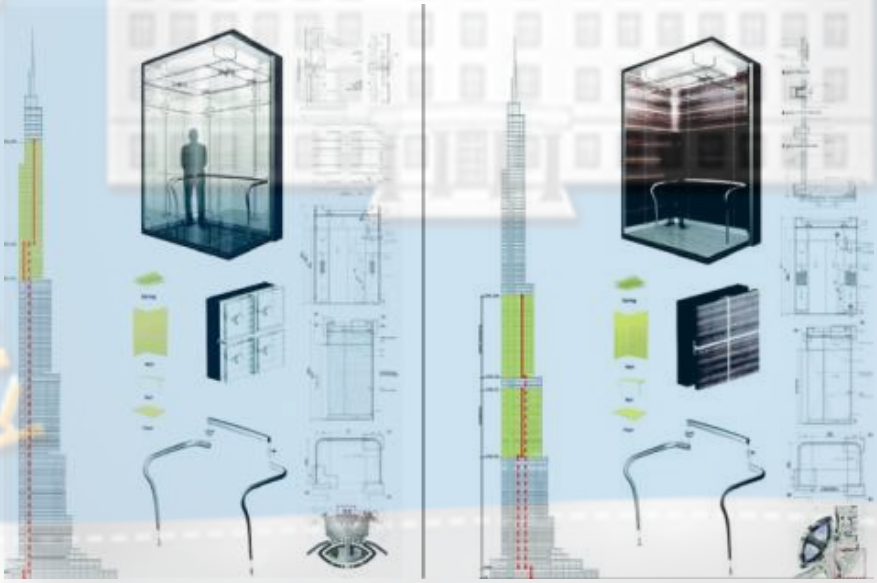
In what is described as the ‘intelligent elevator installation,’ Burj Dubai will have 57 elevators and eight escalators streamlining the travel needs of the residents

and visitors to the tower. These elevators also mark the highest installation in any building.

Each elevator zone serves different customers – from visitors to office workers, to hotel guests, to residents – maximising their efficiency as a result and saving time, by the use of a sky lobby system.

The sky lobby is an intermediate floor where residents, guests, office staff will change from an express elevator to a local elevator, which stops at every floor within a certain segment of the building. Burj Dubai's sky lobbies are located on level 43, 76 and 123 and will include a lounge area, a kiosk, amongst other amenities.

All elevators have been supplied and installed by global elevator leader Otis. No elevators are installed to travel all 160 floors of Burj Dubai. Instead, they are strategically grouped to align with the floor layout, offering passengers a direct express service to their destination by bypassing other floors.



Word list

Install-встановлювати
Align-ставити в ряд
Bypassing-обхідний шлях
Streamline-модернізувати, спрощувати
Efficiency-ефективність
Amenities-зручності

Discuss the questions.

1.How many elevators Burj Dubai will have?
2.What does “elevator zone” mean?
3.Which company has installed all the elevators?

Lift me higher: Building the world's tallest lift

By the end of this decade the records for the world's tallest building and highest lift are going to be broken.

But this is more meaningful than just another skyscraper, in another place, that most of us will never set eyes on. This could change architecture as we know it. There are some things most of us just don't think about. Stepping into a lift and wondering how many floors it could travel may seem too much of a challenge to be worthwhile. Lift-maker Kone has spent many years considering this problem though.

"While elevators have enabled the rise of city skylines, the technology had reached its height limit," explains its director of high rise technology, Santeri Suoranta.

"Elevators travelling distances of more than 500m [1,640 ft] were not feasible as the weight of the [steel] ropes themselves become so large that more ropes were needed to carry the ropes themselves."

But the company's quest for a solution has borne fruit. After nine years of rigorous testing, it has released Ultrarope - a material composed of carbon-fibre covered in a friction-proof coating. It weighs a seventh of the steel cables, so is more energy efficient, has twice the lifespan, and most notably, it makes lifts of up to 1km (0.6 miles) in height a lot easier to build.

Going up

Other lift manufacturers, like Toshiba, Mitsubishi, Otis, Schindler, et al, have been raising their game too. They've been battling on in the contest to create more eco-friendly, less expensive to run, easier to install, taller and/or faster lifts. But Kone's creation was chosen to be installed in what's destined to become the world's tallest building. When completed in 2018, The Kingdom Tower, in Jeddah, Saudi Arabia will stand a full kilometre in height, and will boast the world's tallest lift at 660m (2,165ft). It will also take the title as the world's fastest double-decker - with one passenger car attached on top of the other - travelling at 10m/sec (32ft/sec).

Longer waits

The Burj Khalifa, which is half a mile high, is currently the world's tallest building. Its lift reaches 163 floors, and covers a distance of 504 metres. As shown,

there's more to designing a lift than seeing how high it can go. "There's a science behind traffic design," explains David Cooper from the Institution of Engineering and Technology. "How many lifts there are in a group, their size and speed." There are two key measures that engineers must target, he explains:

- Average waiting time - the average amount of time a passenger needs to wait for a lift. This is typically half the interval between one lift departing and another arriving.
- Handling capacity - the maximum number of passengers that can be transported in a five minute period, expressed as a percentage of the building's population.

"The average waiting time in a nice office block would be around 25 seconds, with a handling capacity somewhere between 14-17% in a five minute window," Mr Cooper adds.

"So, as much as you can go all the way to the top with a new lightweight lift system, there are still going to be limitations because the number of lifts you need to go back and forth will increase."

Word list

Meaningful-значущий
Skyscraper-хмарочос
Set eyes on-звертати увагу
Worthwhile-той,що дає результат
Though-хоча
To enable-давати можливість
Skyline-горизонт
Feasible-реальний
Ropes-канати
Quest-пошук
borne (bear-bore-borne)-приносити
rigorous-суворий
friction-proof-антифрикційний
et al (et alii)-та інші
boast-вихвалятися, пишатися
key measures-основні заходи
target-ціль
average-в середньому
handling capacity-обсяг транспортування
limitation-обмеження
increase-збільшувати

Act the following situations in the elevator. You have only 30 seconds.

1.You meet your boss in the elevator.
2.You meet your neighbor in the elevator.
3. You meet a friend of yours, you haven’t seen for a long time.
4.You meet an old lady in the elevator.

Elevator Maintenance and Review

In any commercial building, vertical transportation represents an important financial investment, as much as hundreds of thousands of dollars for just a medium-size building. With an asset this valuable, it is good business to have a well-defined program to ensure correct elevator maintenance. While this article focuses on maintenance of elevators, much of the general information applies to escalators as well.

The components of an elevator system that require regular maintenance can be categorized by their location: in the machine room, the hoistway, or the car.

The elevator machine room is the heart of the elevator system. It contains the elevator hoisting machines, motor generator sets or solid-state power supply, and control equipment. The control equipment is an essential part of the total operating mechanism that accelerates, decelerates, and levels the car at each floor. Most of the routine maintenance takes place in the machine room. This includes routine servicing of motors, generators, switches, contacts, brakes, and controls.

The hoistway contains the guide rails on which the elevator car and counterweight run; the corridor doors, hangers, door locks, and operating mechanisms; switches and other operating and safety devices; and space for cables and other equipment. Equipment within hoistways that requires maintenance includes buffers, corridor door hangers and locks, switches, and safety devices. Most maintenance of these components must be performed from inside the hoistway and outside the elevator car. The hoistway pit houses the car and counterweights buffers, cable pulley and tensioning devices, and limit switches. The overhead of the hoistway may contain the overspeed governor mechanism and limit switches with space for the safety of personnel on the top of the elevator car.

The hoistway is a dangerous place to work. For safety, only qualified personnel should perform elevator maintenance and repair work.

With few exceptions, elevator cars are fire-resistant, well-ventilated structures. Maintenance requirements for elevator cars include servicing door operating equipment and ventilation equipment at the top of the car and safety equipment at the bottom. This work must also be performed from within the hoistway.

Flooring in elevator cars requires daily cleaning and service, and must be replaced more often than other flooring because of the amount of traffic. When replacing the floor, use nonslip material and nonflammable solutions in refinishing or cleaning the cab. Flooring, along with care of car interior finishes, is usually the responsibility of the property owner.

Word list

Asset-корисна якість
Valuable-цінний
Accelerate-пришвидшувати
Decelerate-зменшувати швидкість
Maintenance-експлуатація
Require-вимагати
Hoistway-підйомний відділ
Contain-містити
solid-state-твердий стан
guide rails-направляючі
hanger-кронштейн
buffer-амортизатор
pulley-блок
governor-регулятор
nonslip-неслизький
nonflammable-не займистий

Complete the sentences

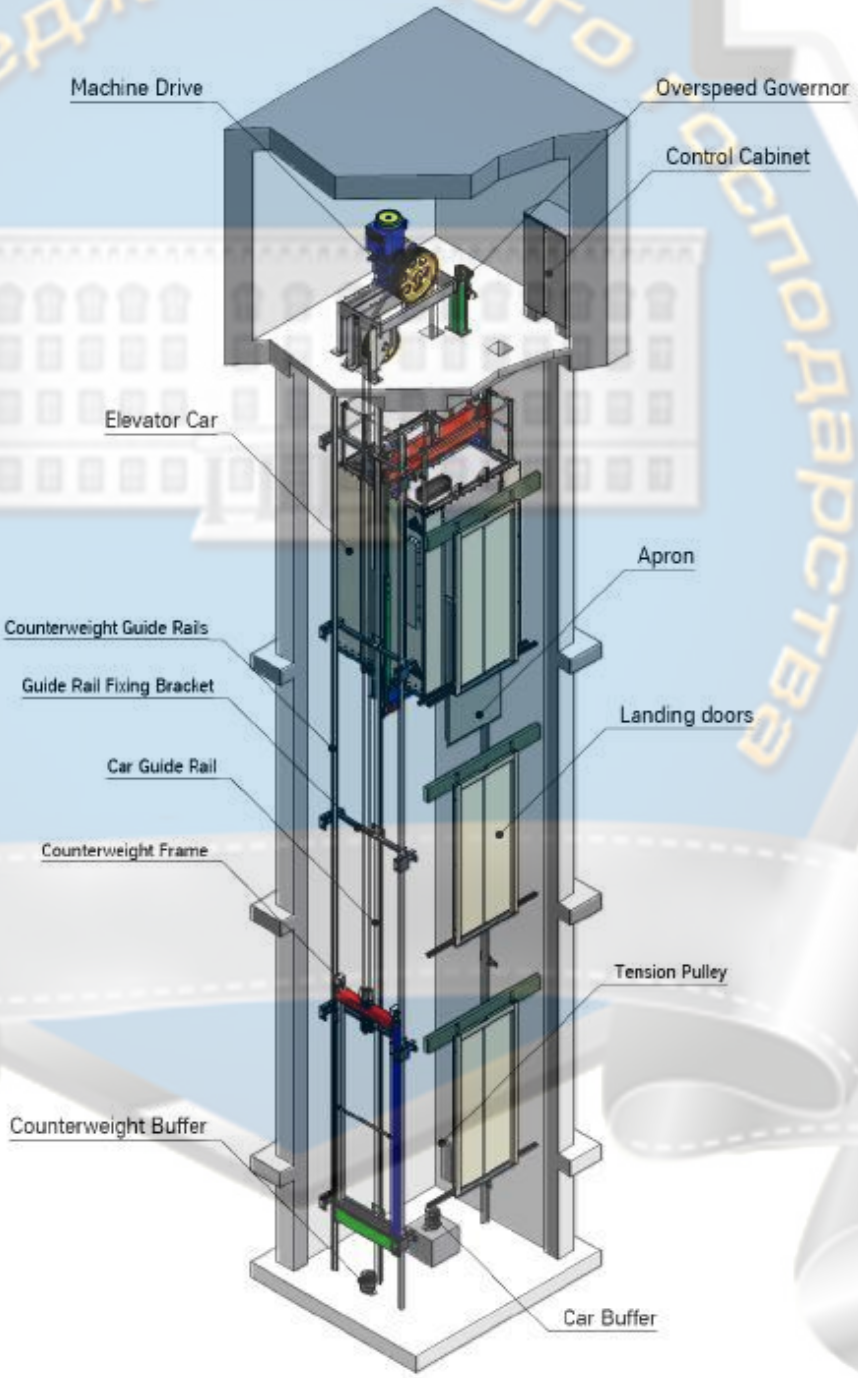
1. The components of an …….. that require regular …… can be categorized by their location: in ……., the hoistway, or the car.
2. The elevator machine room is the …… of the elevator system.
3. The control equipment is an …….. part of the total operating mechanism that …….., decelerates, and levels the ……. at each floor

4. The …… contains the guide rails on which the elevator car and counterweight run

5. The hoistway is a …… place to work

6. ……. in elevator cars requires daily cleaning and service, and must be replaced more often than other flooring because of the amount of traffic

Elevator parts



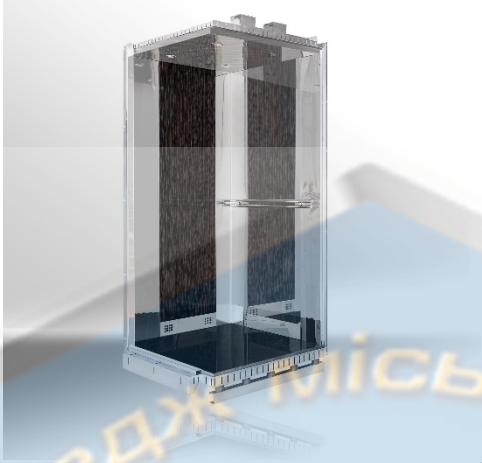
Word list

Machine drive-машинний механізм
Overspeed governor-регулятор перевищення швидкості
Control cabinet-шафа управління
Elevator car-кабіна ліфта
Apron-фартух
Counterweight guide rails-направляючі противаги
Guide rail fixing bracket
Car guide rail-кронштейн кріплення кабіни
Counterweight framекаркас противаги
Landing doors-двері
Counterweight buffer-амортизатор противаги
Tension pulley-натяжний ролик
Car buffer-амортизатор кабіни

Match the pictures with the names of details.

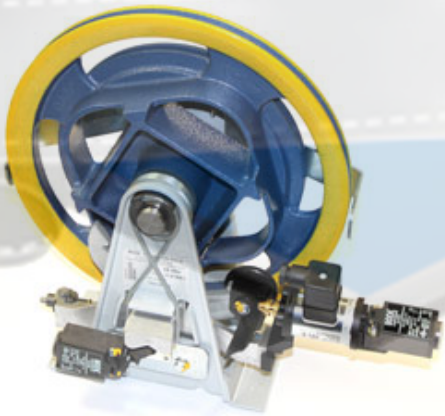
1) _____

2) _____

3) 

4) 

5) 

6) 

The rules of life safety at work

In our society, health protection is one of the key priorities and it plays a big part also in the world of work. Performance of work activities (either dependent or independent) must never lead to damage to health; health protection takes precedence over the efficiency of work performance.

No worker is required to put his or her life or health at stake at work. The only exceptions are members of security forces such as police officers or firefighters.

If you are an employee, the labour code contains a provision entitling you to refuse the performance of work which you are reasonably concerned may immediately and seriously threaten your life or health, or the life or health of other persons. Such a refusal may not be considered as a failure to meet the obligations of an employee.

If you are self-employed (a freelancer), the labour code does not apply to you; however, when performing independent work activities, you are no one's subordinate – and therefore no one can make you perform dangerous work. Of course, even a self-employed person has the right to protect their health at work. S/he is even obliged to do so. The new civil code generally stipulates that everyone is obliged to act so as to avoid unjustified injury of the freedom, life, health, or property of another person, if required by the circumstances of the case or practice of private life. Each work performance is no doubt a case in which this preventive obligation is imposed.

In employment, the person primarily responsible for ensuring the health and safety at work is the employer. First, the employer must comply with one of the basic principles of employment relations, which are "satisfactory and safe working conditions".

The employer must fulfill the following general obligations:

- To ensure the protection of the health and safety not only for their employees, but for "all natural persons, who, to his/her knowledge, are present at his/her workplaces"
- To provide the employees with such working conditions that they can properly carry out their job tasks without risking damage to health or property. If deficiencies are found, the employer is obliged to take measures to eliminate them
- To evaluate the health risks of work, constantly inform employees (even those employed by other employers) about health risks, take measures for emergencies such as fire or flood and ensure preventive health care for employees

- In case of health risks, provide staff with personal protective equipment (e.g. safety helmets, glasses or heated jackets, detergents), and – in a working environment, in which clothing or footwear is subject to extraordinary wear and tear or pollution or serves a protective function – also with work clothes and/or shoes. The provision of this equipment may not be compensated for financially.
- To either possess the professional competence to assess and prevent risks of potential danger to life or health, or employ the so-called security officer.

Training in HSW should not be replaced by simply putting a signature beneath instructions concerning this issue. In training as well as during all instructions, ask for these to be performed or presented in a language that you understand really well!

The employer has a number of other special duties to be applied to certain employees. It is especially such employees who perform more risky categories of work. Further, these duties concern women in relation to pregnancy and maternity and under-age workers, who are, besides that, prohibited from performing certain types of work.

The above-mentioned obligations concern employers and their duties to employees. As an employee, you have the right to demand that your employer meets all these obligations. However, you must also meet certain obligations; in particular:

- to comply with the measures taken by the employer and take part in creating a secure and healthy environment (e.g. the obligation to communicate to your employer any shortcomings and deficiencies found in the workplace and all accidents at work)
- to refrain from the consumption of alcohol and other addictive substances in the workplace, and when under the influence of such substances not to enter the workplace.

Word list

Protection-захист
Damage-шкода, пошкодження
Precedence-передування, перевага
Exception-виключення, виняток
Employee-працівник
Reasonably-розважливо, розсудливо
Immediately-негайно
Refusal-відмова
Freelancer- людина, яка працює не за наймом
Unjustified- невиправданий; неправомірний
Employer-роботодавець

Circumstances-обставини, умови, стан справ
no doubt-без сумніву
preventive- запобіжний захід, попереджувальний
ensuring- забезпечення, гарантування
comply-виконувати
fulfill- виконувати; здійснювати; відповідати, задовольняти
ensure- забезпечувати; гарантувати
deficiency- відсутність (чого-небудь); недостача, нестача, дефіцит, брак
eliminate- усувати, виключати
evaluate- оцінювати, встановлювати вартість; визначати кількість
helmet-шолом
detergent-очищувальний, миючий
possess- володіти, мати
duty-обов*язок
shortcoming- недолік, недосконалість; вада, слабке місце
refrain- утримуватися (від чогось - from)
consumption- споживання

Grammar

1.Fill in the present tense.

1. My parents often ____ westerns. (watch)

2. They ____ hungry. (be)

3. Mum ____ all the dirty clothes. (wash)

4. Peter ____ got a brother. (have)

5. Dad ____ a new plasma TV. (buy)

6. The boys ____ football. (play)

7. In summer it ____ hot. (be)

8. I ____ good at school. (be)

9. On Friday we always ____ our piano lesson. (have)

10. Mary _____ her homework. (do)

11. Richard _____ TV. (watch)

12. I _____ big cities. (like)

13. He _____ in the library. (study)

14. She always _____ to work at 7. (go)

15. Bill and Tom sometimes _____ to London. (drive)

2.Put the sentences into negation. Use short forms (doesn't, don't, isn't,...)

Example: I am hungry. - I am not hungry.

1. They wash the car. They _____ the car.

2. I get up early. I _____ early.

3. They walk to school. They _____ to school.

4. Jim eats an orange. Jim _____ an orange.

5. My sister listens to her new CD. My sister _____ to her new CD.

6. Ann cleans her shoes. Ann _____ her shoes.

7. Henry climbs the tree. Henry _____ the tree.

8. They are at the cinema. They _____ at the cinema.

9. We like pizza. We _____ pizza.

10. Gary and Peter go to the party. Gary and Peter _____ to the party.

11. My parents work in a restaurant. My parents _____ in a restaurant.

12. We like our uncle. We _____ our uncle.

13. She sings her favourite song. She _____ her favourite song.

14. Bill reads a book. Bill _____ a book.

15. Mary goes to the zoo. Mary _____ to the zoo.

3.Form the questions.

Example: I am hungry. - Are you hungry?

1. Peter goes to the party.
_____
2. His schoolbag is brown.
_____?
3. Mary can ski.
_____?
4. I meet my friends.
_____?
5. The teacher hands out the books.
_____?
6. Pat is a clever boy.
_____?
7. The monkey takes the banana.
_____?
8. Tony is hungry.
_____?
9. Tim goes to school.
_____?
10. They are at Sarah's party.
_____?
11. You like apples.
_____?
12. Winter begins in December.
_____?
13. They are at home.

_____?

14. Tom can play football.

_____?

15. His mother speaks Spanish.

_____?

4.Tell the story – fill in the past simple tense

On Friday, the children _____ (talk) about a day out together in the country. The next morning, they _____ (go) to the country with their two dogs and _____(play) together. Ben and Dave _____ (have) some kites. Some time later the dogs_____ (be) not there. So they _____ (call) them and _____ (look) for them in the forest. After half an hour the children _____ (find) them and_____ (take) them back. Charlie _____ (be) very happy to see them again. At lunch time Nick _____ (go) to the bikes and _____ (fetch) the basket with some meat sandwiches. Then they _____ (play) football. Nick and Dave _____ (win). In the evening they _____ (ride) home.

5.Fill in the correct simple past form.

arrange • bring • choose • decide • find • get • go • say • start

Last month Jenny, Nick and Ben _____ to do a project together.
They _____ Cornwall. First Jenny _____ to a travel agency and _____some brochures. Nick and Ben _____ some interesting books in the library. Then they _____ work. A week later they _____ all their material to school and _____ it on a poster. 'Your presentation is interesting', _____Miss Hunt.

6.Fill in the negation.

1. They were at the party yesterday. They _____ at the party yesterday.

2. Paula wrote back. Paula _____ back.

3. We arrived late. We _____ late.

4. He played football. He _____ football.

5. I forgot her birthday. I _____ her birthday.

6. He washed the car. He _____ the car.

7. She hurt her leg. She _____ her leg.

8. Sam was tired. Sam _____ tired.

9. I found the keys. I _____ the keys.

10. Martin visited his grandparents. Martin _____ his grandparents.

11. She tidied her room. She _____ her room.

12. He jumped high. He _____ high.

13. Steve left the hotel three days ago. Steve _____ the hotel.

14. She was in Italy last summer. She _____ in Italy last summer.

15. Mr Brown read my essay. Mr Brown _____ my essay.

7.Form the questions.

1. He brought his friend. _____?

2. She was sick. _____?

3. He ate his toast. _____?

4. They lived in Boston. _____?

5. We were on the beach. _____?

6. Peter stayed out late. _____?

7. Susan bought a new car. _____?

8. The ring was expensive. _____?

9. We got up early. _____?

10. He ate spaghetti. _____?

11. I met Helen. _____?

12. He slept well last night. _____?

13. They drove to Denver. _____?

14. They spoke to Alice. _____?

15. She was at home. _____?

8.Fill in the <u>will</u> - future of the words below.

<u>have – go – meet – visit – walk – have – buy – not be – have</u>

Tomorrow I _____ my friend George. We _____ to the movies and then we _____ our dinner at the new fast – food place. In the afternoon we _____ George's uncle and play table tennis in his garden. Then we _____ around in the shopping mall where we _____ a look at the shops. Maybe I _____ new jeans. We _____ back before 6 o'clock. I think we _____ a great day.

When I'm older, I will .....

buy - have - watch - buy - go - stay - go

When I'm older, I _____ out late.

When I'm older, I _____ TV as long as I like.

When I'm older, I _____ to parties.

When I'm older, I _____ two children.

When I'm older, I _____ a car.

When I'm older, I _____ to the cinema.

When I'm older, I _____ a lot of sweets.

When I'm older, I will not / won't....

do - write - go - wash - go - live - make

When I'm older, I _____ any homework.

When I'm older, I _____ my bed in the morning.

When I'm older, I _____ for a walk with my parents.

When I'm older, I _____ my father's car.

When I'm older, I _____ to school.

When I'm older, I _____ so much.

When I'm older, I _____ in my parent's house.

9.Present Continuous tense. Complete the sentences

1. Andy _____ his uncle. (call)
2. Bill and Carol _____ a magazine. (read)
3. The boys _____ on the door. (knock)
4. Where is mum? She _____ the flowers in the garden. (water)

5. They _____ to their teacher. (not listen)

6. I _____ my homework now. (do)

7. _____ she _____ dinner? No, she _____. (have / read)

8. We _____ now. (not play)

9. He _____ to his girlfriend at the moment. (talk)

10. Can we talk now? Yes, I _____ anything important. (not do)

11. Are you in the park? No, it _____. (rain)

12. What _____ the kids _____? They _____ their bikes. (do/ride)

13. Steven _____ a shower. (have)

14. Please be quieter. The babies _____. (sleep)

15. _____ you _____ the party? (enjoy)

10.Present Continuous tense. Complete the sentences

1. Look! Pauline _____ the flowers. (water)

2. Listen! The girls _____ a song. (sing)

3. She usually _____ home by bus. (come)

4. Jack _____ to his grandmother every day. (go)

5. Look! Sally and Joe _____ tennis. (play)

6. Nelly _____ a cup of tea every morning. (drink)

7. We can't play tennis. It _____ now. (rain)

8. Bill _____ his homework at the moment. (do)

9. Jane always _____ her homework in her room. (do)

10. The boys sometimes _____ to the park. (run)

11. My cat never _____ in my room. (sleep)

12. Listen! Phil _____ an English song. (sing)

13. No, I _____ to music on my mobile phone, I _____ a bath. (not listen / have)

14. Michael can't play football. He _____ guitar at the moment. (play)

15. We never _____ letters to America. (write)

11.Put the verbs in brackets into the present simple or the present continuous.

1. Would you like some beer? No, thank you I _____ alcohol. (not drink)

2. Why _____ Spanish? Because I want to go to Madrid next summer. (you learn)

3. Where _____ from? (you come)

4. What _____ for a living? (your father do)

5. My sister _____ to be a nurse. (train)

6. That's an interesting article. It _____ you a lot about British teenagers. (tell)

7. What _____ ? A thriller. (you read)

8. Where _____ a ticket, please? (I get)

9. I don't like Mr Smith. He _____ too much. (talk)

10. Susan, hurry up! What _____ in the bathroom all the time? (you do)

11. How _____ these days? (you get on)

12. What language _____ in Brazil? (they speak)

13. I think it _____ colder. We'd better take coats. (get)

14. Andy _____ like his brother, doesn't he? (look)

15. What's that noise? It _____ like a helicopter. (sound)

12. Put the verbs in brackets into the past continuous

1. The girls _____ (play) cards.

2. Greg _____ (look) for his wallet.

3. Mr Miller _____ (not wash) his car.

4. Susan _____ (do) her homework.

5. They _____ (not play) football yesterday afternoon.

6. I _____ (wait) for her in the park.

7. Carol and I _____ (have) dinner when he arrived.

8. We _____ (play) the guitar when she entered.

9. Tom _____ (not swim) in the pool.

10. The boys _____ (cycle) home from school.

11. She _____ (work) in her office.

12. I _____ (not learn) the new words.

13. Ann _____ (lie) on the beach.

14. We _____ (sit) on the bench for a long time.

15. He _____ (phone) his aunt.

13. **Put the verbs in brackets into the past continuous**

1. We _____ (write) the essay together.

2. Frank _____ (prepare) breakfast.

3. Mrs Summers _____ (not listen) to him.

4. Daniel _____ (do) the shopping.

5. They _____ (not read) the book.

6. I _____ (have) a shower.

7. He _____ (not watch) TV.

8. We _____ (swim) in the sea.

9. Tom and I _____ (vist) the castle.

10. The sun _____ (shine).

11. She _____ (clean) the windows.

12. I _____ (show) them most of the sights.

13. Ann _____ (not take) a lot of photos.

14. We _____ (play) voleyball on the beach.

15. They _____ (talk) to their neighbours.

14.Put the verbs in brackets into the past simple or past continuous

1. I _____ (look) out of the window and _____ (see) John.

2. I _____ (help) to peel the potatoes when Mary _____ (come) in.

3. The sun _____ (rise) when we _____ (reach) the hill.

4. He _____ (laugh) and _____ (clap) his hand.

5. While they _____ (sing), he _____ (play) the piano.

6. A heavy wind _____ (blow) when the helicopter _____ (land).

7. We _____ (go) to the church when the bell _____ (start) to ring.

8. While the police _____ (drive) to the house, the burglars _____ (put) the paintings into their bags.

9. Father _____ (smoke) his pipe while mother _____ (read) a book.

10. The baby _____ (start) to cry when she _____ (do) the washing up.

11. While he _____ (walk) through the park, he _____ (meet) Phil.

12. When they _____ (walk) through the wood, they _____ (see) the stolen car.

13. Although the pianist _____ (play) wonderfully, a guest _____ (fall) asleep.

14. She _____ (brush) her hair while he _____ (put) on his clothes.

15. When they _____ (walk) through the shopping centre, he _____ (promise) to buy her a ring.

15.Write down the sentences. Use present perfect.

Example: Snoopy / climb / onto his house. Snoopy has climbed onto his house.

1. Brian / play / football

_____.

2. Susan / read / her new book

_____.

3. I / find / some money in the street

_____.

4. Mr and Mrs Baker / have / an accident

_____.

5. Tom Davis / win / the tennis match

_____.

6. Alison Brown / lose / her keys

_____.

7. Mr Martin / make / breakfast for the boys

_____.

8. The girls / bring / some wood for the fire

_____.

9. The Snows / complete / cheap car insurance

_____.

10. Mrs Black / wash / the dishes

_____.

16.Complete the following sentences with the correct present perfect forms.

1. Mrs Snow _____ a fantastic cake. (make)

2. Debbie _____ a new bike. (buy)

3. I _____ my little dog yet. (not feed)

4. Sally and Jenny _____ a new CD player. (get)

5. Chris _____ wood for a raft. (not find)

6. The pupils _____ their homework. (not do)

7. Nick can't play football today. He _____ an accident with his bike. (have)

8. Liz _____ her homework yet. (not finish)

9. _____ Julia _____ to school today? (be)

10. What _____ you _____ for lunch today, Mum? (make)

11. Bill _____ his cage, but he _____ the dishes yet. (tidy up, not wash)

12. Sandra _____ a lot of things for her birthday party, but she _____ the cakes yet. (buy, not make)

17.Put the verbs in brackets into the past simple or the present perfect.

1. I _____ a great film yesterday. (see)

2. _____ a cheap laptop? (you ever buy)

3. Sue _____ the flu last winter. (have)

4. A few days ago we _____ to his uncle. (drive)

5. They _____ bingo Wednesday afternoon. (play)

6. He _____ the bus to get there. (already take)

7. Last week my rabbit _____ away. (run)

8. We _____ a lot last Sunday. (do)

9. _____ to India? (she ever be)

10. I _____ him last Monday. (meet)

11. She _____ yet. (not wake up)

12. I _____ her since last Thursday. (not meet)

13. Bob _____ well last night. (sleep)

14. I _____ a letter from her two days ago. (get)

15. They _____ in Germany. (already arrive)

18.Fill in past simple, past continuous or past perfect simple.

1. When they _____ (sleep), thieves _____ (break) in and _____ (steal) their jewelry.

2. After he _____ (repair) his bike, he _____ (drive) to his grandparents.

3. Before she _____ (have) dinner, she _____ (work) in the garden.

4. I _____ (see) him yesterday in front of the cinema.

5. When they _____ (listen) to music, they _____ (hear) a loud noise.

6. He _____ (not visit) me before he _____ (fly) to Greece.

7. He _____ (hear) a loud cry from outside and _____ (rush) out.

8. While she _____ (learn) for her test, her brother _____ (play) football with his friends.

9. We _____ (not play) chess last Sunday.

10. He _____ (go) shopping after he _____ (phone) me.

11. When we _____ (meet) Jane at the party, she _____ (wear) a red dress.

12. He _____ (not drive) fast when the accident _____ (happen).

13. The boys _____ (break) a window when they _____ (play) football in the garden.

14. Mary _____ (not work) yesterday. She _____ (be) ill.

15. After she _____ (help) me with the housework, she _____ (go) to meet her friends.

19.Fill in past simple or past perfect simple.

1. After they _____ (see) the Tower, they _____ (go) to Westminster Abbey.

2. He _____ (ask) me which animals I _____ (hunt) in Africa.

3. After Columbus _____ (discover) America, he _____ (return) to Spain.

4. Before they _____ (move) to Liverpool, they _____ (sell) everything.

5. After he _____ (work) very hard, he _____ (fall) ill.

6. She _____ (open) the box after she _____ (find) the key.

7. They _____ (go) to a restaurant after they _____ (sail).

8. Before they _____ (start) the party, they _____ (invite) some friends.

9. After she _____ (wash) the curtains, she _____ (clean) the windows.

10. They _____ (go) for a sightseeing tour after the bus _____ (arrive).

11. Before he _____ (mow) the lawn, he _____ (pick) some roses.

12. After he _____ (finish) school, he _____ (work) for a magazine.

13. They _____ (drink) a cup of tea after they _____ (finish) lunch.

14. He _____ (ask) me for her telephone number before he _____ (phone) her.

15. My sister _____ (eat) all the chocolate before my parents _____ (come) home.

20.Fill in the present perfect continuous.

1. It _____ (rain) for hours.

2. Mike _____ (collect) stamps since 1995.

3. Bob _____ (play) tennis since he was seven.

4. I _____ (wait) for the bus for 15 minutes.

5. How long ____ your brother _____ (play) guitar?

6. How long ____ he _____ (play) golf?

7. I _____ (work) for this company for seventeen years.

8. How long ____ it _____ (rain)?

9. Mary _____ (study) German for two years.

10. My grandparents _____ (live) in that house since 1962.

11. My mother _____ (cook) for 3 hours.

12. My sister _____ (drive) since 1972.

13. Peter _____ (live) in India since last month.

14. How long ____ you _____ (work) in the garden?

15. They _____ (lie) in the sun for hours.

21.Fill in the present perfect continuous

1. Why is he so tired? He _____ (play) football for two hours.

2. How long _____ (you work) in the garden?

3. Carol _____ (learn) Spanish for four years.

4. Frank and Bill _____ (travel) around Europe for about a month.

5. Samuel _____ (wear) that jeans since Tuesday.

6. How long _____ (you study) English?

7. We _____ (wait) here for three hours.

8. She _____ (watch) too much television lately.

9. Susan _____ (speak) on the phone for an hour.

10. How long _____ (he wait) for us?

11. Peter _____ (read) the books for weeks.

12. He _____ (watch) too many DVDs.

13. He is very tired. He _____ (work) hard all day.

14. I _____ (read) for 3 hours.

22.Write passive sentences (use the indications between brackets.)

1. the picture / draw (Simple Present)

_____

2. the door / close (Simple Past)

_____

3. the house / steal (Present Continuous)

_____

4. the bike / repair (Past Continuous)

_____

5. the room/ clean (Present Perfect)

_____

6. the homework / do (Past perfect)

_____

7. the window / break (Simple future)

_____

8. the essay / write (Should + Verb)

_____

23.Rewrite the following sentences as suggested:

1. The boy writes poems.

_____

2. The girl drove the blue car.

_____

3. They have collected enough money.

_____

4. They will open a new restaurant.

_____

5. The little boy can draw pictures.

_____

6. The guard watched the prisoner.

_____

7. They will not play soccer.

_____

8. They believe that he writes good poems.

_____

24.Rewrite these sentences starting with the words in bold:

1. Her friend gave her **a book**.

2. They offered him **a job.**

3. The man showed **us** the house.

4. My friend gave **me** a pen.

25.Write passive sentences in present simple.

1. the documents / print
2. the window / open
3. the shoes / buy
4. the car / wash
5. the litter / throw away
6. the letter / send
7. the book / read / not
8. the songs / sing / not
9. the food / eat / not
10. the shop / close / not

26.Write passive sentences in past simple.

1. the test / write
2. the table / set
3. the cat / feed
4. the lights / switch on
5. the house / build
6. dinner / serve
7. this computer / sell / not
8. the car / stop / not
9. the tables / clean / not
10. the children / pick up / not

27.Complete the sentences in reported speech. Note the change of pronouns in some sentences.

1. "Stop talking, Joe," the teacher said.

→ The teacher told Joe

2. "Be patient," she said to him.

→ She told him

3. "Go to your room," her father said to her.

→ Her father told her

4. "Hurry up," she said to us.

→ She told us

5. "Give me the key," he told her.

→ He asked her

6. "Play it again, Sam," she said.

→ She asked Sam

7. "Sit down, Caron" he said.

→ He asked Caron

8. "Fill in the form, Sir," the receptionist said.

→ The receptionist asked the guest

9. "Take off your shoes," she told us.

→ She told us

10. "Mind your own business," she told him.

→ She told him

28.Complete the sentences in reported speech. Note the change of pronouns in some sentences.

1. "Don't touch it," she said to him.

→ She told him

2. "Don't do that again," he said to me.

→ He told me

3. "Don't talk to me like that," he said.

→ He told her

4. "Don't repair the computer yourself," she warned him.

→ She warned him

5. "Don't let him in," she said.

→ She told me

6. "Don't go out without me," he begged her.

→ He begged her

7. "Don't forget your bag," she told me.

→ She told me

8. "Don't eat in the lab," the chemistry teacher said.

→ The chemistry teacher told his students

9. "Don't give yourself up," he advised her.

→ He advised her

10. "Don't hurt yourselves, boys," she said.

→ She told the boys

29.Complete the sentences in reported speech. Note the change of pronouns in some sentences.

1. She said, "Go upstairs."

→ She told me

2. "Close the door behind you," he told me.

→ He told me

3. "Don't be late," he advised us.

→ He advised us

4. "Stop staring at me," she said.

→ She told him

5. "Don't be angry with me," he said.

→ He asked her

6. "Leave me alone," she said.

→ She told me

7. "Don't drink and drive," she warned us.

→ She warned us

8. "John, stop smoking," she said.

→ She told John

9. "Don't worry about us," they said.

→ They told her

10. "Meet me at the cinema." he said.

→ He asked me

30.Complete the sentences in reported speech.

1. John said, "I love this town."

John said

2. "Do you like soccer ?" He asked me.

He asked me

3. "I can't drive a lorry," he said.

He said _____

4. "Be nice to your brother," he said.

He asked me _____

5. "Don't be nasty," he said.

He urged me _____

6. "Don't waste your money" she said.

She told the boys _____

7. "What have you decided to do?" she asked him.

She asked him _____

8. "I always wake up early," he said.

He said _____

9. "You should revise your lessons," he said.

He advised the students _____

10. "Where have you been?" he asked me.

He wanted to know _____

31. Conditionals (Type 1)

1. If I _____ ***(to study)***, I _____ ***(to pass)*** the exams.
2. If the sun _____ ***(to shine)***, we _____ ***(to walk)*** into town.
3. If he _____ ***(to have)*** a temperature, he _____ ***(to see)*** the doctor.
4. If my friends _____ ***(to come)***, I _____ ***(to be)*** very happy.
5. If she _____ ***(to earn)*** a lot of money, she _____ ***(to fly)*** to New York.
6. If we _____ ***(to travel)*** to London, we _____ ***(to visit)*** the museums.
7. If you _____ ***(to wear)*** sandals in the mountains, you _____ ***(to slip)*** on the rocks.
8. If Rita _____ ***(to forget)*** her homework, the teacher _____ ***(to give)*** her a low mark.
9. If they _____ ***(to go)*** to the disco, they _____ ***(to listen)*** to loud music.
10. If you _____ ***(to wait)*** a minute, I _____ ***(to ask)*** my parents.

1. If it _____ ***(to rain)***, the children _____ ***(not/to go)*** for a walk.
2. If she _____ ***(not/to read)*** the novel, she _____ ***(not/to pass)*** the literature test.
3. If I _____ ***(not/to argue)*** with my father, he _____ ***(to lend)*** me his motorbike.

4. If we _____ ***(to take)*** the bus, we _____ ***(not/to arrive)*** in time.

5. If Dick _____ ***(not/to buy)*** the book, his friends _____ ***(to be)*** angry with him.

6. If Tom _____ ***(not/to tidy up)*** his room, Victoria _____ ***(not/to help)***him with the muffins.

7. If the boys _____ ***(not/to play)*** football, the girls _____ ***(not/to come)*** to the football pitch.

8. If you _____ ***(to eat)*** too much junk food, you _____ ***(not/to lose)***weight.

9. If I _____ ***(not/to make)*** breakfast tomorrow morning, my girlfriend _____ ***(not/to love)*** me anymore.

10. If they _____ ***(not/to hurry)***, they _____ ***(not/to catch)*** the train.

32.Conditionals (Type 2)

1. If I _____ ***(to come)*** home earlier, I _____ ***(to prepare)*** dinner.

2. If we _____ ***(to live)*** in Rome, Francesco _____ ***(to visit)*** us.

3. If Tim and Tom _____ ***(to be)*** older, they _____ ***(to play)*** in our hockey team.

4. If he _____ ***(to be)*** my friend, I _____ ***(to invite)*** him to my birthday party.

5. If Susan _____ ***(to study)*** harder, she _____ ***(to be)*** better at school.

6. If they _____ ***(to have)*** enough money, they _____ ***(to buy)*** a new car.

7. If you _____ ***(to do)*** a paper round, you _____ ***(to earn)*** a little extra money.

8. If Michael _____ ***(to get)*** more pocket money, he _____ ***(to ask)*** Doris out for dinner.

9. If we _____ ***(to win)*** the lottery, we _____ ***(to fly)*** to San Francisco.

10. If I _____ ***(to meet)*** Brad Pitt, I _____ ***(to ask)*** for his autograph.

1. If Oliver _____ ***(to find)*** money, he _____ ***(not/to keep)*** it.

2. If they _____ ***(not/to wear)*** pullovers in the mountains, it _____ ***(to be)*** too cold during the night.

3. If Tony _____ ***(to know)*** her phone number, he _____ ***(not/to give)***it to Frank.

4. If we _____ ***(not/to visit)*** this museum, we _____ ***(not/to write)*** a good report.

5. If it _____ ***(not/to be)*** so late, we _____ ***(to play)*** a game of chess.

6. If Jeff _____ ***(not/to like)*** Jessica, he _____ ***(not/to buy)*** her an ice-cream.

7. If I _____ ***(to be)*** you, I _____ ***(not/to go)*** to Eric's party.

8. If you _____ ***(to drop)*** this bottle, it _____ ***(not/to break)***.

9. If she _____ ***(not/to bully)*** her classmates, she _____ ***(to have)***more friends.

10. If he _____ ***(not/to print)*** the document, I _____ ***(not/to correct)***it.

33.Conditionals (Type 3)

1. If the weather _____ ***(to be)*** nice, they _____ ***(to play)***football.

2. If we _____ ***(to go)*** to a good restaurant, we _____ ***(to have)*** a better dinner.

3. If John _____ ***(to learn)*** more words, he _____ ***(to write)*** a good report.

4. If the boys _____ ***(to take)*** the bus to school, they _____ ***(to arrive)*** on time.

5. If the teacher _____ ***(to explain)*** the homework, I _____ ***(to do)*** it.

6. If they _____ ***(to wait)*** for another 10 minutes, they _____ ***(to see)*** the pop star.

7. If the police _____ ***(to come)*** earlier, they _____ ***(to arrest)*** the burglar.

8. If you _____ ***(to buy)*** fresh green vegetable, your salad _____ ***(to taste)*** better.

9. If Alex _____ ***(to ask)*** me, I _____ ***(to email)*** the documents.

10. If he _____ ***(to speak)*** more slowy, Peggy _____ ***(to understand)*** him.

1. If you _____ ***(to check)*** the car, it _____ ***(not/to break)***down in the middle of the desert.

2. If it _____ ***(not/to rain)***, the children _____ ***(to play)***outside.

3. If my parents _____ ***(not/to be)*** so tired, they _____ ***(to watch)*** the film on TV.

4. If she _____ ***(to buy)*** a new hard disk, she _____ ***(not/to lose)*** all data.

5. If we _____ ***(to use)*** the town map, we _____ ***(not/to get)*** lost.

6. If Tom _____ ***(to eat)*** more salad, he _____ ***(not/to catch)*** a cold.

7. If the police _____ ***(not/to stop)*** me, I _____ ***(to reach)***you in time.

8. If his older brother _____ ***(not/to drive)*** so fast, he _____ ***(not/to crash)*** into the other car.

9. If Fred _____ ***(not/to cheat)*** at the test, his teacher _____ ***(not/to phone)*** his father.

10. If I _____ ***(not/to switch off)*** the radio, I _____ ***(to know)***about the second goal.

Vocabulary

A

Accelerate-пришвидшувати
accoutrements-спорядження
Align-ставити в ряд
Although-хоча
Amenities-зручності
Apron-фартух
Asset-корисна якість
average-в середньому

B

boast-вихвалятися, пишатися
borne (bear-bore-borne)-приносити
branch – відгалуження, вітка
buffer-амортизатор
Bypassing-обхідний шлях
capstan-лебідка

C

Car buffer-амортизатор кабіни
Car guide rail-кронштейн кріплення кабіни
charge – заряд
circuit – (*електр.*) схема, (*електр.*)
circuit – електричне коло
Circumstances-обставини, умови, стан справ
coil – виток, котушка
coil of wire – котушка (секція
compare – порівнювати
complicate – ускладнювати
complicate – ускладнювати
comply-виконувати
consumer – споживач
consumption- споживання
Contain-містити
Control cabinet-шафа управління
Counterweight buffer-амортизатор противаги
Counterweight framекаркас противаги

Counterweight guide rails-направляючі противаги
counterweight-противага
Crowded- переповнений
current density – щільність струму
cylinder – циліндр

D

Damage-шкода, пошкодження
Decelerate-зменшувати швидкість
deficiency- відсутність (чого-небудь) ; недостача, нестача, дефіцит, брак
definition – визначення, чіткість, різкість
design – розрахунок, проект
detergent-очищувальний, миючий
device – пристрій
dimension – розмір, розмірність
discover – виявляти, відкривати
drum-барабан, циліндр
duty-обов'язок

E

Efficiency-ефективність
efficient-ефективний
electric current – електричний струм
electric utility power station –
electric voltage – електрична напруга
electrical current – електричний
Electrical engineering- електротехніка
Electrical phenomena- електричні явища
electricity – електричні явища
electromagnet – електромагніт
Elevator car-кабіна ліфта
eliminate- усувати, виключати
Employee-працівник
Employer-роботодавець
engine – двигун, мотор
ensure- забезпечувати; гарантувати
ensuring- забезпечення, гарантування
et al (et alii)-та інші
evaluate- оцінювати, встановлювати вартість; визначати кількість
Exception-виключення, виняток

F

Feasible-реальний
filament – нитка розжарювання, плавка вставка
flow – рух рідини, течія; текти
flux linkage – потокозчеплення
flux, flux field – потік, поле потоку
Freelancer- людина, яка працює не за наймом
friction-proof-антифрикційний
fulfill- виконувати; здійснювати; відповідати, задовольняти

G

generator – генератор
governor-регулятор
Guide rail fixing bracket
guide rails-направляючі

H

handling capacity-обсяг транспортування
hanger-кронштейн
have in common-мати спільного
helmet-шолом
hoisting ropes-підйомні канати
Hoistway-підйомний відділ
homopolar – однополюсний

I

Immediately-негайно
implement-виконувати
incandescent lamp-лампа розжарювання
increase – зростати, збільшуватися
increase-збільшувати
induction – індукція
Install-встановлювати
intensity – інтенсивність
intrusion-вторгнення
involve – входить до складу

J

junction – з‘єднання

K

key measures-основні заходи
Kyivites- кияни

L

Landing doors-двері
limitation-обмеження
load –вантаж, навантаження;

M

Machine drive-машинний механізм
magnet – магніт
magnetism – магнетизм, магнітні
Maintenance-експлуатація
Meaningful-значущий
monthly pass- проїзний на місяць
Municipal- муніципальний, міський

N

no doubt-без сумніву
nonflammable-не займистий
nonslip-неслизький
Noteworthy- визначний

O

occur-відбуватися
Overspeed governor-регулятор перевищення швидкості

P

particle – частка
path – шлях, контур, вітка
pawl-собачка (тех.)
perilousness-безпечний
permeability – магнітна проникність
Pioneer-першовідкривач
plastic token- пластиковий жетон
possess- володіти, мати
Precedence-передування, перевага
precede-передувати
predict-передбачати
preventive- запобіжний захід, попереджувальний
produce – представляти, виготовляти
proliferation-розповсюдження
Protection-захист

Public transport – громадський транспорт
pulley-блок
purpose – намір, мета, призначення

Q

Quest-пошук

R

radiation- випромінювання
Reasonably-розважливо, розсудливо
refrain- утримуватися (від чогось - from)
Refusal-відмова
relationship – взаємовідношення,
remote districts-віддалені райони
Require-вимагати
retreat-таємне місце
rigorous-суворий
Ropes-канати
rush hour- година пік

S

section of wire coil – секція обмотки з дроту
semiconductor – напівпровідник
series of insulated coils –послідовність ізольованих котушок
Set eyes on-звертати увагу
shaft-шахта
shortcoming- недолік, недосконалість; вада, слабке місце
single-use token-одноразовий жетон
Skyline-горизонт
skyscraper-хмарочос
Skyscraper-хмарочос
solar-power-сонячна енергія
solid-state-твердий стан
spring-пружина
Stamp- ставити штамп, печатку; штемпелювати, штампувати, ставити або вибивати
stationary – нерухомий,
stipulate – обумовлювати, ставити за
straight – натяг, деформація
Streamline-модернізувати, спрощувати
stunt-трюк

subterranean-підземний
Summarize-узагальнювати

T

target-ціль
Telephone Directory and assistance- Телефонний довідник та допомога
Tension pulley-натяжний ролик
the basic laws- основні закони
thermocouple – термопара
Though-хоча
to devise – винаходити
To enable-давати можливість
Train schedule information- Інформація розкладу поїздів

U

Unjustified- невиправданий; неправомірний
Urban transport- міський транспорт

V

Valuable-цінний

W

water wheel – гідротурбіна
wavelength – довжина хвилі
wave-хвиля
winch-лебідка
winding terminals – затискачі
wire – дріт, провід
Worthwhile-той,що дає результат

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