

**O‘ZBEKISTON RESPUBLIKASI
OLIJ VA O‘RTA MAXSUS TA‘LIM VAZIRLIGI**

**O‘ZBEKISTON RESPUBLIKASI
QISHLOQ XO‘JALIGI VAZIRLIGI**

**ANDIJON QISHLOQ XO‘JALIGI VA
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**Oliy ta'lim muassasalari 5430300 “Qishloq xo'jaligini mexanizalashtirish”
ta'lim yo'nalishi talabalari uchun**

O'quv qo'llanma

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Ключи к упражнениям ЧАСТИ I

Англо-узбекский терминологический словарь-минимум

Qo'llanmaning asosiy maqsadi ushbu profil bo'yicha texnik adabiyotlarni ingliz tilida gapirish va o'qish ko'nikmalarini rivojlantirishdir. Qo'llanma matnlari tematik ravishda guruhlangan bo'lib, avtomobilning qurilmasi, uning asosiy tarkibiy qismlari va mexanizmlari to'g'risida tushuncha beradi.

Shuningdek, kitobga jadvallarda grammatik ma'lumotnoma, eng ko'p ishlatiladigan bog'lovchilar, predloglar va ravishlar ro'yxati, nostandart fe'llar va inglizcha-o'zbekcha terminologik minimum-lug'at kiritilgan.

Qo'llanmani Universitet mexanizatsiya mutaxassisliklari bo'yicha ta'lim olayotgan talabalari, ikkinchi oliy ma'lumot oladigan mutaxassislar, malaka oshirish kurslari talabalari va muhandislarga tavsiya etish mumkin. Shuningdek, kitobni o'rta kasb-hunar ta'limi muassasalarining talabalariga ham tavsiya etish mumkin.

So'z boshi

Ushbu o'quv qo'llanma oliy ta'lim muassasalarining mexanizatsiya mutaxassisliklari talabalari uchun tavsiya etiladi va 90 soatlik auditoriya mashg'ulotlariga mo'ljallangan. Qo'llanmaning maqsadi talabalar ixtisosligi bo'yicha og'zaki nutqning boshlang'ich ko'nikmalarini shakllantirish va kerakli ma'lumotni olish uchun ushbu mutaxassislik bo'yicha adabiyotlarni ingliz tilida o'qishdir.

Qo'llanma uchta qismdan, ma'lumotnoma va mexanizatsiya uchun minimal terminologik lug'atdan iborat.

I bo'lim (Part I) talabalar mutaxassisligi bo'yicha o'qish va boshlang'ich nutq qobiliyatlarini rivojlantirish uchun mo'ljallangan. Bunga 10 ta bo'lim (Unit) kiradi. Har bir bo'lim tarkibiga quyidagilar kiradi: bitta matn, bitta yoki ikkita dialog, shuningdek, matndan avval va matndan keyin bajariladigan mashqlar, ular mutaxassislik bo'yicha atamalarni minimumini o'z ichiga oladi va texnik matnlarni tushunishda qiyinchiliklarni bartaraf etishga qaratilgan. Barcha mashq va topshiriqlar kasbiy yo'nalishning leksik minimumini faol o'zlashtirish uchun tanish bo'lgan grammatik materiallarga asoslangan. Matndan keyingi mashqlar o'rganilgan

materialni mustahkamlashga qaratilgan va nazorat va o'rgatish ahamiyatga ega. Har bir bo'lim oxirida lug'at berilgan.

II bo'lim (Part II) talabalarning mustaqil ishlashi uchun mo'ljallangan bo'lib, og'zaki nutq ko'nikmalarini rivojlantirish va tarjima qilish uchun oraliq nazoratni vazifalarini o'z ichiga oladi.

III bo'lim (Part III) o'qish va matnni yaxlit idrok etish, etarli darajada tarjima qilish va izohlash qobiliyatini rivojlantirish, annotatsiyalar tuzish vazifalarini o'z ichiga olgan 15 qismdan (Sections) iborat. Ushbu bo'lim turli xil manbalardan olingan materiallarni qisqartirilgan, ammo moslashtirilmagan versiyada ilmiy-texnik maqolaning til uslubining o'ziga xos xususiyatlarini buzmasdan o'z ichiga oladi.

Matnlarning mavzusi quyidagilarni o'z ichiga oladi:

- Rossiyada va chet ellarda avtomobilsozlik tarixi;
- mahalliy va xorijiy avtomobillarning ayrim tizimlarining tavsifi;
- avtomobil mexanizmlari va tizimlaridagi nosozliklar, shuningdek ularni bartaraf etish yo'llari;
- avtomobillar va atrof-muhit;
- yo'l harakati xavfsizligi masalalari.

Dars vazifalarini bajarishning aniq ketma-ketligi talabalarga o'rganilayotgan mavzular terminologiyasini o'zlashtirishga, suhbat va muzokara o'tkazish ko'nikmalarini egallashga, izohlar tuzish va maqolalar mazmunini qisqacha gapirib berishga imkon beradi.

Ilovada quyidagilar mavjud: noto'g'ri fe'llarning ro'yxati; jadvallarda grammatik ma'lumotnoma; eng ko'p ishlatiladigan predloglar, bog'lovchilar, ravishlar, qo'shma predloglar ro'yxati; o'lchov birliklari, shuningdek, eng ko'p ishlatiladigan qisqartmalar.

Inglizcha-o'zbekcha terminologik lug'at-minimum atamaning aniq ma'nosini topishga imkon beradi, katta ixtisoslashgan lug'atlardan foydalanish zaruratini yo'q qiladi, matnni tushunishni osonlashtiradi va o'quv jarayonini tezlashtiradi. Kitob oxirida I bo'limdagi mashqlarning kalitlari taqdim etilgan.

O'qituvchilar uchun uslubiy tavsiyalar

I bo'limning har bir bo'limi bo'yicha ishni kirish va dars boshida berilgan dars matni bilan bevosita bog'liq leksik materialni mustahkamlash bilan boshlash tavsiya etiladi.

Texnik matn ustida ish olib borib, matndan keyingi barcha mashqlarni bajarib, dialog ustida ishlashni ta'minlash uchun, o'qituvchi mavzu bo'yicha leksik minimumni nazorat qilishi mumkin. Har bir bo'limning natijasi - o'quvchilarning boshlang'ich darajadagi suhbatini olib borish va mavzu bo'yicha qisqa hikoya yozish qobiliyatidir.

II bo'lim mustaqil ish uchun mo'ljallangan va o'qituvchi rahbarligida bajarilishi mumkin.

III bo'lim umumiy mazmuni qamrab olish, ma'lumot izlash va matnlarni etarli darajada tarjima qilish bilan o'qish uchun mo'ljallangan. Matnlar ustida ishlashda ularning yaxlit idrokiga e'tibor berish kerak.

Matnni o'qib bo'lgach, talaba gap nima haqida ketayotganligini aytishi kerak. Matnning mazmunini tushunish matndan oldin va keyin joylashtirilgan topshiriqlar, o'quvchilarning tayyorgarligi va matnning ayrim xatboshilari tarjimasining etarililigiga qarab o'zbek yoki ingliz tilidagi savollarga javoblar yordamida tekshiriladi. Matnlarni tarjima qilishda grammatik jadvallar va terminologik lug'atga murojaat qilish mumkin.

Barcha materiallar informatsion xarakterga ega, bu ingliz tilini professional tarzda o'rganish motivatsiyasini oshiradi.

PART I

Unit One

Text: Automobile Production

Dialogue A Dialogue B

1-mashq. So'z va so'z birikmalarini o'qib, o'zbek ekvivalentlarini eslab qoling.

technician — texnik

deal with manufacturing cars – avtomobillarni ishlab chiqarish bilan shug'ullanish

work out the technology of manufacturing processes — ishlab chiqarish jarayonlari texnologiyasini ishlab chiqish

put into mass production — ommaviy ishlab chiqarishga qo'yish

subject to tests — testlarga tegishli

dependable brakes – ishonchli tormoz

driving safety — avtomobil boshqarish xavfsizligi

long service life – uzoq xizmat ko'rsatish

rapid acceleration — yuqori tezlik (jadallik, o'tag'onlik)

ease of maintenance — texnik xizmat ko'rsatishni oddiyligi

meet up-to-date demands (requirements) — zamonaviy talablarga javob berish

be stable on the road — yo'lda mustahkam bo'lmoq

ignition system — o't oldirish tizimi

fuel consumption — yoqilg'i sarfi

car — yengil avtomobil

truck – yuk mashinasi

2-mashq. Terminlarga e'tibor berib, gaplarni o'zbek tiliga tarjima qiling.

1. After graduating from the college I shall become a technician.
2. I shall deal with manufacturing cars.

3. The production of the automobile comprises five phases, such as: designing, working out the technology of manufacturing processes, laboratory tests, road tests, mass production.
4. The automobile of today must have high efficiency, long service life, driving safety, ease of maintenance and be stable on the road.
5. The automobile must meet up-to-date demands, that is, it must have rapid acceleration, smooth-acting clutch, silent gearbox, dependable braking and steering systems, dependable ignition system.
6. Before the car is put into mass-production it must be subjected to laboratory and road tests.
7. Technicians should know the technology of manufacturing processes.

3-mashq. *Xalqaro so'zlarni o'qing va tarjima qiling.*

Specialist, automobile, industry, production, phase, technology, process, test, mass, fact, service, comfortable, ecological, method, type, corrosion, material, optimal, problem, mechanism, control, system.

4-mashq. *So'z yasovchi qo'shimchalarga e'tibor berib so'zlarni o'zbek tiliga tarjima qiling.*

Industry - industrial; to produce - production - producer;
to design - designer; technology - technological -technologically; to require - requirement; efficient - efficiency - efficiently; safe - safely - safety; to maintain - maintenance; comfort - comfortable; ecology - ecological; to resist - resistance - resistant; to operate - operation - operational; to accelerate - acceleration; to construct -construction.

TEXT

Automobile Production

I study at the college, at the automobile-construction department. When I graduate from the college I shall become a technician. All specialists in automobile

industry dealing with manufacturing automobiles (cars or trucks) must know that the production of the automobile comprises the following phases:

- designing;
- working out the technology of manufacturing processes;
- laboratory tests;
- road tests;
- mass manufacturing (production).

Why is it necessary to know all these facts? It is important to know them, as before the automobile is put into mass production it should be properly designed and the car must meet up-to-date requirements. What are these requirements?

The automobile must have high efficiency, long service life, driving safety, ease of handling and maintenance, pleasant appearance. Also it must be comfortable and ecological. In order to obtain these qualities the specialists should develop up-to-date methods of designing cars using new types of resistant to corrosion light materials. Also it is important to know computer sciences because computers offer quick and optimal solutions of the problems. Besides they are used for better operation of mechanisms in cars.

Before the car is put into mass production the units of the car are subjected to tests in the Works laboratory and then the car undergoes a rigid quality control in road tests. Why are these tests required? What qualities are required of the automobile? They are needed because the modern automobile must be rapid in acceleration, have smooth acting clutch, silent gearbox, dependable braking and steering systems, dependable ignition system, low fuel consumption and be stable on the road.

5-mashq. Matndan mos keladigan so'zlarni toping va yozing:

- a) avtomobil ishlab chiqarishga;
- b) avtomobil xarakteristikasiga o'zbek tilidagi ekvivalentlarini toping.

6-masq. Savollarga matndan javob toping.

1. What department do you study at?
2. What will you become after graduating from the college?
3. What should automobile specialists know?
4. What phases does the production of the automobile comprise?
5. What requirements must modern automobiles meet?
6. Why are automobile units and mechanisms subjected to laboratory and road tests?
7. What qualities are required of the automobile?
8. Why are computers used in cars?

7-mashq. Tushirib qoldirilgan predloglarni yozing va gaplarni o'zbek tiliga tarjima qiling.

1. After graduating ... the college I shall deal ... manufacturing cars.
2. The production ... the automobile comprises five phases.
3. Specialists ... automobile industry should develop up-to-date methods ... designing cars.
4. In producing automobiles new types ... resistant ... corrosion light materials should be used.
5. All cars undergo a rigid quality control ... tests.
6. The car is put ... mass production after laboratory and road tests.
7. Technicians must know the technology ... manufacturing processes ... cars.

8-mashq. Gaplarni mos keladigan yakunini tanlang.

1. An automobile specialist deals with
 - a. working out technological processes;
 - b. constructing and manufacturing cars;
 - c. producing new resistant to corrosion light materials.
2. The production of the automobile comprises
 - a. designing and mass production;
 - b. manufacturing and tests;

- c. designing and working out technological processes, laboratory and road tests and mass production.
3. The cars are subjected to tests in order....
- to work out new technological processes;
 - to meet up-to-date requirements;
 - to shorten the time between designing and manufacturing.
4. The qualities required of the automobile are
- high efficiency, long service life, driving safety and pleasant appearance;
 - smooth acting clutch, silent gearbox, dependable braking and steering systems;
 - new types of resistant to corrosion materials.
5. The car must have the following units....
- high efficiency, long service life, driving safety and pleasant appearance;
 - smooth-acting clutch, silent gearbox, dependable braking and steering systems;
 - new types of resistant to corrosion materials.

9-mashq. «A» dialogni o'qing.

DIALOGUE A

Nick: Hullo, Boris!

Boris: Hullo, Nick. How are things?

N: Perfectly well, thank you. I entered the automobile construction college.

B: That's nice, what will you become after graduating from the college?

N: I'll become a technician and deal with manufacturing new cars.

B: Why did you choose this profession?

N: I enjoy learning about a car. I enjoy working with metal. And most of all I enjoy being able to construct cars.

B: Do you enjoy the course?

N: Yes, of course.

B: Tell me about your profession in detail, please?

N: With great pleasure. As you know an automobile must be safe, have smooth acting clutch, silent gears, excellent brakes and steering system. And in order to achieve these qualities a lot of work must be done.

B: Thank you very much for your information. I believe you like your profession very much.

N: Oh, yes, very much, indeed.

10-mashq. *Nikning gaplarini audioga yozing va pauza paytida Borisning gaplarini qaytaring.*

11-mashq. *Borisning gaplarini audioga yozing va pauza paytida Nikning gaplarini qaytaring.*

Eslatma: *10 va 11-mashqlarni bajarayotib, pauza vaqtida o'zingizni gapingizga e'tibor berishga xarakat qiling.*

12-mashq. *Dialogni juft bo'lib o'qing.*

13-mashq. *«B» dialogni o'qing.*

DIALOGUE B

Anton: Where do you study?

Boris: I study at the automobile construction college.

A: Whom does the college train?

B: It trains specialists for the automobile industry.

A: Why did you decide to become a technician?

B: I enjoy working with machines. I enjoy learning about a car. I understand every part of it.

A: What can you tell me about the car?

B: Well, the car of today must be rapid in acceleration, it must have dependable clutch, brakes, and steering system, be stable on the road and have pleasant appearance.

A: Do you enjoy the course?

B: Yes, very much. I have learned a lot of things. For example, I know that the production of the car comprises five phases.

A: What are they?

B: They are designing, working out the technology, laboratory tests, road tests, mass production.

A: And why are laboratory and road tests needed?

B: The cars are subjected to tests in order to meet up-to-date demands.

A: And what are these demands?

B: They are high efficiency, long service life, driving safety, ease of maintenance and so on.

A: I think you will become an expert in automobile engineering.

B: I'll try. The cooperative plan of an academic program with practice at a plant will help me to become a good specialist.

14-mashq. *Dialog matnidan quyidagi o'zbek tilidagi so'zlarni ingliz tilidagi ekvivalentlarini toping va yozing.*

Avtomobillarga xizmat ko'rsatish kollejida o'qiyman, texnik, mashinalar bilan ishlashni yaxshi ko'raman, silliq debriyaj, zamonaviy avtomobil, ishonchlilik, ishonchli tormoz, yoqimli tashqi ko'rinish, avtomobillarni ommaviy ishlab chiqarish, uzoq xizmat ko'rsatish, avtomobilni stendda o'tkaziladigan sinovi, engil texnik xizmat ko'rsatish, zamonaviy talablarga javob berish, yuqori tezlik (o'tag'onlik), yo'llarda sinab tekshirish.

15-mashq. *Antonning gaplarini audioga yozing va pauza paytida Borisning gaplarini qaytaring.*

16-mashq. *Borisning gaplarini audioga yozing va pauza paytida Antonning gaplarini qaytaring.*

17-mashq. *Juft bo'lib dialogni o'qing.*

18-mashq. *Ingliz tilidagi so'z va so'z birikmalarini o'zbekcha ekvivalentini topib yozing.*

1. automobile construction college
 2. to graduate from the college
 3. low fuel consumption
 4. to deal with
 5. designing cars
 6. mass production
 7. long service life
 8. driving safety
 9. to work out
 10. ease of maintenance
 11. the technology of manufacturing processes
 12. to put into mass production
 13. to subject to tests
 14. a rigid quality control
 15. to meet up-to-date demands (requirements)
 16. rapid acceleration
 17. smooth-acting clutch
 18. silent gearbox
 19. dependable brakes
 20. steering system
 21. an academic program
 22. experts
 23. ignition system
- a. uzoq xizmat ko'rsatish
 - b. engil texnik xizmat ko'rsatish
 - c. ommaviy ishlab chiqarishni yo'lga qo'yish

- d. sinov bilan tekshirish
- e. silliq debriyaj
- f. zamonaviy talablarga javob bermoq
- g. qila olmoq
- h. ishonchli tormoz
- i. o'quv dastur
- j. ishlab chiqmoq, tadbiq qilmoq
- k. o't oldirish tizimi
- l. xavfsiz boshqaruv
- m. avtomobil qurilish kolleji
- n. qattiq sifat nazorati
- o. shovqinsiz uzatmalar qutisi
- p. avtomobillarni loyihalash
- q. kollejni tamomlash
- r. ishlab chiqarish jarayonlar texnologiyasi
- s. mutahassislar
- t. ommaviy mahsulot
- u. rul boshqaruv tizimi
- v. yonilg'ining oz miqdordagi sarfi
- w. o'tag'onlik

19-mashq. *Gaplarni quyidagi mos keladigan so'z yoki so'z birikmasi bilan yakunlang.*

1. I study at
2. After graduating from the college I shall become
3. I shall deal with
4. All specialists must know that the production of the automobile comprises
5. It is necessary to know these facts because the automobile of today must meet
6. The modern automobile must have
7. In road tests the automobile undergoes

A technician, a specialist in automobile industry, the production of the automobile, designing, working out the technology of manufacturing processes, laboratory tests, road tests, mass production, high efficiency, long service life, driving safety, ease of maintenance, rigid quality control, rapid acceleration, smooth-acting clutch, silent gearbox, dependable brakes, dependable steering system, the automobile construction college, up-to-date demands (requirements).

20-mashq. Savollarga javob bering.

1. What college do you study at?
2. What will you become after graduating from the college?
3. What will you deal with?
4. What phases does the production of the automobile comprise?
5. Why are the cars subjected to laboratory and road tests?
6. What qualities must the car have?
7. What units must the car have?

21-mashq. Gaplarga mos savol tuzing.

1. I study at the automobile construction college.
2. After graduating from the college I'll become a specialist in automobile construction.
3. I'll deal with manufacturing automobiles.
4. The production of the automobiles comprises the following phases: designing, working out technological processes, laboratory and road tests and mass manufacturing.
5. The automobile must meet up-to-date requirements.
6. The car must have high efficiency, long service life, pleasant appearance and driving safety.
7. The car must have smooth-acting clutch, silent gearbox, dependable braking and steering systems, dependable ignition system.

22-mashq. *Gaplarni ingliz tiliga tarjima qiling.*

1. Men Agrotexnologiyalar institutining Agroiinjeneriya fakultetida o'qiyman.
2. Institutni tamomlaganimdan keyin men avtomobil ishlab chiqarish bo'yicha mutahassis bo'laman.
3. Meni fikrimcha har bir mutahassis avtomobil stand va yo'l sinoviga chiqishi kerakligini bilishi shart.
4. Bu sinovlar avtomobil zamonaviy talablarga javob berishi uchun kerak.
5. Zamonaviy avtomobil quyidagi sifatlarga ega bo'lishi kerak: o'tag'onlik, silliq debriyaj, shovqinsiz uzatmalar qutisi, ishonchli tormoz va rul boshqaruv tizimlari, boshqaruvning yengil bo'lishi.
6. Avtomobil dvigateli ekologik va kam yoqilg'i sarflanadigan bo'lishi kerak.

23-mashq. *20-mashqdan foydalanib, o'zingizni kelajakdagi kasbingiz haqida hikoya tuzing.*

VOCABULARY

construct - loyihalash

construction - loyiha

constructor - konstruktor, loyihachi

deal with - ish ko'rmoq, shug'ullanmoq

demand - talab qilmoq, talab

dependable brakes - ishonchli tormozlar

design - loyihalamoq, loyiha

designer - loyihachi, konstruktor

develop - rivojlanmoq

development - rivojlanish

driving safety - haydash xavfsizligi

efficiency - unumdorlik, samaradorlik

engineer - injener

fuel consumption - yoqilg'i sarfi

handling - ishlov berish, parvarish
ignition system - o't oldirish tizimi
maintenance - saqlash
manufacture - ishlab chiqarish
manufacturer - ishlab chiqaruvchi
manufacturing - ishlab chiqarish
mechanics - mexanika
mechanism - mexanizm
produce - ishlab chiqarish
producer - ishlab chiqaruvchi
production - mahsulot
put into mass production –
ommaviy ishlab chiqarishga qo'yilmoq
quality - sifat
rapid acceleration - tez tezashtirish (приёмистость)
require - talab qilmoq
requirement - talabnoma
rigid quality control - qattiq sifat nazorati
science – ilm, fan
scientist - olim
service life - xizmat muddati
silent gearbox - tovushsiz uzatmalar qutisi
smooth-acting clutch - silliq ishlaydigan debriyaj
solution - yechim
steering system - boshqaruv tizimi
subject to tests - sinovdan o'tishi kerak
technician - texnik
technologist - texnolog
technology - texnologiya
undergo tests - sinovlardan o'tmoq

unit - qism, agregat

up-to-date - zamonaviy

Unit Two

Text: Components of the Automobile

Dialogue

1-mashq. So'z va so'z birikmalarini o'qing va o'zbek tilidagi ekvivalentlarini eslab qoling.

engine (power plant) - dvigatel (elektrostantsiya)

chassis - shassi

body - kuzov

power train - kuch uzatmasi

running gear - ishlaydigan mexanizm

steering system - rul tizimi

brakes - tormozlar

clutch - debriyaj

gearbox - uzatmalar qutisi

propeller shaft – kardan mili

final drive - bosh uzatma

differential - differensial

rear axle - orqa aks

axle shafts - yarim o'qlar

frame with axles - o'qlari bo'lgan ramka

wheels and springs - g'ildiraklar va prujinalar

hood - kapot

fenders - qanotlar

heater - isitkich

windshield wiper - oyna tozalagich

include - o'z ichiga olmoq
consist of - ... dan iborat bo'lmoq
as well - shuningdek
in turn - o'z navbatida
source of power - quvvat manbai
fuel - yoqilg'i
cooling - sovutish
lubricating – moylash

2-mashq. *Xalqaro so'zlarni o'qing va tarjima qiling.*

Automobile, chassis, electric, system, control, differential, ventilator, cylinder.

TEXT

Components of the Automobile

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

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

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

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

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

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

3-mashq. *Terminlarga mos keluvchi so'zlarni topib yozing va o'zbek tiliga tarjima qiling.*

the engine (dvigatelga); the chassis (шасси); the body (kuzovga).

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

4-mashq. Matndan savollarga javob toping:

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

5-mashq. Tugallanish fikriga mos keluvchi so'zni tanlab, gaplarni yakunlang.

1. The automobile is made up of...	1. a power transmission, running gear, steering and braking systems.
2. The engine is ...	2. the clutch, gearbox, propeller shaft, final drive, differential and axle shafts.
3. The engine includes ...	3. a hood, fenders and accessories.
4. The chassis consists of...	4. the engine, the chassis and the body.
5. The power transmission comprises ...	5. a frame with axles, wheels and springs.
6. The running gear consists of... .	6. the source of power.
7. The body has ...	7. fuel, cooling, electric and lubricating systems.

6-mashq. Matndan quyidagi gaplarni ingliz tilidagi ekvivalentlarini toping va yozing.

1. Avtomobil 3 asosiy qism: dvigatel, shassi va kuzovdan tashkil topgan.
2. Dvigatel — bu energiya manbaai.
3. Dvigatel yonilg'i, sovutish, moylovchi, va elektr tizimlarini o'z ichiga oladi.
4. Shassi kuch uzatma, yurish qismi, rul boshqaruvi va tormoz tizimlarini o'z ichiga oladi.
5. Kuch uzatma(transmissiya) o'z navbatida stepleniya, uzatmalar qutisi, kardannli uzatma, bosh uzatma, differensial, orqa ko'prik va yarim o'qlardan iborat.
6. Yurish qismi rama o'qlari bilan, g'ildirak va resorlarni o'z ichiga oladi.
7. Kuzov kapot, qanotlar va yordamchi aksessuarlarni: isitgich, oyna tozalagich, magnitola, konditsioner va boshqalarni o'z ichiga oladi.

7-mashq. Dialogni bir necha marta o'qing va quyidagi mashqlarda ishlating.

DIALOGUE

A: Do you know what parts the automobile is made up of?

B.: Certainly. It is made up of the engine, the chassis and the body,

A: What is the source of power?

B:The source of power is the engine. It includes fuel, cooling, lubricating and electric systems.

A: And what does the chassis consist of?

B:It consists of a power transmission, running gear, steering and braking systems. By the way, the power transmission, in turn, comprises the clutch, gearbox, propeller shaft, final drive, differential, rear axle and axle shafts.

A: And what has the body?

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

A: Thank you very much for your information.

B: Don't mention it. I am glad to help you.

8-mashq. *Dialogdan quyidagi so'z va so'z birikmalarini ingliz tilidagi ekvivalentlarini toping.*

...dan tayyorlangan; shassi; kuzov; o'z ichiga olmoq; yoqilg'i, sovutuvchi, moylash va elektr tizimlari; transmissiya; yurish qismi; rul va tormoz tizimlari; kardanli uzatma; bosh uzatma; differensial; orqa ko'prik; yarim o'qlar; kapot; qanotlar; yordamchi qurilmalar; oyna tozalagich.

9-mashq. *A gaplarini audio kassetaga yozing va pauza paytida B gaplarini qaytaring.*

10-mashq. *B gaplarini audio kassetaga yozing va pauza paytida A gaplarini qaytaring.*

11-mashq. *Gaplarni quyidagi mos keluvchi so'z va so'z birikmalari bilan yakunlang.*

A: What parts does the automobile ...?

B: It is made up of...

A: What is...?

B: The source of power is the ...

A: What systems does the engine ...?

B: It includes ...

A: What does the chassis ...?

B: The chassis

A: What does the power train include?

B: The power train includes ...

A: What units does the body comprise?

B: It comprises ... and accessories such as ...

A: Thank you for your

Engine, chassis, body, power train, running gear, steering system, brakes, clutch, gearbox, propeller shaft, final drive, differential, rear axle, axle shafts, hood and

fenders, heater, windshield wipers, information, conditioner, consist(s) of, the source of power, include, fuel, cooling, lubricating, electric systems.

12-mashq. *Juft bo'lib dialogni o'qing.*

13-mashq. *O'ng tarafdagi o'zbekcha so'z va so'z birikmalarini chap tarafdagi ingliz tilidagi mos keluvchi so'zlarni topib yozing.*

- | | |
|------------------------|-------------------------|
| 1. power plant | a. debriyaj |
| 2. chassis | b. kuch uzatma |
| 3. body | c. bosh uzatma |
| 4. power train | d. g'ildirak |
| 5. running gear | e. rul boshqaruv tizimi |
| 6. steering system | f. kapot |
| 7. brakes | g. yarim o'qlar |
| 8. clutch | h. yurish qismi |
| 9. gearbox | i. yoqilg'i tizimi |
| 10. propeller shaft | j. oyna tozalagich |
| 11. final drive | k. uzatmalar qutisi |
| 12. rear axle | l. moylash tizimi |
| 13. axle shafts | m. kuchli qurilma |
| 14. frame | n. ramka |
| 15. wheels | o. o'z navbatida |
| 16. springs | p. tormoz |
| 17. hood | q. osmalar (ressorlar) |
| 18. fenders | r. shuningdek |
| 19. windshield wipers | s. shassi |
| 20. fuel system | t. kardanli uzatma |
| 21. cooling system | u. orqa ko'prik |
| 22. lubricating system | v. energiya manbai |
| 23. in turn | w. sovutish tizimi |

24. as well x. qanotlar
25. source of power y. kuzov

14-mashq. Savollarga javob bering.

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

15-mashq. Mehanizm ta'rifini mos keluvchisini tanlang va yozing.

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

VOCABULARY

accessories — yordamchi qurilmalar

cooling — sovutish

as well — shuningdek

axle shafts – yarim o'qlar

body — kuzov

conditioner - konditsioner

consist of — dan iborat bo'lmoq

device — qurilma

disengage — o'chirish uzib qo'yish

engage — yoqish, ulash

engine — dvigatel

fenders — qanotlar

final drive — bosh uzatma

fix — biriktirmoq

flywheel — maxovik

frame — rama

fuel – yoqilg'i

gearbox — uzatmalar qutisi

heater - isitgich

hood — kapot

in turn – o'z navbatida

include — o'z ichiga olmoq

lubricating (lubrication) — moylash

measure — o'lchov

pedal — pedal

power train (transmission) – kuch uzatma (transmissiya)

power plant — kuch qurilmasi

propeller (cardan) shaft –kardanli uzatma

rear axle – orqa ko'pri

release the engine — dvigatelni uzib qo'yish, o'chirish

running gear — yurish qismi

source of power — energiya manbai

speed — tezlik

speedometer - spidometr

springs — osmalar (ressorlar)

tachometer — taxometr

wheel — g'ildirak

windshield wipers – oyna tozalagichlar

Unit Three

Text: Principle of Operation of the
Four-Stroke Petrol Engine

Dialogue A: Tracing a Fault

Dialogue B: At the Repairing Shop

1-mashq. *So'z va so'z birikmalarini o'qing va o'zbek tilidagi ekvivalentlarini eslab qoling*

bottom dead center - pastki chetki nuqta

charge of fuel - yoqilgi energiyasi

combustion - yonish

combustion chamber - yonish kamerasi

compression stroke - siqish takti (aralashma)

connecting rod - shatun

crankshaft - tirsakli val

cylinder - slindr

diesel engine - dizel dvigatel

engine - dvigatel

exhaust stroke - chiqish takti

four-stroke cycle - to'rt taktli sikl

fuel injection - yoqilg'ini oqishi

ignite - o't oldirmoq
ignition - o't oldirish
intake (inlet) stroke - kiritish takti
internal combustion engine - ichki yonuv dvigatel
mixture - aralashma
operating cycle - ishchi aralashma
petrol engine - benzinli dvigatel
piston - porshen
power stroke - ish jarayon
pressure - bosim
reciprocating movement - qaytaruvchi kirituvchi harakat
residual gas - qoldiq gaz
rotary movement - aylanma harakat
spark plug - o't oldirish tizimi
stroke - takt (porshenning);
top dead center - yuqori chetki nuqta
valve - klapan

2-mashq. *So'z yasovchi qo'shimchalarga e'tibor berib so'zlarni o'zbek tiliga tarjima qiling.*

to combust — combustion; to operate — operation; to ignite — ignition; to reciprocate — reciprocation; to connect — connection; to compress — compression; to describe — description.

3-mashq. *Xalqaro so'zlarni o'qing va tarjima qiling.*

Principle, cycle, piston, center, cylinder, atmosphere.

4-mashq. *Gaplarni 1-mashqdagi terminlardan foydalanib, o'zbek tiliga tarjima qiling.*

1. During the inlet (intake) stroke the inlet valve opens and a charge of fuel (mixture) flows into the cylinder.
2. During the compression stroke the inlet valve is closed and the fuel is compressed by the rising piston.
3. During the power stroke both valves are closed, pressure rises in the combustion chamber, and the spark ignites the mixture.
4. During the exhaust stroke the exhaust valve is opened, pressure is released and the residual gases flow into the atmosphere through the exhaust valve.

TEXT

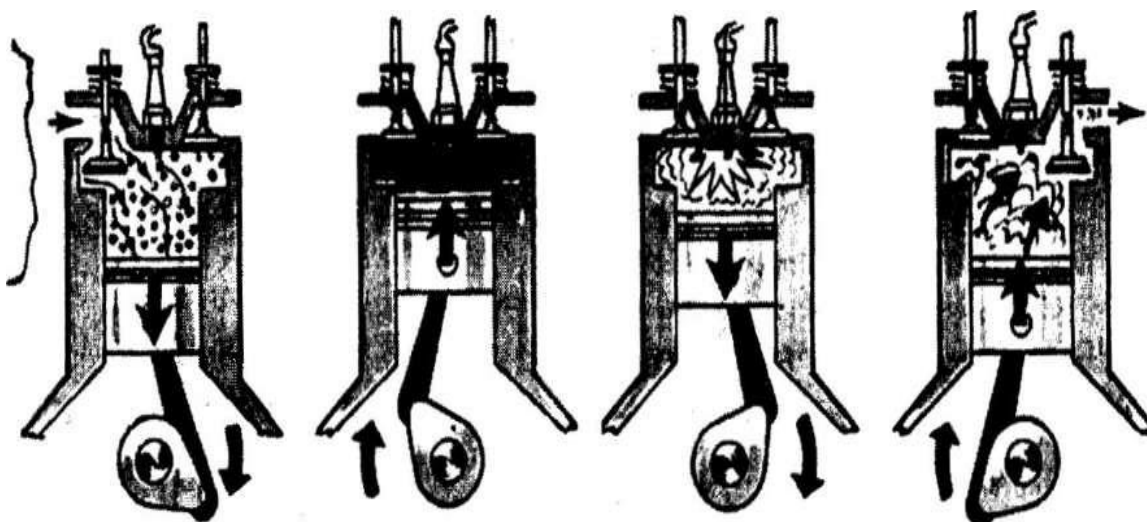
Principle of Operation of the Four-Stroke Petrol Engine

The internal combustion engine is called so because fuel is burned directly inside the engine itself. Most automobile engines work on a 4-stroke cycle. A cycle is one complete sequence of 4 strokes of the piston in the cylinder. The operating cycle of the four-stroke petrol engine includes: inlet stroke (intake valve opens), compression stroke (both valves closed), power stroke (both valves closed), exhaust stroke (exhaust valve is opened).

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

into the atmosphere. This is called the exhaust stroke which completes the cycle. So the piston moves in the cylinder down (intake stroke), up (compression stroke), down (power stroke), up (exhaust stroke).

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



1 - intake 2 - compression 3 - power 4 - exhaust

*Puc. 1. Principle of Operation of the Four-Stroke
Petrol Engine*

1. intake – kirish takti
2. compression — siqish takti
3. power — ish jarayoni
4. exhaust — chiqish takti

5-mashq. *Matndan kiritish takti, siqish takti, ishchi jarayon, chiqish takti haqida gap ketgan satrni toping va o'zbek tiliga tarjima qiling.*

6-mashq. *Savollarga mos javobni tanlang.*

1. Why is the engine called the internal combustion engine?
2. What stroke is called the inlet one?
3. What is a compression stroke?

4. What takes place in the cylinder on power stroke?
5. What takes place on the exhaust stroke?
6. By means of what is the reciprocating movement of the pistons converted into rotary movement of a crankshaft
1. It is called so because the fuel (the mixture) is burned...
 - a) directly inside the engine;
 - b) outside the engine.
2. The inlet stroke is called so because during moving down the piston...
 - a) the inlet valve opens to intake a charge of fuel into the cylinder;
 - b) the inlet valve is closed and the mixture is compressed.
3. The compression stroke is a stroke...
 - a) when the inlet valve opens to intake a charge of fuel into the cylinder;
 - b) when the inlet valve is closed and the mixture is compressed.
4. On power stroke.....
 - a) the spark plugs ignite the mixture, both valves are closed during its combustion;
 - b) the exhaust valve is opened and the residual gas flows through the exhaust valve into the atmosphere.
5. On the exhaust stroke
 - a) the spark plugs ignite the mixture, both valves are closed during its combustion;
 - b) the exhaust valve is opened and the residual gas flows through the exhaust valve into the atmosphere.
6. It is done
 - a) by means of pistons;
 - b) by means of the connecting rods.

7-mashq. *Gaplarni ma'nosiga qarab tamomlang.*

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

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

8-mashq. *Dialogni bir necha marta o'qing keyin juft bo'lib o'ynang.*

DIALOGUE A Tracing a Fault

Nick: Peter, I know you are a good driver. I would like you to have a look at my car.

Peter: What's wrong with your car?

N: I don't know.

P: Let me have a look. When did you have your plugs checked?

N: Three days ago. I thought I had run out of fuel but the tank is half full.

P: The carburettor is in order but the engine is misfiring. I guess the battery has run down. It needs recharging.

N: Too bad.

P: Don't get upset about it. It won't take you long to have your battery recharged.

N: Do you really think so?

P: I am sure of it. I advise you to have the engine greased.

N: I'll follow your advice. Thank you, Peter.

P: Don't mention it, Nick. I'm very sorry I couldn't help you.

N: Well, you helped me to find the fault. Thanks a lot. Good-bye.

P: See you later.

9-mashq. O'zbek tilidagi so'zlarni ingliz tiliga tarjima qiling va dialogni juft bo'lib o'qing.

1. - Mashinamga nima bo'lganini bilmayman.

- Let me trace the fault.

- Iltimos, siz tajribali haydovchimisiz?

- Yes, I am. I have been driving a car for fifteen years now. May be you have run out of fuel?

- Bak deyarli to'la.

- When did you have your plugs checked?

- Kecha. Karbyurator ham yaxshi edi.

- Bunday holatda shu yaqin oradagi ta'mirlash stansiyasiga boramiz.

- Good idea. They will have the car fixed.

2. - Mashinangni qachon tuzatishdi?

- Last month. The engine is in good condition now. It was well greased.

- Yaxshi. Men ham mashinamni tuzatishim kerak. Tormoz sustlashdi. (The brakes are slack). Akkumulyatorni quvvati tugadi (The battery has run down).

- It can be easily done.

- Buni eshitganimdan xursandman.

3. - Qanday mashina sotib olishni hohlaysiz?

- I want a second-hand car. Could you help me?
- Jonim bilan.
- I hear there are good cars on sale 42nd Street.
- Men u magazinni bilaman. Ketdik o'sha yerga boramiz.
- Good idea. If I choose a car there, I won't have to bother any more.
- Juda to'g'ri.

10-mashq. Dialogni o'qing va nima haqidaligini ayting.

DIALOGUE B

At the Repairing Shop

Client: Good afternoon! Can you help me? There is something wrong with the engine.

Master: Hi! What is wrong with it?

C: I don't know. It wouldn't start. Maybe the pistons and valves are in disorder.

M: Let's have a look! Well, they are quite right.

C: And what about the crankshaft, or electric spark plugs. I know absolutely nothing about the operating cycle of the engine.

M: Just a moment. Don't worry! We shall check up all units and how they work together.

Some time later

M: My God! There is no petrol in the tank. How can you move drive?

C: Really? Oh, I have forgotten to fill in the tank! I beg your pardon to trouble you!

M: No trouble, at all. You are welcome!

VOCABULARY

as a result - natijada

assume - mo'ljallamoq

bottom dead center - pastki chetki nuqta

burn - yonmoq

by means of - yordami bilan, orqali

charge of fuel - yoqilg'i quvvati
combustion - yonish
combustion chamber - yonish kamerasi
compression stroke - siqish takti (aralashmalar)
connecting rod - shatun
convert - o'zgartirmoq
crankshaft - tirsakli val
cylinder - slindr
descend - tushmoq, (porshen haqida)
describe - tasvirlamoq
diesel engine - dizel dvigateli
directly - bevosita
don't get upset - barbod qilmaslik
engine - dvigatel
exhaust stroke - chiqish takti
follow smb's advice - kimningdur maslahatiga kirmoq
four-stroke cycle - to'rt taktli sikl
fuel injection - yoqilg'ining oqishi
have a look - ko'z tashlamoq
heat - iliq
I guess - men o'ylayman...
ignite - o't oldirmoq
ignition - o't olishi
in order - joyida (shay holatda)
intake (inlet) stroke - kiritish takti
internal combustion engine - ichki yonish dvigateli
mixture - aralashma
operating cycle - ishchi sikl
petrol engine - benzinli dvigateli

piston - porshen
power stroke – ishchi jarayon
pressure - bosim
reach - yetmoq
recharge - quvvatlamoq (akkumulyator)
reciprocating movement – ilgarilanma - qaytma harakat
residual gas - qoldiq gaz
rise - ko'tarilmoq
rotary movement - aylanma harakat
run down - o'tirmoq (akumlyator haqida)
run out of fuel - yoqilg'I tugashi
spark plug - o't oldirish tizimi
stroke - takt, jarayon (porshenni)
tank - yoqilg'i baki
top dead center - yuqori chetki nuqta
trace the fault - qidirmoq (kuzatmoq) buzqlik
valve – klapan

Unit Four

Text: Chassis

Dialogue: Transmission Mechanism

1-mashq. So'z va so'z birikmalarini o'qing va o'zbek tilidagi ekvivalentlarini yod oling.

unit - qism, blok agregat
gear – shesternya (tishli g'ildirak)
power transmission - elektr uzatma
gearbox - uzatmalar qutisi
tractive effort – tortishish kuchi
running gear - shassi
driving wheels - oldingi g'ildirak

steering system - rul boshqaruv tizimi

shaft – val (mil)

car springs - avtomobil osmalari (ressorlari)

flywheel – volan (maxovik)

rear axle - orqa aks (zadny most)

clutch – debriyaj (stepleniye)

final drive - bosh uzatma

friction device - chig'irli qurilma (ishqalanish moslamasi)

axle shafts - yarim vallar

crankshaft - tirsakli val (kolenchatiy val)

brakes - tormoz

2-mashq. So'z yasovchi qo'shimchalarga e'tibor berib, s'ozlarni o'zbek tiliga tarjima qiling.

to transmit - transmission; to connect - connection;

to found - foundation; to move - movement.

3-mashq. Xalqaro so'zlarni o'zbek tiliga tarjima qiling.

Transmission, system, mechanism, radiator, friction, automobile, cardan, portion, final, accelerator, pedal, position.

4-mashq. 1-mashqdagi terminlardan foydalanib, gaplarni o'zbek tiliga tarjima qiling.

1. The chassis includes the running gear, the power transmission and the steering mechanism.
2. The power transmission consists of the clutch, gearbox, cardan shaft, rear axle, final drive, differential and axle shafts.
3. The clutch connects the engine with the driving wheels.
4. The gearbox changes the speed of the car movement.
5. The steering mechanism changes the direction of the car.

TEXT

Chassis

The main units of the chassis are: the power transmission, the running gear and the steering mechanism. The power transmission includes the whole mechanism between the engine and the rear wheels. This entire mechanism consists of the clutch, gearbox, propeller (cardan) shaft, rear axle, final drive, differential and axle shafts.

At the front end of the car is the engine. On the back of it is the flywheel. Behind the flywheel is the clutch. The clutch is a friction device connecting the engine with the gears of the gearbox. The main function of the gearbox is to change the speed of the car.

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

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

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

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

6-mashq. Savollarga mos javobni tanlang.

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

7-mashq. Gaplarni Complex Subject ga ahamiyat berib o'zbek tiliga tarjima qiling.

1. Transmission, running gear and steering mechanism **are known** to be the main units of the chassis.
2. The clutch **is known** to connect the engine with the driving wheels of the car.
3. The gearbox is **known** to change the speed of the car.

4. The steering mechanism is **known** to change the direction of the car.
5. Brakes **are considered** to be one of the most important mechanisms of the car.

8-mashq. *Quyidagi gaplarni ingliz tiliga tarjima qiling. (topshiriqni bajarish davomida matndan foydalanishingiz mumkin).*

1. Shassining asosiy qismlari: transmissiya, yurish qismi, va rul mexanizmi hisoblanadi.
2. Radiator avtomobilning old qismida joylashgan bo'ladi.
3. Mahovik dvigatelning orqa qismiga biriktiriladi.
4. Debriyaj dvigatel bilan uzatmalar qutisini bog'laydi.
5. Uzatmalar qutisi avtomobil harakat tezligini o'zgartirish uchun mo'ljallangan.
6. Kuchlanish kardanli uzatma orqali uzatiladi.
7. Bosh uzatma dvigatelning katta aylanishini yetakchi g'ildirakka katta bo'lmagan aylanishga pasaytirib beradi.
8. Differensial avtomobilning burilishida yetakchi g'ildirakni har xil tezlik bilan aylanishini taminlaydi.
9. Rul mexanizmi avtomobilning harakat yo'nalishini o'zgartirish uchun mo'ljallangan.
10. Tormoz avtomobilni to'xtatish uchun yoki tezlikni pasytirish uchun ishlatiladi.

9-mashq. *O'ng tarafdagi avtomobil qismi yoki mexanizmini ta'rifidan chap tarafdagi mos keluvchi nomini toping.*

- | | |
|--------------------|--|
| 1. differential | a) mechanism used to increase the speed of the car |
| 2. steering wheel | b) wheel used to turn the direction of the car |
| 3. clutch | c) mechanism used to transmit power to the back axle |
| 4. rear axle | d) instrument used to measure the speed of the car |
| 5. steering system | e) mechanism that slows or stops the car |
| 6. speedometer | f) mechanism used to guide the car |
| 7. brakes | g) mechanism used to engage or disengage the engine with gearbox |

8. gearbox h) mechanism used to carry the greater portion of the car weight
9. cardan shaft i) mechanism used to turn the wheels at different speeds

10-mashq. Dialogni juft bo'lib o'qing.

Dialogue

TEXT

Transmission mechanism

Teacher: Let's speak about the transmission mechanism. What main units does the transmission include?

Student: The transmission is the entire mechanism between the engine and the rear wheels. It includes the clutch, gearbox, cardan shaft, rear axle, final drive and differential.

T: What does the clutch connect?

S: The clutch connects the engine with the gearbox.

T: And what does the gearbox do?

S: The gearbox changes the speed of the car.

T: What does the differential enable?

S: The differential enables the driving wheels to move at different speeds when turning the car.

T: For what purpose is the steering system used?

S: The steering system is used for changing the direction of the car movement.

T: And what is the function of the brakes?

S: Brakes are used to slow or stop the car.

T: That's right. You know the subject very well.

11-mashq. Lug'atdan foydalanib, matnni o'zbek tiliga tarjima qiling.

TEXT

Basic troubles of transmission mechanism

The transmission of the engine torque to the driving wheels of the automobile must be smooth. There should be no vibration in the operation of transmission mechanism within the range of travelling speeds.

The indications of malfunctions in the transmission mechanism components are as follows:

1. incomplete disengagement of the clutch;
2. difficult engagement or self-demeshing of gears;
3. run out and vibration of the cardan-drive shaft.

What to do in these cases:

1. Check the free travel of the clutch pedal and adjust it.
2. Check the oil level in the gearbox housing and wash breather channel.
3. Check to see that all the fastening bolts are securely tightened and that the trunnion crosses fit properly the bearings, and the bearings, in turn, the universal-joint forks.

VOCABULARY

unjust - tartiblamoq

attach - mahkamlamoq, biriktirmoq

be capable - imkoniyatiga ega bo'lmoq

breather channel - havo kanali

check - tekshirish

decrease the speed - tezlikni pasayishi

driven wheels - boshqariladigan g'ildiraklar

driving wheels - yetakchi g'ildiraklar

engine crankshaft - dvigatelning tirsakli vali

fastening bolts - mahkamlovchi boltlar

fit properly - to'g'ri kelmoq

flywheel - mahovik

frame - rama

free travel - erkin jarayon

gear lever - uzatmalar qutisi dastagi (richag)

greater portion of the car weight – avtomobil og'irligining katta qismi
hold the car position - avtomobilni vaziyatini ushlab turish
housing - karter, korpus
in turn - o'z navbatida
incomplete disengagement - tugallanmagan o'chirish
(debriyaj)
level - daraja
malfunction - nosozlik
mount - o'rnatmoq
move up and down - yuqoriga va pastga harakatlanish (to'g'ri bo'lmagan yo'lda silkinish)
power transmission - elektr uzatish
rear wheels - orqa g'ildiraklar
run out - yeyilish
running gear - shassi
self-demeshing of gears – 6 qirrali detallarning o'z-o'zidan yo'q qilish
springs - osmalar (ressorlar)
steering system - rul boshqaruvi tizimi
steering wheel - rul aylanasi (rul)
support - qo'llamoq
tighten - mahkamlamoq, tortish
torque – aylantirayotgan payt
tractive effort - tortishish kuchi
travelling speed - yurish tezligi
trouble - nosozlik
trunnion cross – kardan krestovinasasi
universal - joint forks - universal qo'shma vilkalar
wash - yuvish
within the range - oralig'ida

Unit Five

Text: Frame

Dialogue

1-mashq. So'z va so'z birikmalarini o'qing va o'zbek tilidagi ekvivalentlarini yod oling.

frame - rama

twist - burama

support - tirgovich

suspension - ilmoq

body – kuzov

channel section – bo'sh qism

longitudinal members - lonjeron

weld – payvandlash

cross members – k'ondalang to'sin

rivet - parchinlash

reinforce – mustahkamlamoq

insulate - izolyatsiya qilmoq

rigid - qattiq

rubber pad - rezina qistirma

mining - mustahkam

unibody construction – yaxlit kurilma

withstand strains - monokok tanasi bilan yukga bardosh berish

strengthen - mustahkamlamoq

2-mashq. Xalqaro so'zlarni o'zbek tiliga tarjima qiling.

Chassis, structure, system, integral, construction, steel, vibration, passenger, metal, contact.

3-mashq. Qo'shimchalarga e'tibor berib, so'zlarni tarjima qiling.

To found - **foundation**; frame - **frameless**; to construct - **construction**; structure - structural - **structurally**; to attach - **attachment**; to vibrate - **vibration**; to insulate - **insulation**; usual - **usually**.

TEXT

Frame

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

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

Conventional frames are usually made of heavy steel channel sections welded or riveted together. All other parts of the car are attached to the frame.

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

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

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

4-mashq. Matndan o'zbekcha atamalarga inglizcha ekvivalentlarini toping va yozing.

Lonjeron, k'ondalang to'sin, qattiq, mining, monokok tanasi bilan yukga bardosh berish, ilmoq, an'anaviy (umumiy) ramka, ramkasiz qurilma, bo'sh qism, payvandlangan yoki perchinlangan, ramkaga ulash, rezina qistirma, mustahkamlamoq.

5-mashq. Matnda savollarga javob toping.

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

6-mashq. Chap ustundagi jumalar uchun o'ng ustundan mos kismlarini tanlang.

1. The frame provides support for....	a. channel sections welded together.
2. Conventional frames are made of....	b. prevent noise and vibrations from passing to the passengers.
3. Tameless constructions are made....	c. cross members.
4. The frame is insulated from other parts in order to	d. the engine, body and power train members.
5. The frame is reinforced by....	e. integral with the body.

7-mashq. Gaplarni o'zbek tiliga tarjima qiling. Complex Objectga e'tibor bering.

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

8-mashq. *Matnni lug'atdan foydalanmasdan tarjima qiling.*

The frame is a structural centre of any car as it provides support for the engine, body, wheels and power-train members.

Cross members reinforce the frame and provide support for the engine and wheels. The frame is extremely rigid and strong. The engine is attached to the frame in three or four points and insulated in these points by some rubber pads to prevent vibration and noise from passing to the frame and thus to the passengers. There are two types of frames: conventional construction and unibody one.

9-mashq. *Gaplarni ingliz tiliga tarjima qiling.*

1. Ramka tebranishga, burilishga va boshqa yuklarga (stresslarga) bardosh berishi kerak.
2. Ramkalar ikki xil: odatiy (standart) va korpus bilan birgalikda yasalgan bo'ladi.
3. Standart ramkalar bir-biriga payvandlangan yoki perchinlangan po'latdan yasalgan ichi bo'sh qismlardan yasalgan.
4. Ramkasiz tuzilmalar korpus bilan birgalikda yasalgan.
5. Shovqin va tebranishlar avtomobil yo'lovchilariga o'tmasligi uchun ramka korpusdan rezina qustirmalar bilan izolyatsiya qilingan.

10-mashq. *Dialogni o'qing va keyin uni juftlikda rol o'ynang.*

Dialogue

Stas: Hi! Seen you for ages! How are you?

Vlad: Hi! I'm perfectly well! I am working at a repairing shop. Very interesting I can tell you.

S.: What are you doing there?

V.: Now, we are testing the frame. You see, the driver has got into trouble. Something is wrong with his car. He thinks it is the frame.

S.: Has the car a conventional frame or a unibody frame?

V.: Unibody frame.

S.: I think you have to do a lot of work as body parts strengthen the entire car.

V.: Sure. We are testing all parts in order to find out the damage.

S.: I think you will cope with the problem.

Notes:

seen you for ages - seni ko'rmaganimga yillar bo'ldi

perfectly well - z'or

get into trouble - muammoga tushib qolish

be wrong with - bir gap bor

sure - albatta (shubhasiz)

find out the damage - futurni topish

cope with - hal qilish (muammoni)

VOCABULARY

alignment - tekislash

attach - biritmoq

conventional frame - an'anaviy ramka

extremely rigid - juda qattiq

fasten - mahkamlamoq

firm structure - kuchli (bardoshli) tuzilma

frame - ramka

heavy steel - mustahkam po'lat

integral frame - ajralmas ramka

pad – yostiq

provide - ta'minlash

reinforce - mustahkamlamoq

rivert - parchinlash

rubber insulator - rezina qistirma

strengthen - mustahkamlamoq

suspension system - ilmoq tizimi

weld - payvandlash

Unit Six

Text: Clutch

Dialogue

1-mashq. *So'z va so'z birikmalarini o'qing va o'zbek tilidagi ekvivalentlarini yod oling.*

friction device - ishqalanuvchi qurilma

pressure disc - bosiladigan disk

hard-wearing material - qattiqqa chidamli material

connect - bog'lamoq

gearbox - uzatmalar qutisi

frictional force - ishqalanish kuchi

start the car - avtomobilni yurgizmoq

clutch pedal - debriyaj pedali

release the engine - uzib qo'yish

at rest - ishlamayotgan holda

is engaged - ulangan

fix – mahkamlamoq (ishga tushirmoq)

flywheel - volan

is disengaged - ulanmagan

friction disc (plate) - ishqalanish diski

run idly - bo'sh ishlamoq

2-mashq. Suffiks va prefikslarga e'tibor bergan holda so'zlarni tarjima qiling.

Connect — **disconnect** — **connection** — **disconnection**; operate — **operation**;

friction — **frictional**; engage — **engagement** — **disengagement**.

3-mashq. *Halqaro so'zlarni o'qing va tarjima qiling.*

Start, disc, friction, frictional, material, base, principal, control, pedal.

TEXT

Clutch

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

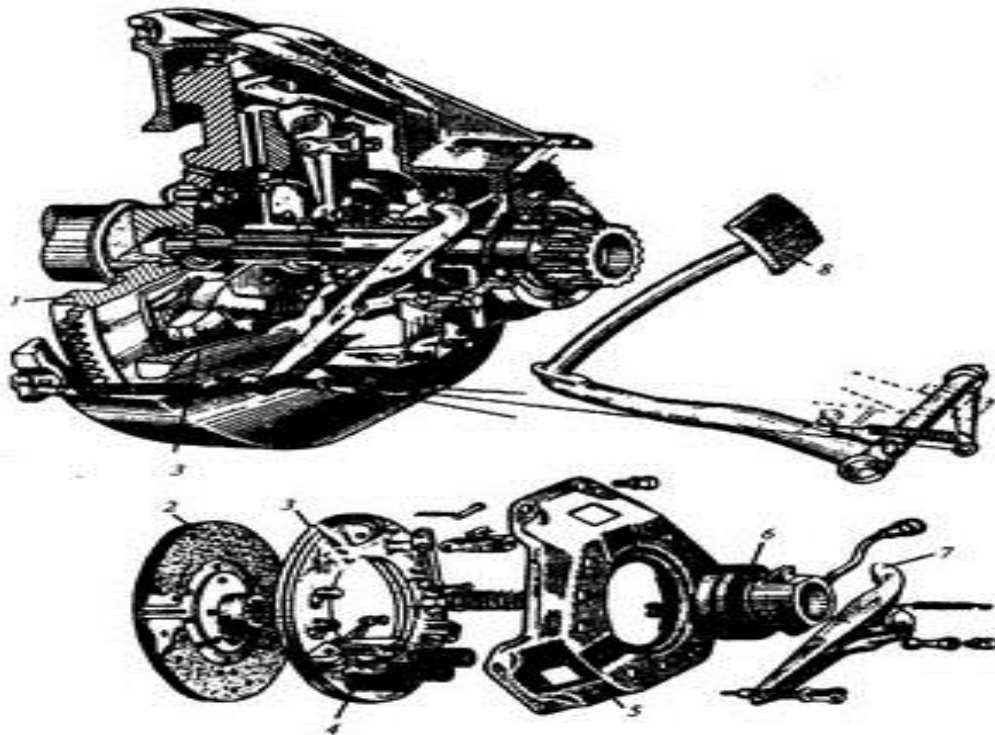


Рис. 2. Clutch

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

The clutch is fixed between the flywheel of the engine and the gearbox and consists of two plates (discs): the friction disc and the pressure disc. The friction disc is situated between the flywheel and the pressure plate and has a hard-wearing material on each side.

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

4-mashq. Matnda quyidagi berilgan so'zlarni toping va ularning o'zbekcha ekvivalentlarini toping.

Friction device, clutch, gearbox, to free, to start, to release, flywheel, pressure plate, basic principle of operation, to fix, hard-wearing material, to consist of, to be controlled by, running engine, to run idly, to engage, to disengage, to press down, to be at rest.

5-mashq. Matndan quyidagi savollarga javoblar toping:

1. What device is the clutch?
2. What units does it connect?
3. What is the clutch used for?
4. Where is the clutch placed?
5. What plates does the clutch consist of?
6. What is the basic principal operation of the clutch?
7. What is the clutch controlled by?
8. What takes place when the clutch pedal is at rest?
9. When does the engine run idly?

6-mashq. Gaplarni mantiqan davom ettirib to'ldiring.

1. The clutch is a device connecting
 - a) ...the rear axle and axle shafts.
 - b) ...the gearbox and differential.
 - c) ...the engine and the gearbox.
2. The clutch is situated between
 - a) ...the gearbox and cardan shaft.
 - b) ...the flywheel and the gearbox.
 - c) ...the gearbox and rear axle.
3. The clutch is controlled by
 - a) ...the brake pedal
 - b) ...the clutch pedal.

- c) ...the gearbox and rear axle.
4. The clutch is engaged
- a) ...when the clutch pedal is pressed down.
 - b) ...when the clutch pedal is at rest.
5. The clutch is disengaged
- a) ...when the clutch pedal is at rest.
 - b) ...when the clutch pedal is pressed down.

7-mashq. Dialogni o'qing va savollarga javob bering.

DIALOGUE

A.: What is the function of the clutch?

B.: You see, it serves three functions. It is used for freeing the engine from the gearbox, for starting the car and for freeing the engine from car wheels.

A.: Is it a friction device?

B.: Yes, of course. It is fixed between the flywheel of the engine and the gearbox and usually consists of two discs.

A.: What discs?

B.: The friction disc (driven disc) and the pressure disc.

A.: I suppose the principle of operation of clutches is a frictional force between discs. Am I right?

B.: Yes, you are. When the clutch is fully engaged the frictional force makes discs rotate at the same speed.

A.: And by what is the clutch controlled?

B.: By the clutch pedal. When it is at rest the clutch is engaged and when it is pressed down the clutch is disengaged and the engine is disconnected from the car wheels.

A.: Thank you. And what types of clutches do you know?

B.: Positive clutches and gradual engagement clutches.

A.: Thank you very much for your information.

B.: Not at all. Glad to help you.

8-mashq. *Quyidagi o'zbek tilidagi atamalarning dialogdan inglizcha ekvivalentlarini toping va yozib oling.*

Debriyaj funksiyasi, uzatmalar qutisidan dvigatelni uzib qo'yish uchun, volan va uzatmalar qutisi o'rtasida mahkamlanmoq, ishqalanish diski, bosiladiga disk, ishqalanish kuchi, debriyaj yoqildi, pedal boshlang'ich holatda, debriyaj pedali bosildi.

9-mashq. *A suhbatdoshning gaplarini diktafonga yozib oling va B suhbatdoshning gaplarini pauzalar bilan qaytaring.*

10-mashq. *B suhbatdoshning gaplarini diktafonga yozib oling va A suhbatdoshning gaplarini pauzalar bilan qaytaring.*

- | | |
|--------------------------------|------------------------------|
| 1. a friction device | a. avtomobilni yurgizmoq |
| 2. gearbox | b. ishqalanish diski |
| 3. to start the car | c. volan |
| 4. to release the engine | d. qatiqqa chidamli material |
| 5. is fixed | e. bo'sh ishlamoq |
| 6. flywheel | f. bog'lamoq |
| 7. the friction disc | g. ishqalanish kuchi |
| 8. the pressure disc | h. uzib qo'ymoq |
| 9. hard-wearing material | i. ishqalanish qurilmasi |
| 10. frictional force | j. ishlayotgan holda |
| 11. the clutch pedal | k. mahkamlangan |
| 12. to be engaged | l. debriyaj pedali |
| 13. to be at rest | m. pedalni bosmoq |
| 14. to be disengaged | n. dvigatelni uzib qo'ymoq |
| 15. to press down on the pedal | o. bosiladigan disk |
| 16. to run idly | p. uzatmalar qutisi |

11-mashq. *Dialogni juft bo'lib aytib bering.*

12-mashq. O'ng tarafdagi o'zbekcha ekvivalentlarning chap tarafdagi inglizcha mos keluvchi nomini toping.

13-mashq. Quyida berilgan kerakli so'z va so'z birikmalaridan foydalangan holda gaplarni to'ldiring.

A.: What three functions does the clutch ...?

B.: It is used for

A.: Where is it...?

B.: It is ... between the flywheel of the engine and the

A.: By what is the clutch ...?

B.: It is ...by the....

A.: What takes place when the pedal is ...?

B.: The clutch is

A.: And when the driver pushes down on the pedal?

B.: The clutch is

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

14-mashq. Quyidagi gaplarni ingliz tiliga tarjima qiling.

1. Debriyaj bu ishqalanish qurilmasi.

2. Debriyaj dvigatel va uzatgishlar qutisini bog'laydi.

3. Debriyaj dvigatel volani hamda uzatgichlar qutisi o'rtasida joylashgan.

4. Qoidaga ko'ra, debriyaj ikkita diskdan tashkil topgan: ishqalanuvchi va bosiladigan.

5. Debriyaj debriyaj pedali bilan boshqariladi.

6. Debriyaj pedali ishlamayotgan holda bo'lganida, debriyaj diski ulangan hamda ishchi disk uzatgichlar qutisi va g'ildiraklar bilan ulangan bo'ladi.

7. Haydovchi pedalni bosganida, disklar uzoqlashadi, debriyaj uziladi va dvigatel bo'sh holda ishlaydi.

VOCABULARY

be at rest - boshlang'ich holatda bo'lmoq

car wheels - avtomobil g'ildiraklari

clutch - debriyaj

clutch pedal - debriyaj pedali

connect - ulanmoq

control - boshqarmoq

disconnect - uzmoq

disengage – o'chirmoq

engage - yoqmoq

fix - mahkamlamoq, ishga tushirmoq

flywheel - volan

friction plate (disc) - ishqalanuvchi disk (debriyajniki)

frictional force - ishqalanish kuchi

gear - шестерня; uzatgich

gearbox - uzatgichlar qutisi

hard-wearing material - qatiqqa chidamli material

press down the pedal - pedalni bosmoq

pressure plate (disc) - bosiladigan disk (debriyajniki)

principle of operation - harakat tamoyili

release - bo'shatmoq

run idly - bo'sh ishalmoq

running engine - ishchi dvigatel

Unit Seven

Text: Gearbox.

Dialogue

1-mashq. *So'z va so'z birikmalarini o'qing va o'zbek tilidagi ekvivalentlarini yod oling.*

gear - uzatma
gearbox - uzatmalar qutisi
gearing - tishli bog'lanish
road conditions - yo'l sharoitlari
forward speed - old tezlik
reverse drive - qayta(orqa) ga yurish
low gear - birinchi uzatma
top gear - to'rtinchi(to'g'ri) uzatma
sliding-mesh gearbox - ishqalanuvchi uzatmalar qutisi
constant-mesh gearbox - doimiy uzatmalar qutisi
epicyclic (planetary) gearbox - epitsiklik(planetar) uzatmalar qutisi
ordinary gearing - standart tishli bog'lanish
characteristic feature - xarakterli hususiyat
fixed axes - mahkamlangan (harakatsiz) uchlar
rotate bodyly - korpusli aylanmoq
axis - o'qi
axle - shaft
secure - ta'minlamoq
shifting - o'tish
in direct line - muhim

2-mashq. Halqaro so'zlarni o'qing va o'zbek tiliga tarjima qiling.

Principal, function, construction, constructional, class, classify, type, planet, planetary, history, historical.

3-mashq. Suffikslarga e'tibor bergan holda so'zlarni tarjima qiling.

Move — mov**ement**, construct — construct**ion** — construct**ional**, arrange — arrang**ement**, history — histor**ical** — histor**ically**, wide — wid**ely**, vary — vari**ous**, simple — simpl**ly**, body — bod**ily**.

TEXT

Gearbox

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

1. First or low gear;
2. second gear;
3. third gear;
4. fourth or top gear;
5. reverse gear.

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

1. Sliding-mesh type;
2. Constant-mesh type;
3. Epicyclic (planetary) type.

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

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

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

4-mashq. Matndan savollarga javoblar toping.

1. Where is the gearbox situated?
2. What is the function of the gearbox?
3. What speeds does the gearbox provide?
4. What types of gearboxes do you know?

5. Why is the clutch shaft mounded in direct line with the gearbox shaft?

5-mashq. O'ng tarafdagi mos keluvchi so'zlar bilan chap tomondagi gaplarni to'ldiring.

- | | |
|--|--|
| 1. The principal function of the gearbox is.... mesh type and planetary type | a) ...sliding-mesh type, constant |
| 2. The gearbox provides oldest | b) ... the simplest one and historically |
| 3. Gearbox can be | c) ...to vary the speed of the car |
| 4. The sliding-mesh gearbox is ... reverse | d) ... four forward speeds and one |
| 5. The constant-mesh gearbox | e) ... the most is.... widely used. |

6-mashq. Gaplarni ingliz tiliga tarjima qiling.

1. Uzatmalar qutisi avtomobil harakat tezligini o'zgartirish uchun mo'ljallangan.
2. Uzatmalar qutisi to'rtta old tezlik va orqaga yurishni ta'minlaydi.
3. Uzatmalar qutisi sirpanuvchi, doimiy bog'lanish va planetar turdagi bo'lishi mumkin.
4. Eng sodda bu sirpanuvchi li uzatmalar qutisidir.
5. Doimiy bog'lanishli olti qirrali uzatmalar qutisi ko'proq ishlatiladi.
6. Uzatmalar qutisining shaftda sirpanadigan olti qirralisi old tezliklar va orqaga yurishni ta'minlaydi.

6-mashq. Lug'atdan foydalangan holda matnni tarjima qiling.

Gearboxes are assembled and disassembled on special stands using special mechanisms. In case of trouble in change-speed gearbox it can be repaired only in the workshop. But in order not to get into trouble you should do the followings steps:

- a) check the oil level in the gearbox casing;
- b) wash the breather channel;
- c) change the oil in accordance with the lubrication schedule;
- d) wash the gearbox with a thin mineral oil;

e) drain the used oil through the drain hole.

8-mashq. Dialogni o'qing va juft bo'lib aytib bering.

DIALOGUE

Mike: Peter, do you remember what our teacher told us last time?

What do you know about gearboxes?

Peter: I know that the gearbox is used to change the speed of the car.

M.: And how many speeds does the gearbox provide?

P.: It can provide four forward speeds and one reverse.

M.: Into what types are the gearboxes divided according to their arrangements?

P.: They are divided into sliding-mesh type, constant-mesh type and epicyclic type.

M.: What type is the simplest?

P.: The sliding-mesh one.

M.: Thank you very much for your help.

P.: You are welcome. Glad to help you.

VOCABULARY

assemble - yig'moq

axis - o'qi

axle - aks

breather channel - havo o'tkazuvchi kanal

constant-mesh gearbox - doimiy bog'lanishli uzatmalar qutisi

disassemble - ajratmoq

drain hole - drenaj teshik

epicyclic (planetary) gearbox – epitsiklik (planetar) uzatmalar qutisi

forward speed - old tezlik

gearbox - uzatmalar qutisi

gearbox casing - karter uzatmalar qutisi

gearing - tishli bog'lanish

get into trouble - boshiga kulfat tushmoq

lubrication - surtma

oil level - yog' sathi

repair - tuzatmoq

repairing shop (workshop) - ustaxona

reverse drive - orqaga yurish

shifting - o'tish

sliding-mesh gearbox - sirpanuvchi olti qirralilar uzatmalar qutisi

stand - stend

thin oil - yengil (suyuq) yog'

Unit Eight

Text: Brakes

Dialogue

1-mashq. So'z va so'z birikmalarini o'qing va ularning o'zbekcha ekvivalentlarini eslab qoling.

brakes - tormozlar

force the fluid - suyuqlik uzatmoq

performance - ish

under pressure - bosim ostida

safety - havfsizlik

brakes are applied - tormozlar ishga tushadi

depend - bog'liq

slow - sekinlatmoq

braking effort - tormoz harakati

divide - bo'lmoq

push down on the brake pedal - tormoz pedalini bosmoq

namely - aynan

drum brakes - baraban tormozlar

band brake - tasmali tormoz

disk brakes - diskli tormozlar

shoe brake - pastki tormoz

hydraulic assisted brakes - gidravlikali tormoz

brake shoes - tormoz kolodkasi

brake fluid - tormoz suyuqligi

brake pedal - tormoz pedali

master cylinder - asosiy silindr

2-mashq. *Halqaro so'zlarni o'qing va tarjima qiling.*

Mechanism, passenger, type, hydraulic, cylinder, vacuum, function, classify, classification, mechanical, electric, electromagnet.

3-mashq. *Suffikslarga e'tibor bergan holda so'zlarni tarjima qiling.*

Safe - safety; to improve - improvement; to move - movement; to drive - driver; to apply - application; to attach - attachment; to arrange - arrangement; to perform - performance; name - namely; to operate - operation; to equip - equipment.

TEXT

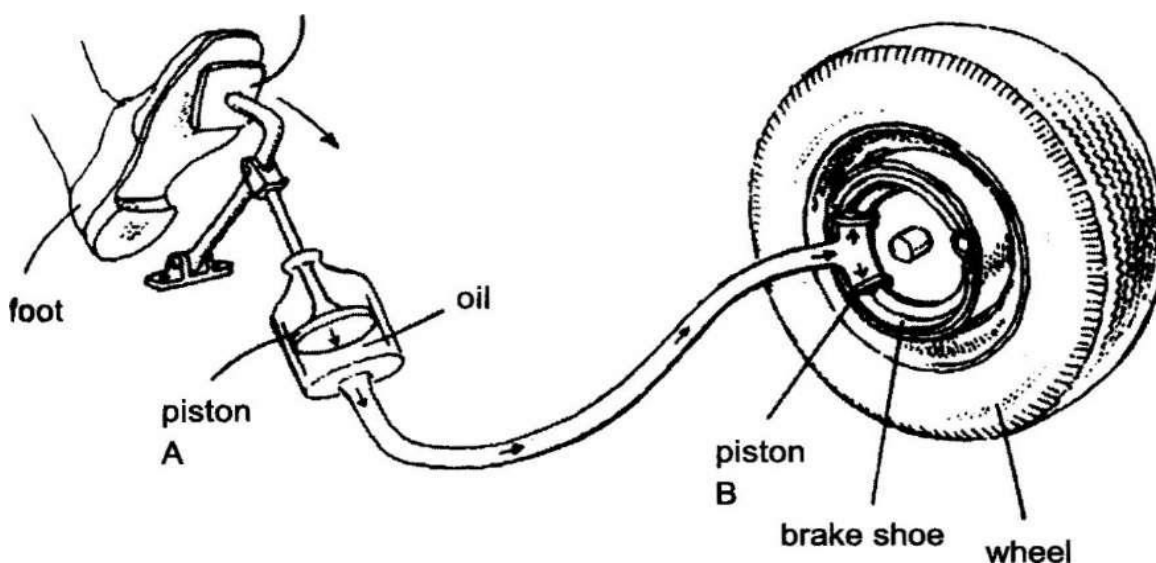
Brakes

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

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

and brake fluid is delivered from 11 to the wheel cylinders. The piston movement causes brake shoes to move and the brakes are applied (the brake shoes are pressed against the brake drums).

The air brake uses compressed air to apply the braking force to the brake shoes. Electric brakes use electromagnets to provide the braking effort against the brake shoes. Formerly brakes were applied only to the two rear wheels, but now all cars are equipped with all-wheels brakes. Today many improvements are being made in brakes.



Picture 3. Brake System

4-mashq. *Quyidagi o'zbekcha atamalarning matndagi ekvivalentlarini toping va yozib oling.*

Tormozlar, yo'lovchilar havfsizligi tormozlarning to'g'ri ishlashiga bog'liq, barabanli tormozlar, diskli tormozlar, kuchaytirgichli tormoz, gidravlik tormoz, bosim ostidagi suyuqlik, tormozlar ishga tushadi, tormoz harakati, tormoz pedalini bosmoq.

5-mashq. *Matndan quyidagi savollarga javoblar toping:*

1. What is the function of the brakes?
2. What types are brakes divided into?
3. What brakes do you know according to their mode of operation?

4. What braking systems are used today?
5. By what are brakes controlled?
6. When are brakes applied?

6-mashq. O'ng tarafdagi o'zbekcha ekvivalentlarning chap tarafdagi inglizcha mos keluvchi nomini toping

- | | |
|--------------------------------------|-----------------------------|
| 1. performance | a. ga bog'liq |
| 2. the safety of passengers | b. barabanli tormozlar |
| 3. to depend upon | c. tormozlar ishga tushadi |
| 4. namely | d. gidravlikali tormozlar |
| 5. drum brakes | e. yo'lovchilar havfsizligi |
| 6. disc brakes | f. ish (harakat) |
| 7. brakes are applied | g. aynan |
| 8. hydraulic assisted brakes | h. kuchlanishli tormozlar |
| 9. power assisted brakes | i. bosim ostida |
| 10. to press down on the brake pedal | j. tormoz pedalini bosmoq |
| 11. under pressure | k. diskli tormozlar |

7-mashq. O'ng tarafdagi mos keluvchi so'zlar bilan chap tomondagi gaplarni to'ldiring.

- | | |
|------------------------------|--|
| 1. Brakes are used for... | a. disc brakes and drum brakes |
| 2. Brakes are one of ... | b. the driver pushes down on the pedal |
| 3. Brakes may be of 2 types: | c. the brake pedal |
| 4. Brakes are applied by | d. stopping the car |
| 5. Brakes are applied when | e. the most important mechanism of the car |

8-mashq. Quyidagi gaplarni ingliz tiliga tarjima qiling.

1. Tormozlar avtomobilning eng asosiy mexanizmlaridan biri hisoblanadi.
2. Ular harakatni sekinlatish yoki avtomobilni to'htatish uchun ishlatiladi.
3. Tormozlar ikki turga ajratish mumkin, aynan: barabanli tormozlar va diskli tormozlarga.
4. Ko'plab avtomobillarda gadravlikali drayv birligi yoki pnevmatik drayv birligi ishlatiladi.
5. Haydovchi tormoz pedalini bosganida tormozlar ishga tushadi.

9-mashq. Dialogni o'qing va quyidagi mashqlarni bajaring.

DIALOGUE

Ahmad: Why are brakes used?

Bobur: They are used to stop or to slow the car.

A.: Well, it is one of the most important mechanisms of the car, isn't it?

B.: Of course, the safety of the passengers depends upon their proper performance.

A.: What types of brakes are used today?

B.: Drum brakes, disk brakes and others.

A.: And in what way are they applied?

B.: They are applied by the brake pedal. When the driver pushes down on the pedal they are applied.

A.: Thank you. It was very nice of you to tell me this information.

B.: Don't mention it. I was glad to serve you.

10-mashq. *Ahmadning gaplarini diktafonga yozib oling va pauzalar bilan Boburning gaplarini qaytaring.*

11-mashq. *Boburning gaplarini diktafonga yozib oling va pauzalar bilan Ahmadning gaplarini qaytaring.*

12-mashq. *Dialogda nima haqida gap ketayotganligini aytib bering.*

13-mashq. *Debriyaj va tormozlar haqida yozilgan gaplarni toping va ularni ikkita ustinga ajratib yozing.*

Two stories — in one

1. Brakes are the most important mechanism of the car. They are used to slow or stop the car where it is necessary.
2. The clutch is a friction device. It connects the engine to the wheels in the gearbox. It is used for freeing the engine from the gearbox, for starting the car and for releasing the engine from the car wheels.
3. It is fixed between the flywheel of the engine and the gearbox.
4. They are divided into 2 types, namely: drum brakes and disc brakes.
5. Most cars of today use hydraulic or power assisted brakes.
6. They may be of 2 plates: friction disc and pressure disc. The friction disc is situated between the flywheel and the pressure disc.

14-mashq. *Lug'atdan foydalangan holda matnni tarjima qiling.*

Troubles in Braking System

The basic troubles of the braking system are as follows:

1. poor braking action;
2. sticking brake shoes which would not return to the initial position after a brake pedal is released;
3. non-uniform braking of the left and the right wheels on a common axle;
4. leakage of brake fluid and air leakage in the hydraulic brake;
5. poor air tightness of the pneumatic brake control.

What to do:

1. Check the action of the foot and hand brakes and leak proofness of the brake hoses connections, components of the hydraulic and pneumatic controls of the brakes, as well as of the vacuum- power system.
2. Inspect the friction linings, wheel-brake springs, master and wheel cylinders of the hydraulic brake and the air compressor of the pneumatic brake using a test manometer to check it.

15-mashq. *Gaplarni ingliz tiliga tarjima qiling*

1. Tormozlar harakatni sekinlatish yoki avtomobilni to'htatish uchun ishlatiladi.
2. Tormoz drayv birligiga bog'liq holda ularni mexanikali, gidravlikali, pnevmatik va elektrik turlarga tasniflashadi.
3. Tormozlar tormoz pedali orqali nazorat qilinadi.
4. Haydovchi tormoz pedalini bosganida tormozlar ishga tushadi (tormoz kolodkalari tormoz barabanlariga eziladi).
5. Pnevmatik tormozlarda tormoz harakatini bajarish uchun siqilgan havodan foydalaniladi.
6. Elektr tormozlarda tormoz harakatini bajarish uchun elektromagnitdan foydalaniladi.
7. Zamonaviy avtomobillarda barcha g'ildiraklar uchun baravar tormozdan foydalaniladi.

VOCABULARY

air brakes - pnevmatik tormozlar

hand - qo'l tormozi

bund brake - tasmali tormoz

hydraulic brakes - gidravlik tormoz

brake drum - tormozli baraban

brake fluid - tormoz suyuqligi

leakage - uzilib qolish

brake pedal - tormoz pedali

left wheel - chap g'ildirak

brake shoe - tormoz kolodkasi

master cylinder - asosiy silindr

brakes are applied - tormozlar ishga tushadi

braking effort - tormoz harakati

mechanical brakes - mexanik tormoz

common axle - umumiy uchi

control - nazorat
poor - kuchsiz
disk brakes - diskli tormozlar
proofness - chidamlilik
drum brakes - barabanli tormoz
release - bo'sh qo'ymoq, uzmoq
electric brakes - elektrik tormozlar
fluid - suyuqlik
foot brake - oyoq tormoz
force (cause) – majburlamoq (sabab bo'lmoq)

Unit Nine

Text: Steering System

Dialogue

1-mashq. So'z va so'z birikmalarini o'qing va ularning o'zbekcha ekvivalentlarini eslab qoling

guide the car - avtomobilni boshqarmoq
means of turning - burish vositasi
front wheels - old g'ildiraklar
steering wheel - rul g'ildiragi
steering column - rul chambaragi
for this purpose - bu maqsad uchun
pivot - sharnir
swing (swang, swung) - burilmoq
steering knuckle arm - burilish tortqisi
tie-rod - ko'ndalang og'irlik
in turn - o'z navbatida
pitman arm - rul soshkasi
rack and pinion assembly - reykali va olti qirrali rul mexanizmi
ball joint - sharli sharnir

leverage - tortqi mexanizm

hose - shlang

steering gear assembly - rul mexanizmi

rack and pinion type - reykali olti qirrali tur (rul mexanizmi)

recirculating ball steering - sharik gaykali rul mexanizmi

worm and sector - vint va sektor

injury - jarohat

steering box - rul mexanizmi karteri

2-mashq. So'zlarni o'qing va ularni o'zbekcha ma'nolari bilan solishtiring.

Column, spindle, system, hydraulic, pump, reservoir, popular, type, effective, effectiveness, effectively, energy, function, to deform, deformation.

3-mashq. Suffiks va prefikslarga e'tibor bergan holda so'zlarni tarjima qiling.

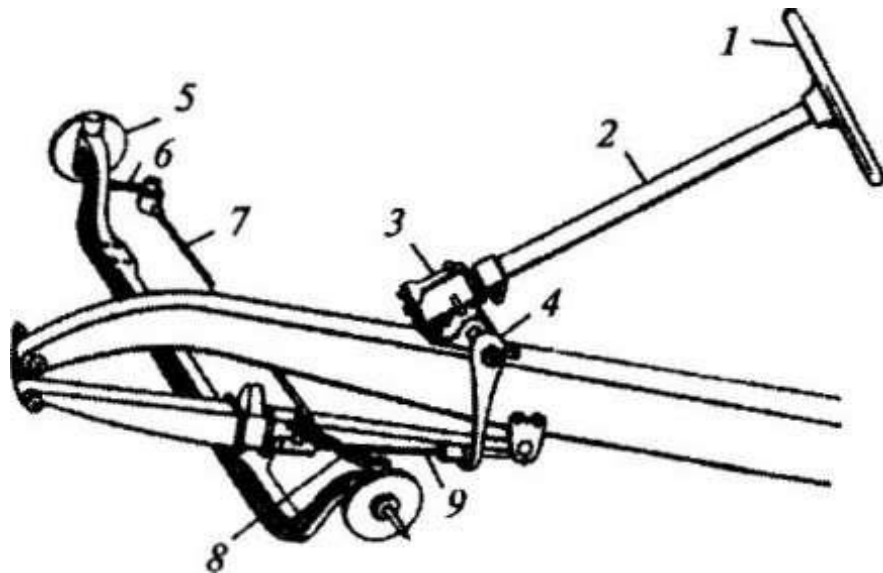
Rotate — rotation, apply — application, move — movement, develop — development, drive — driver, form - reform - deform - deformation, guide — guidance.

TEXT

Steering System

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

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



Puc. 4. Steering System

1 steering wheel - rul g'ildiragi

2 steering column, steering mast - rul chambaragi

3 steering gear - rul mexanizmi

4 steering arm, steering lever, (steering) pitman arm - rul soshkasi

5 steering knuckle - burilish mushti

6 steering knuckle lever, steering knuckle arm - burilish musht tortqisi

7 single tie-rod - bo'linmas ko'ndalang rul tayloqchasi

8 steering knuckle lever, steering knuckle arm - burilish musht tortqisi

9 drag link, steering gear connecting rod, steering drag rod - uzun rul tayloqchasi

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

There are several different manual steering gears in current use, such as the rack and pinion type and the recirculating ball type. The rack and pinion steering gear is widely used. Another manual steering gear which is popular in imported cars is the worm and sector type. The steering wheel and column are the source of injury to the driver, air bags and other devices being developed now to save the life of a driver.

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

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

4-mashq. *Matndan savollarga javoblar toping.*

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

5-mashq. *Gerundiyga alohida e'tibor bergan holda o'zbek tiliga tarjima qiling.*

1. To guide the car it is necessary to have some means of turning the front wheels.
2. The steering wheel in front of the driver is linked by gears and levers to the front wheels for turning the car in the direction the driver wants to go.
3. Without using the steering system the car moves only in the direct position.
4. Manufacturers can use rack and pinion type steering gear without choosing another type because "rack and pinion" type steering is very dependable.
5. Energy-absorbing columns must stop the steering wheel from being pushed to the rear when the front of the car is damaged in an impact.

6-mashq. *Lug'atdan foydalanmasdan matnni tarjima qiling.*

To turn the car you must have some means of turning the front wheels. For this purpose, the steering wheel and steering column are linked to the front wheels. The front wheels are on pivots and can be swung to the left or to the right. When the driver turns the steering wheel and column the front wheels (being on pivots) attached by the steering knuckle arms to the tie rods are also turned.

7-mashq. *Lug'atdan foydalanib matnni tarjima qiling.*

Troubles of Steering Gear Components

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

What to do

1. Check the steering-wheel free play and steering gear performance while the car is running.
2. Check the steering-gear case for oil leakage by visual inspection.
3. Adjust the steering gear. Steering gear of the worm and roller type is adjusted by end playing in the steering worm shaft bearings.

8-mashq. Yuqoridagi gaplarni quyidagisidan mosini qo'yib to'ldiring.

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

9-mashq. Gaplarni ingliz tiliga tarjima qiling.

1. Avtomobilni boshqarish uchun rul boshqaruvi sistemasi zarur.
2. Rul boshqaruvi quyidagialrni o'z ichiga oladi: rul g'ildiragi va rul chambaragi, tishli bog'lanish, rul soshkasi, burilish mushti tortqisi va sharnirli bog'lanish, tortqilar va ko'ndalang tayoqchalar.

3. Rul mexanizmining har xil turlari mavjud, aynan reykali olti qirrali tur, sharik gaykali mexanizm, vint va sektorli mexanizm.
4. Haydovchi rulni chap va o'ng tomonga burganida, rul mexanizmi rul soshkasini chap va o'nga burilishga majburlaydi.
5. Bu harakat ko'ndalang tayoqchalar orqali burilish mushti tortqisiga va g'ildiraklarga uzatiladi va ularni chapga va o'nga burilishga majburlaydi.

10-mashq. Dialogni o'qing va quyidagi mashqlarni bajaring.

DIALOGUE

Sarvar: Look here. I have some troubles with the steering system.

Vali: What troubles?

S.: The first is excessive free play of the steering wheel.

V.: You should check free play of the steering wheel and steering gear performance.

S.: The second problem is oil leakage from the steering gear case.

V.: Check the steering gear case for oil leakage visually. Anything else?

S.: Sure. It is disadjustment of the steering gear. And I don't know what to do.

V.: You see; in this case it is better for you to go to a repairing shop. Good specialists should do this job.

S.: Thank you very much.

V.: Not at all.

NOTES:

look here - quloq sol

troubles - nosozliklar

excessive free play - haddan ziyod yurish

check - tekshirmoq

performance - ish, hususiyatlar

steering gear case - uzatmalar qutisi karteri

anything else - har qanday boshqa narsa

in this case - bunday holatda

11-mashq. *Sarvarning gaplarini diktafonga yozib oling va pauzalar bilan Valining gaplarini qaytaring.*

12-mashq. *Valining gaplarini diktafonga yozib oling va pauzalar bilan Sarvarning gaplarini qaytaring.*

13-mashq. *Dialogni juft bo'lib ayting.*

VOCABULARY

absorb - yutmoq

air bag - havfsizlik yostig'i

bending - egilish

excessive - haddan ziyod

for this purpose - ushbu maqsadda

guide the car - avtomobilni boshqarmoq

hydraulic pump - gidravlik nasos

leakage - oqib chiqish

lever - tortqi

leverage - torqili mexanizm

linkage - bog'lanish

means of turning - burilish vositasi

pitman arm - rul soshkasi

pitman shaft - rul vali

pivot - sharnir

assembly - reykali-olti qirrali mexanizm

rack and pinion type steering gear - reykali-olti qirrali mexanizm

recirculating ball type steering gear - sharik gaykali rul mexanizmi

steering box - rul mexanizmi karteri

steering column - rul chambaragi

steering knuckle arm - burilish mushti tortqisi

steering wheel - rul g'ildiragi

swing (swang, swung) - burilmoq

tie-rod - ko'ndalang tayoqcha

worm and sector type - vint va sektorli tur

Unit Ten

Text: Using Computer

Dialogue

1-mashq. So'z va so'z birikmalarini o'qing va ularning o'zbekcha ekvivalentlarini eslab qoling.

invent - kashf qilmoq

a breaker point ignition - vaqti-vaqti bilan yonish

advanced - ilg'or

fire the spark plug - o't oldirish svechasini yondirmoq

meet emission control levels - zararli tarkib va egzoz gazi sath chegarasi talablariga javob bermoq

gas mileage - gallon yoqilg'iga yurgan milya

smooth operation - silliq harakat

provide - ta'minlamoq

onboard computer system - bort kompyuteri

hardware - kompyuterning apparat qismi

software - dastur ta'minoti

CPU - Central Processing Unit - markaziy prosessor

integrated circuit - integral sxema

semiconductor - yarim o'tkazgich

silicon - silikon

until - gacha, guncha

specific sequence - maxsus ketma-ketlik

permanent memory - vaqtinchalik xotira

ROM - read only memory - doimiy xotira

RAM - random access

memory - operativ xotira

PROM - programmable read only memory - dasturlashgan doimiy xotira

trouble code - muammoli kod

expensive - qimmatbaxo

adaptive memory - moslashgan xotira

2-mashq. So'zlarni o'qing va ularni o'zbekcha ma'nolari bilan solishtiring.

transform, battery, voltage, regulation, system, computer, microprocessor, transistor, diode, chip, material, electricity, magnetic, program, defective, limit, compensate, variation, code

3-mashq. Suffiks va prefikslarga e'tibor bergan holda so'zlarni tarjima qiling.

ignite — **ignition**, transform — **transformation**, regulate — **regulation**, break — **breaker**, conduct — **conductor**, process — **processor**, specify - **specific**, adapt — **adapter** — **adaptive**, expense - **expensive**, adjust — **adjustment**, connect — **disconnect**, learn - **relearn**.

TEXT

Using Computer

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

The computer hardware on an automobile uses a Central Processing Unit (CPU), which, when made in an integrated circuit, is referred to as a microprocessor. The

integrated circuit (IC) combines transistors, diodes, and capacitors, which are placed on a tiny chip of semiconductor material that is smaller and thinner than an eraser on a pencil. The material used most of the time is silicon. Silicon, like any semiconductor, does not conduct electricity until either voltage, a magnetic field, heat, or light is directed to the semiconductor. A program instructs the microprocessor what to do.

The computer software on a car carries a program. The program tells the computer what to do, and when to do it in a specific sequence. The program is stored in a permanent memory, which is referred to as Read Only Memory (ROM). The computer knows only what is placed in its memory.

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

4-mashq. *Matndan savollarga javob toping.*

1. How many components has the computer on modern cars? What are they?
2. How do we call the computer hardware on the automobile?
3. What does an integrated circuit combine?
4. What material is used in the integrated circuit? Why?
5. What does the computer software do?

6. Why is the computer used on board the car?
7. What does the program tell to the computer?
8. Where is the program stored?
9. What is ROM?
10. What is PROM?
11. What is RAM?

5-mashq. *Ingliz tiliga tarjima qiling.*

1. Ko'p zamonaviy avtomobillar avtomobil yaxshiroq ishlashi uchun bort kompyuter sistemalari bilan bilan jihozlangan.
2. Bunday kompyuter dasturi faqat ikkita xotiraga qurilmasiga ega: doimiy xotira va operativ xotira.
3. Kompyuter dasturi kompyuterga nima qilish kerakligi va uni qachon kerakli ketma ketlikda bajarish kerakligini aytib turadi.
4. Dastur kompyuterning doimiy xotirasida saqlanadi.
5. Mikroprosessor o'zida doimiy va operativ xotirani saqlaydi.
6. Ba'zi kompyuterlar eslab qolish qobiliyatiga ega. Bu moslashgan xotiraga taaluqli.

6-mashq. *Dialogni o'qing va quyidagi mashqlarni bajaring.*

DIALOGUE

Anvar: What is the purpose of using computers on board the car?

Temur: You see. As I know computer is used to advance the engine operation as well as the performance of other units.

A.: What components does the on-board computer consist of?

T.: It consists of two components. One is the hardware and the other is the software.

A.: What is hardware?

T.: The computer hardware uses a Central Processing Unit (CPU) which is referred to as a microprocessor.

A.: What is software?

T.: The computer software on a car carries a program. The program tells the computer what to do and when to do it.

A.: And where is the program stored?

T.: It is stored in a permanent memory which is called Read Only Memory (ROM).

A.: And what is Programmable Read Only Memory (PROM)? What is the difference between ROM and PROM?

T.: In case the memory becomes defective PROM can be readily removed and replaced, while ROM cannot.

A.: And what is RAM?

T.: RAM is Random Access Memory (main memory), which can be accessed without going through a specific sequence. The technician interfaces with RAM whenever trouble codes are accessed.

A.: Thanks a lot for your explanation.

T.: You are welcome. See you later.

A.: Goodbye.

7-mashq. *Anvarning gaplarini diktafonga yozib oling va pauzalar bilan Temurning gaplarini qaytaring.*

8-mashq. *Temurning gaplarini diktafonga yozib oling va pauzalar bilan Anvarning gaplarini qaytaring.*

9-mashq. *Dialogni juft bo'lib ayting.*

VOCABULARY

access — 1. Yo'l qo'yimoq 2. kirish

adaptive memory – moslashgan xotira

adjustment – moshlashtirish

breaker – uzuvchi

breaker point ignition — vaqti-vaqti bilan yonish

capacitor — kondensator
carry a program — dasturni bajarmoq
defective — nuqsonli
due to — ...ga ko'ra
engine wear — dvigatel yurgizish
eraser — o'chirg'ich
expensive — qimmatbaxo
fall — yiqilmoq
fire the spark plug – o't oldirish svechasini yondirmoq
gas mileage — gallon yoqilg'iga yurgan milya
hardware — kompyuterning dastur qismi
heat — issiqlik
however — biroq
ignition – o't olish
integrated circuit – integral sxema
invent — kashf qilmoq
light — yorug'lik (faralar)
meet emission control levels — zararli tarkib va egzoz gazi sath chegarasi talablariga javob bermoq
on-board computer system – bort kompyuteri
permanent memory — vaqtinchalik xotira
PROM - Programmable Read Only Memory - dasturlashgan doimiy xotira
RAM — Random Access Memory — operativ xotira
ROM - Read Only Memory - doimiy xotira
semiconductor — yarimo'tkazgich
Central Processing Unit – markaziy processor
silicon — silikon
since — o'shandan beri
spark plugs — yoritkichlar
specific sequence – maxsus ketma ketlik

the ability to learn — o'rganish qobiliyati

tiny chip — mitti chip

trouble codes — muammoli kodlar

PART II

1-mashq. 5-rasmda quyida keltirilgan so'zlarning joylashgan joyini toping va ko'rsatilgan raqam ostida daftarga yozing. Keyin ularni inglizcha nomlarini yozing.

Dvigatel, debriyaj, uzatish qutisi, kardanli uzatma, orqa aks, bosh uzatma, differentsial, osmalar (ressorlar), g'ildiraklar, rul boshqaruv tizimi, tormoz.

Engine, clutch, gearbox, propeller shaft, rear axle, final drive, differential, springs, wheels, steering system, brakes.

2-mashq. Dialogni o'qing va 5-rasmga tayangan xolda uni ijro eting.

Teacher: Can you tell me English equivalents to: dvigatel, debriyaj, uzatish qutisi, tormoz va qo'lda boshqarish?

Student: Yes, I can. They are the engine, clutch, gearbox, brakes and steering system.

T: Do you know what main units the automobile consists of?

S: Yes, I do. They are the chassis, the body and the engine.

T: What is the source of power?

S: The engine is. It makes the car wheels rotate and the car move.

T: What unit of the car carries the power to the wheels?

S: The transmission does.

T: What mechanisms does the transmission consist of?

S: It consists of the clutch, gearbox, propeller shaft, rear axle, final drive and differential. It also includes brakes and steering system.

T: And what is the clutch used for?

S: It is used for disengaging the engine from the car wheels.

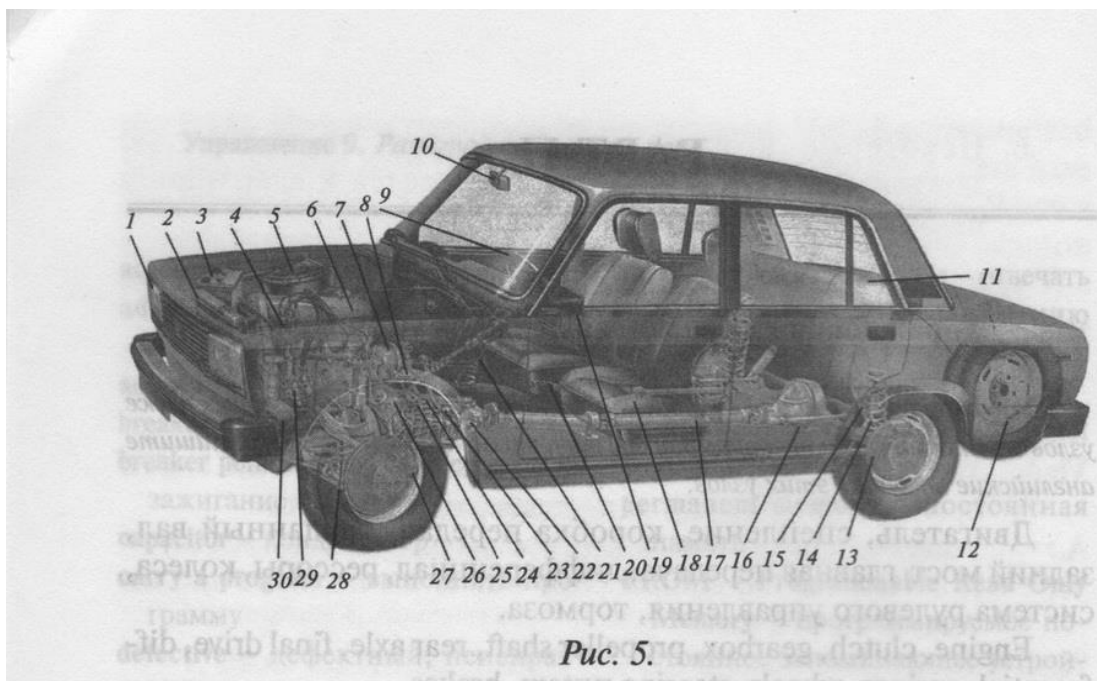
T: What is the function of the brakes?

S: They are necessary to slow or stop the car.

T: And what about the steering system?

S: It is used to turn the car in the direction the driver wants to go.

T: That is right. You know the subject very well.



1. chiroqlar, burilish chiroqlari bilan birga
2. sovutish tizimi radiatori
3. akkumulyator batareyasi
4. o't oldirish tizimi
5. havo filtri
6. dvigatel
7. tormoz tizimi (vakuum kuchaytirgichli)
8. ilashish muftasi
9. rul boshqarmasi
10. orqani ko'rsatuvchi ichki oyna
11. orqa o'rindiq
12. zahira g'ildirak
13. orqa tormoz
14. ketingi osma
15. ketingi osma amortizatori
16. ketingi ko'prik
17. kardan uzatma
18. old o'rindiq

19. orqani ko'rsatuvchi tashqi oyna
20. qo'l tormozi
21. uzatmalar o'zgartirish dastagi;
22. uzatmalar qutisi
23. ilashish muftasi tepkisi
24. tormoz tepkisi
25. gaz tepkisi
26. rul boshqarmasi
27. oldingi tormoz
28. oldingi osma amortizatori
29. yonilg'i pompasi
30. moy filtri

1. cornering lamp;
2. cooling system radiator;
3. accumulator battery;
4. ignition distributor;
5. air filter;
6. engine;
7. vacuum-power with master cylinder of hydraulic drive brakes;
8. master cylinder of hydraulic drive of clutch disengagement;
9. steering wheel;
10. inside (interior) mirror;
11. back seat;
12. spare wheel;
13. rear wheel brakes;
14. rear suspension spring;
15. rear suspension shock absorber;
16. rear axle;
17. cardan shaft;

18. front seat;
19. outside mirror;
20. parking brake lever;
21. gear change lever;
22. gearbox;
23. clutch pedal;
24. brake pedal;
25. accelerator pedal;
26. steering mechanism;
27. front wheel brake;
28. front suspension spring with shock absorber;
29. fuel pump;
30. oil filter.

3-mashq. *Rasmga qarab va quyidagi sarlavhalardan foydalanib, rus va ingliz tilidagi mashina birliklari, agregatlari va mexanizmlari nomlarini yozing.*

4-mashq. *Quyida keltirilgan so'z va so'z birikmalaridan foydalanib, gaplarni to'ldiring.*

1. The automobile is made up of....
2. The engine is
3. The chassis consists of
4. The transmission carries the power from
5. The transmission consists of....
6. The body has ...
 - a. engine, chassis, body.
 - b. hood, fenders and accessories.
 - c. the engine to the wheels.
 - d. clutch, gearbox, propeller shaft, rear axle, final drive and differential.
 - e. the source of power.

f. transmission and running gear (frame, wheels and springs).

5-mashq. Matnni o'qing, keyin rasmga qarab, quyidagi savollarga javob bering.

The automobile is made up of three basic parts: the engine, the body and the chassis. The engine is the source of power and makes the car move.

The chassis consists of the transmission and running gear (frame, springs and wheels). The transmission carries the power from the engine to the wheels. It consists of the clutch, gearbox, propeller shaft, rear axle, final drive and differential. The transmission also includes the steering system and brakes.

The body has the hood, fenders, the heater and so on.

1. What main components is the automobile made up of?
2. What is the source of power?
3. What units does the chassis include?
4. What duty is performed by the frame?
5. What does the transmission do?
6. What mechanisms does the transmission consist of?
7. What is the function of the steering system?
8. Why are brakes necessary?
9. What is the function of the clutch?
10. What is the function of the gearbox?
11. What types of gearboxes do you know?
12. What is the function of a differential?
13. What purposes do brakes serve?
14. What parts has the body?
15. How is the car body attached to the frame?

6-mashq. Matndan quyidagi jummalarning ekvivalentlarini toping.

1. Avtomobil uchta asosiy qismdan iborat: dvigatel, shassi va kuzov.
2. Dvigatel - energiya manbai.
3. Shassi transmissiya va yurish qismidan iborat.

4. Transmissiya dvigateldan avtomobil g'ildiraklariga energiya uzatadi.
5. U debriyaj, uzatmalar qutisi, kardan val, ketingi ko'prik, bosh uzatma va differentsialdan iborat.
6. Kuzovning kapoti, kanotlari, isitgichi va boshqalar mavjud.

TARJIMA MASHQLARI

Mikrotekstlar

Mikrotekstlarni o'zbek tiliga tarjima qiling. Belgilangan grammatik tuzilmalarga e'tibor bering.

TEXT № 1

The automobile is known to be made up of three basic parts: the engine, the body and chassis, **the engine being the source of power. We know the body to include** the hood and fenders and accessories. The body **should** provide protection to the passengers from wind, cold and rain. Thus **to shape** a car means **to do** it in such a way that it offers small resistance to the air.

Brakes are necessary **for stopping** the car.

Most braking systems **used today** are hydraulic.

TEXT № 2

The engine is known to be attached to the frame in three or four points. Noise and vibrations are inherent in engine operations. **To prevent** this noise from passing to the frame, the engine **should** be insulated from the frame by washers. **We know the frame to provide** support for engine, body and power train, **the body providing protection to the passengers from wind and rain.** The frame is made of channel sections **welded together.**

TEXT № 3

We know the clutch to consist of two plates: the driven plate and the pressure plate. **The driven plate is known to be situated** between the flywheel and

the pressure plate. The clutch **used for engagement the engine and the gearbox** is incorporated within the flywheel housing.

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

TEXT № 4

The frame is known to be the structural centre of the car. It is made of channel sections **welded together, cross-members providing support Tor the engine and wheels. We know the frame to be rigid.** Noise and vibrations are inherent in engine operation. To prevent this noise and vibrations **from passing** to the frame and to the passengers of the car, the engine **should be** insulated from the frame by rubber washers.

TEXT № 5

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

TEXT № 6

We know the power train to include the clutch, gearbox, propeller shaft, rear axle, final drive and differential. The clutch is used **for engaging** the engine with the gearbox, **the gearbox being located between (he clutch and the propeller shaft. The clutch is known to consist** of two plates **incorporated** within the flywheel housing.

To shape the car means **to make it** in such manner that it offers small resistance to the air.

TEXT № 7

We know the engine to be the source of power. In some types of engines, a V-type fan belt is utilized to drive the fan, **the same belt being used for driving** the generator pulley and the water pump. **The engine is known to comprise** the fuel, cooling, electric and lubricating systems. **It should be** noted that the gasoline pump is operated from the cam-shaft by the engine, **called also the power plant. To guide** the car means **to turn** it in one direction or the other.

TEXT № 8

Brakes are known to be one of the most important mechanisms of the car. They are necessary **for stopping** the car. Most braking systems **used today** are hydraulic, **many vehicles using power** brakes. **We know the brakes to be applied** to four wheels.

In order to stop the car, the driver **should** press down on the pedal. When the pedal is pressed down the brakes are applied and the car is stopped.

TEXT № 9

In order to drive the car, the driver should have some means of **turning** the front wheels. **We know the steering wheel to be located** at the front of the driver. It is linked by gears and levers to the front wheels, **these wheels being on pivots. The front wheels are known to swing** to the left or right when the steering wheel is turned in one direction or the other. The front wheels are attached to the rods, the rods are, in turn, attached to the pitman arm.

TEXT № 10

We know the automobile to be made up of three basic parts: the engine, the chassis and the body. The body **should** provide protection to the passengers of the car. **The chassis is known to consist** of a power train, frame with axles and wheels. The chassis includes the brake and the steering systems, **the brakes being the most**

important mechanism of the car. To provide a satisfactory smooth ride, an additional device, **called a shock absorber**, is used with each spring.

TEXT № 11

Brakes are known to be used for stopping the car. Most braking systems **used today** are hydraulic, **many vehicles having power brakes. To stop the car**, the driver **should** apply the brakes. **We know the brakes to have been applied** to the front wheels. At present the brakes are applied to all four wheels. The brakes are controlled by a pedal. When the driver presses down on the pedal the brakes are applied and the car is stopped.

TEXT № 12

The clutch is known to be the part of the power train. Besides the clutch, the power train also includes the gearbox, propeller shaft, rear axle, final drive, differential and axle shafts. The gearbox **named transmission** is located between the clutch and the propeller shaft. **We know the clutch to consist** of the driven plate and the pressure plate, **the driven plate having fabric linings on each side. To connect** the engine with the gearbox, the driver **should** engage the clutch.

TEXT № 13

The frame is considered to be the structural centre of any vehicle, as it **should** provide support for the engine, body and power train members. The frame is made of sections **welded together**.

We know the frame to be reinforced by cross-members. **To provide** support for the engine and wheels, the frame should be rigid and strong. **Noise and vibrations being inherent in engine operation**, the engine is insulated from the frame by rubber washers.

TEXT №14

The automobile is known to consist of the engine, the body and the chassis, **the engine being the source of power.** The body has a hood and ladders and accessories: heater, lights and radio. It **should** provide protection to the passengers from wind and rain. **The chassis is known to include the power train, frame and wheels.**

Streamlining is an important factor. **To streamline** a car means **to shape** it in such a manner that it offers small resistance to the air.

TEXT №15

We know the steering system to be one of the most important mechanisms of the car. **The steering system is known to consist of** a steering wheel, gears, tie-rod, pitman arm and other units. The steering wheel is attached to the front wheels by gears and levers, **the front wheels being on pivots.** In order **to turn** the car in one direction or the other, the driver **should** turn the steering wheel. The steering wheel **connected to the front wheels** turns the car.

PART III

Qo'shimcha o'qish materiallari

SECTION 1

- 1. Matnni o'qing va matn oldiga qo'yilgan savollarga javob toping.*
- 2. Matnni qisqacha aytib bering.*

QUESTIONS

1. What Russian experts in mechanics must be remembered in the history of automobile engineering?
2. Who was the first Russian inventor of the automobile?
3. What did Mamin designed?
4. What did Blinov constructed?

TEXT

From the History of Russian Automobile Engineering

The automobile industry in our country has been developed since 1916. Before that time Russia had no automobile industry at all, technical schools had no departments to train specialists in automobile engineering.

But in the history of the automobile such names as Shamshurenkov, Blinov, Mamin and other Russian experts in mechanics must be remembered.

The first automobile built by Shamshurenkov, a Russian inventor, was put into motion by the pedalling of the driver himself.

Blinov designed and constructed tractor driven by steam engine. Mamin was one of the pioneers in Russian internal combustion engines.

Today Russian automobiles are engineered and built in such a manner that they are able to withstand heavy loads for long periods of operation.

The modern automobile is much more than a means of riding from one place to another. The passenger's safety and comfort must be considered as much as the car's reliable performance and ability to travel on the highways.

The modern automobile must have a steel body and a steel roof and this roof must be insulated against the summer's heat and winter's (cold). Ventilation is also of great importance. The comfort and convenience of the driver must be taken into consideration too. The automobile must have a heater with special defrosting devices which insure clear vision to the driver.

The automobile must have great power for riding, have dependable clutch and brakes, have good riding qualities, good lights, dependable starting and ignition systems, low fuel consumption, as well as long service life.

SECTION 2

1. Matnni o'qing va matn uchun sarlavha tanlang.

2. Matnning mazmunini o'zbek yoki ingliz tilida qisqacha aytib bering.

TEXT

Benz Karl (1844-1929) was a German inventor of the automobile, who devoted his life to making a horseless vehicle. When Benz's three-wheeled engine-driven machine (the first "car") appeared on the streets in 1885, people couldn't believe that it moved without the aid of horses. It was a great triumph to him because Benz built a new engine that was lighter and more powerful than any other. He put it onto a chassis and got power from the engine to the wheels. Benz's first car was a great achievement for him. Everything — the engine, fuel transmission, controls — had been developed and designed by him. The wheels were driven by means of a chain, and there were two speeds.

In his early days the speed limits were 12 kilometers an hour outside the city, six — inside. Benz realized that he would never be able to improve his cars if this rule were not changed. He thought up a plan. He invited the Minister to ride in his car and agreed with a milkman that the latter would wait with his horse for them on a certain place. When Benz, with the Minister in his car, passed the milkman, the latter started off, passed the car at a good speed and laughed at them. The plan worked perfectly. The Minister ordered to go faster. But Benz referred to speed limit. "Never mind", said the Minister. Thus Benz won the day.

SECTION 3

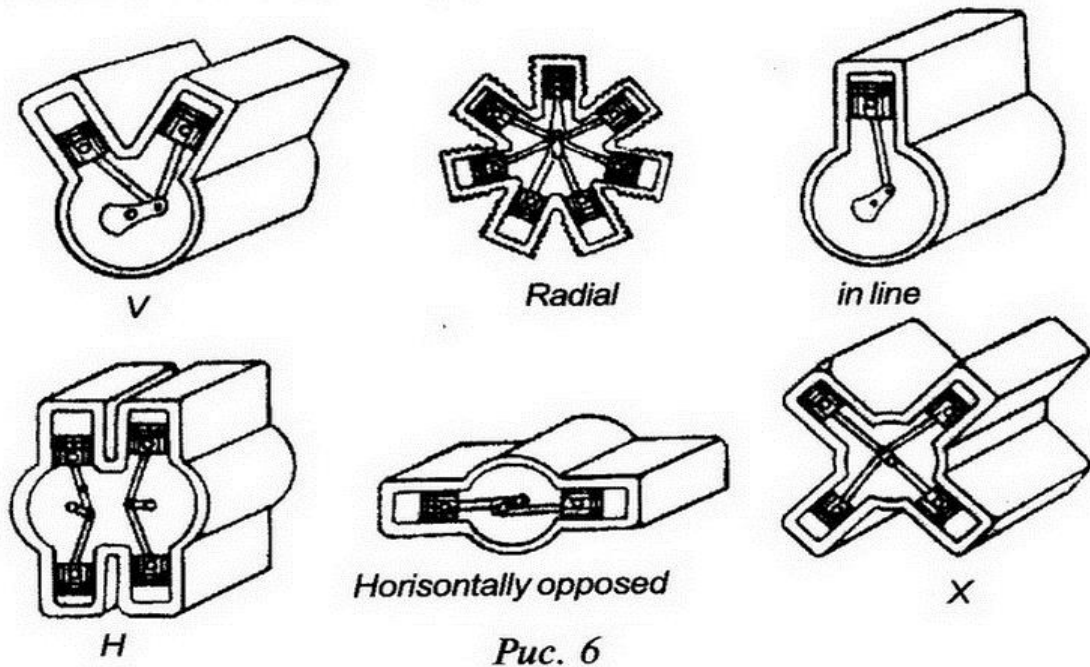
- 1. 1-matnni o'qing.*
- 2. Matnda dvigatel tuzilishi haqida gapiralayotgan xatboshini toping.*
- 3. Matndan dizel dvigatellarining afzalliklari haqida aytilayotgan jummalarni topib, ularni tarjima qiling.*
- 4. Matnni qisqacha aytib bering.*

TEXT 1

Internal Combustion Engines

The first internal combustion engine light enough in weight was the gasoline engine, invented by a German named Otto.

At the same time Dr. Rudolph Diesel was working on the diesel engine. The Diesel engine is similar to the gasoline engine in many ways. There are many variations in engine arrangements, but the basic parts of most 4-stroke cycle engines are similar.



In the in-line arrangement the cylinders are lined up in a single row. The V-type engine is called so as the cylinders form 2 rows or "banks", set at an angle to each other to form the letter V.

The diesel engine gets its power from the expansion of burning gases. The diesel engine depends on the heat of compression for ignition of the fuel.

Liquid fuel that contains more heat energy than gasoline is diesel oil.

Diesel oil is slower burning, but it produces more power. Diesel engines also must be heavier than gasoline engines, but they are more efficient when working under heavy loads at low speeds.

The advantages of the diesel over the gasoline engine are as follows:

- a) more economic operation;
- b) higher compression ratio;
- c) reduced maintenance costs;
- d) good pulling power.

1. 2-matnni o'qing va savollarga javob bering:

a. Benzinli dvigatellarning afzalliklari qanday?

b. Dizel dvigatellarning afzalliklari qanday?

2. Matnning mazmunini o'zbek tilida qisqacha bayon qiling.

TEXT 2

Engines

The two most common types of engines for cars are the petrol engine and diesel engine.

Petrol engines are usually lighter and smaller than diesel engines. This makes them cheaper, and this is why most cars use petrol engines. Petrol engines are also less noisy than diesel engines. They usually go faster. On the other hand, diesel engines use less fuel than petrol engines, and this is why trucks use them. They are also safer than petrol engines, because there is less danger of fire.

There are two main types of petrol engine - 4-stroke and 2-stroke. All cars use 4-stroke engines. But most motorbikes use 2-stroke engines. They are lighter and smaller than 4-stroke engines, and are therefore cheaper.

SECTION 4

1. Matnni o'qing va matndan keyingi savollarga javob bering.

2. Avtomobilning asosiy xususiyatlarini sanab o'ting.

TEXT

The "UAS" Model

This model designed as "go anywhere" vehicle is built by the Ulyanovsk Plant. It gives high performance under all conditions. All the four wheels of this model are driving ones. Roadless is easily overcome at medium speeds. Stable suspension gives great riding comfort even under off-road conditions.

To protect passengers and the driver from sun rays, winds and rains the UAS is equipped with a weather proof hood. In cold weather an effective heater system may be switched on.

This model possesses excellent road stability and is easy in control. Well-balanced, synchromesh gearbox, effective brakes provide additional conveniences for the driver. Maintenance of the car is extremely simple, as all points, which are frequently lubricated and adjusted are easily accessible. The body is an all-metal, two-door, eight-seater construction. The clutch is of a single dry plate type.

The transmission has three forward and one reverse speeds. The lower gear can be put in only when the front axle is engaged.

1. At what plant is the model built?
2. Does it give high performance under all conditions?
3. At what speeds is roadless overcome?
4. What is done to protect passengers from wind and rain?
5. What may be switched on in cold weather?
6. Why is maintenance of the car extremely simple?
7. How many speeds has the transmission?

SECTION 5

- 1. Matnni o'qing va sarlavha tanlang.*
- 2. Matndan tarqatuvchi uzatmalar qutisi haqida aytilayotgan gaplarni toping.*
- 3. Ushbu avtomobil modelida qanday tormoz tizimlari ishlatiladi?*

TEXT

The new vehicle was designed and built by the General Engineering Division. A conventional chassis, rigid axles and leaf spring suspension are used in this car. However, the frame has been modified to improve the angle of turning. The rear suspension incorporates rubber spring washers. There are telescopic shock

absorbers all around. This car has four-wheel drive; it is fitted with larger tires. The wheels are driven through a four-speed gearbox, third and the top gears being synchromesh. The car is also fitted with a transfer gearbox with a 1.148:1 high ratio and a 2.4:1 low ratio. This gives the car eight forward and two reverse speeds. Both front and rear axles incorporate spiral bevel differentials. Brakes are of drum type with servo assistance and the steering system is modified. The car is powered by a six-cylinder engine, which resulted in a maximum average speed of 55 miles per hour. It should be noted that ventilation is provided by means of a standard air system.

SECTION 6

1. Matnni o'qing.

2. Sizning fikringizcha, avtomobilning asosiy xususiyatlarini ularning ahamiyati bo'yicha tartiblab bering.

TEXT

What Motor-Car Buyers Want

In answer to a questionnaire sent out by the General Motors Corporation relating to the general characteristics considered most important in cars, 211000 replies were received. According to the Automobile Daily News, car users specified the following characteristics, listed in order of their importance:

1. reliability
2. operating economy
3. safety
4. appearance
5. comfort
6. ease of control
7. smoothness

8. low first cost
9. pick-up
10. speed.

It is very significant that pick-up and speed, frequently stressed in automobile advertising, are, according to the answers of this questionnaire, considered of least importance by the car buyers.

SECTION 7

- 1. Matnni o'qing.*
- 2. Matndan uzatmalar qutisini o'zgartirish usuli to'g'risidagi gapni topib, tarjima qiling.*
- 3. Sinxron uzatmaning asosiy kamchiligi nimada? Ushbu jumalani matndan toping va tarjima qiling.*
- 4. Matnning mazmunini o'zbek tilida qisqacha bayon qiling.*

TEXT

Automobile Synchronesh Transmissions

This automated transmission provides effective two-pedal motoring, with the standard four-speed all synchronesh gearbox, a hydraulically operated diaphragm spring clutch and a low ratio torque converter. A microswitch in the gear lever knob initiates clutch disengagement when the knob is touched, thus making normal gear changes despite the absence of the clutch pedal. Although the torque converter can start in any gear, it is desirable that the converter should start in the first or second gear from the point of view of acceleration requirements. Any gear ratio may be kept in engagement to suit the driver's wishes and road and traffic conditions.

This transmission makes driving in the city traffic easier and has good characteristics even when the car is moving on snow and ice. The only drawback of this synchronesh transmission is its cost.

SECTION 8

- 1. Matnni o'qing.*
- 2. Matnni yozma ravishda o'zbek tiliga tarjima qiling.*
- 3. Ushbu tormoz tizimi qaysi toifadagi avtomobillarga mo'ljallangan (matndan toping)?*

TEXT

Super Stoppers

Disk and drum brakes are conventional ones. Improved hydraulic systems and anti-lock devices are designed to make brakes more effective. But they don't improve the brakes themselves.

Recently a clutch-type brake of extreming simplicity was created. Most brakes are cooled by air, like an air-cooled engine. But like a car engine they could be liquid-cooled, a water tank cools the brakes with its water when the brakes reach a certain temperature. That method should be used only for sport cars, but not for conventional passenger-cars.

The inventor became interested in liquid cooling of brakes and developed several systems.

In passenger cars the engine's water and radiator were used to cool (he brakes. The idea is that both the engine and the brakes will not be generating peak heat at the same time.

Radar-controlled brakes are being studied now. In such cars radar is used for measuring the distance to the next car, printing that information into a simple computer, which points the accelerator, and brakes what to do.

SECTION 9

Matnni o'qing va quyidagi savollarga javob bering:

- a. What elements does the electric gear change control system consist of?*
- b. Where is the system used?*
- c. What does the control system provide the driver?*

TEXT

Electric Gear Change Control System

This electric gear change control system is for large vehicles. It consists of three basic elements: a controller located near the driver, an electric cable to the transmission, and a solenoid actuated valve on the transmission that receives the signal from the driver to change gear selection.

The system is used in large trucks where the transmission is mounted far from the engine. The control system provides the driver a high degree of operation flexibility. The system also incorporates an inhibitor which prevents accidental down changing at high vehicle speed.

SECTION 10

- 1. Matnni mazmunini umumiy tushunish maqsadi bilan o'qing.*
- 2. Avtomobilning asosiy tarkibiy qismlariga tavsif bering.*
- 3. Matnning mazmunini o'zbek tilida qisqacha bayon qiling.*

TEXT

Lotus Elan Car

Lotus Elan is a car, capable of carrying four persons and their luggage at great speed and in comfort. It is the finest sport car.

In construction, it is very similar to the two-seater Elan car, with a steel chassis, at the front of which the 16-litre engine is installed and at the rear the differential is located. The body is a glass-fiber unit, carrying no chassis stresses. The whole car is just 2 ft longer and 10 inch wider than the previous version.

With such a light and aerodynamic car the driver can reach maximum 6500 rpm easily. Despite its high power output and two carburettors the engine always started easily. An engine is a smooth unit with a high torque.

SECTION 11

- 1. 1-matnni mazmunini umumiy tushunish maqsadi bilan o'qing.*
- 2. Matnni lug'at yordamida tarjima qiling.*

TEXT 1

Autotest of Volvo

Since previous tests of the car the engine capacity has been increased from 1.778 to 1.986 c.c.

Earlier Volvos had some real difference in appearance but the current series have international look, but with considerably more space for passengers and baggage than the earlier models. Technically, they are conventional, with the 2-litre 4-cylinder engine mounted in front, and rear-wheels drive through a 4-speed gearbox and coil-spring live axle.

Brakes are servo-assisted discs, the rear brakes incorporating small drums for the parking brake. Twin hydraulic circuits unite both front brakes to one rear brake, so that when one circuit fails only one brake is lost.

The synchromesh gearbox is satisfactory. In average conditions the car rides well.

- 2-matnni o'qing va uni lug'atsiz tarjima qiling.*

TEXT 2

Finding a Fault in the Car

If your car doesn't start in the morning, you should check three things first: the battery, the fuel level and the spark plugs. It is easy to repair these faults. If the battery is flat, you should recharge it. If this doesn't work, you should replace it. If the petrol tank is empty, fill it up. If the spark plugs are dirty, clean them, and if the gap in a spark plug is too narrow or too wide, adjust it to the correct width.

SECTION 12

- 1. Matnni mazmunini umumiy tushunish maqsadi bilan o'qing.*
- 2. Matndan keyin qo'yilgan savollarga javob bering.*

TEXT

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

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

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

Compression: During the compression stroke all valves are closed, and piston moves up in the cylinder compressing the air. As the air molecules are compressed the air temperature increases dramatically to about 1000° F (537° C). As the piston nears the top of its stroke, fuel is injected into the combustion chamber on top of the piston. The fuel mixes with the hot compressed air and causes combustion.

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

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

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

Fuel economy

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

Reliability

Diesel engines have no electrical ignition system to fail or be maintained. They are built with heavy-duty parts to withstand the higher compression ratios and to operate for long periods with minimum breakdown. In on-highway trucks for instance, diesel engines have a projected service life of many hundreds of thousands of miles.

Power

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

QUESTIONS

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

SECTION 13

1. *Matnni mazmunini umumiy tushunish maqsadi bilan o'qing.*
2. *Chiqindi gaz yo'qotishlarini kamaytirish uchun nima qilinayotganini yozing.*

TEXT

The Car and the Environment

Most of us know that cars cause air pollution. Scientists tell us that if we don't do something soon, we will be unable to repair the damage that we are causing to our planet. What are some of the things we can do to help?

1. Buy a fuel-efficient car and keep it that way

Good gas is a way to stop pollution. Choose a car that is friendly to the environment when you buy one.

2. Keep your car tuned up

A car that badly tuned releases more pollutants into the air. If you keep track of your gas mileage, you'll know when something is wrong. A badly tuned car uses almost 10% more gas than a well-tuned car. Other ways to waste gas are:

Idling your car unnecessarily. If you are stopped for longer than a minute, it is more fuel efficient to turn off your engine.

Using dirty fuel filters. Dirty fuel filters waste gas.

Air Conditioner Maintenance. Of course, this causes a big problem for both us and our mechanics. Our mechanics will have to make sure that there are no leaks, and fix them if there are, before they can add any R-12 (freon) to our air conditioning systems. Naturally, this cost will be passed along to us.

SECTION 14

1. Matnni mazmunini umumiy tushunish maqsadi bilan o'qing.

2. Matnda nima qilmaslik kerakligi haqida gaplarni qidiring.

3. Atrof-muhit sharoitlarini yaxshilash uchun nima qilish kerakligini qisqacha sanab o'ting.

TEXT

Gas Ecology

There are many ways that we can reduce pollution by observing good gas ecology — that is using our cars in fuel efficient ways. Don't move the car unless you are going somewhere. Plan ahead. Starting the car up just to move it a short distance produces more pollutants than hours of driving on the freeway.

Don't use your heater until the car is warmed up. The engine will start more quickly, because it won't be losing heat to warm you.

Try to drive within 35-45 miles per hour when possible. Driving at slower speeds reduces engine efficiency and causes more pollutants.

Don't make fast starts or stops. Fast starts can burn more than 50% gas than regular acceleration (as well as cause 50% more emissions). When a big burst of gas enters the engine, much of catalytic converter's job is bypassed and the unburned gas

comes out the tailpipe or is sent into the converter. Rapid acceleration is only called for in emergency or passing situations. Stopping rapidly also leaves the engine with a lot of unburned gas to deal with. This results in damage to the converter and pollution.

Try not to idle. At bank lines and fast food places with over thirty second waits, turn the engine off, and restart it. It is more fuel efficient, and causes less pollution. The only time that idling is a good thing is after a long, fast run. Idling the engine for a minute or so after one of these helps get rid of any hot spots and fuel vapors.

Keep to steady speeds on the highway. Changing speeds produces more pollution and uses more gas. Don't use the air conditioner unless you have to. It makes your engine work harder, uses more gas, and causes more pollution. Most evaporative emissions get into the atmosphere when we put gas in our cars. Make sure your gas cap is the right one, and in good working order. Gas caps don't cost that much, but are very important in anti-pollution.

Since gasoline expands, never overfill your tank. It will wind up leaking out.

Use known brands of gas. Poor quality gas will not save you money. Instead, it will foul your engine and cause it to function badly. Try several different brands and octane ratings to find out which makes you car the happiest, and stay with it.

SECTION 15

- 1. Matnni mazmunini umumiy tushunish maqsadi bilan o'qing.*
- 2. Matndagi to'qnashuv turlari bilan bog'liq bo'lgan xatboshisini toping.*
- 3. Xavfsizlik kamarlarining asosiy vazifasi nimadan iborat?*
- 4. Piyodalarning qatnov qismidan o'tayotganda asosiy yurish-turish qoidalari qanday?*

TEXT

Road Safety

Every year several thousand people are killed on the roads. Every year hundred thousand people are injured. These people are killed and injured in road accidents.

Accidents are often caused by carelessness of the people. There are rules that help to make the roads safe, but people do not follow the rules.

In our country as in most other countries traffic keeps to the right, but in Great Britain traffic keeps to the left. While driving the car you can get into trouble. The data indicate that in road accidents the passengers who use different kinds of safety belts suffer from the impacts less than the passengers who don't use ones. It was shown that safety belts had reduced the risk of serious injuries.

Accidents can be divided into three types as follows:

1. Head-on impacts between cars;
2. Side impacts caused by accidents at intersections;
3. Rear impacts in which the car (often stationary) is struck from the rear by another car.

Head-on accidents are the most numerous in which the driver and the front seat passenger suffer head injuries. That is why the most important function of safety belts is to protect the driver and passenger from head injury.

In up-to-date cars various types of safety cushions are used to protect the lives of those sitting in the car. But the gold rule is to be careful on the road while driving the car.

As far as the pedestrians are concerned they should obey the following rules: before crossing the road, stop and look both ways. Look right, look left, and then look right again. If the road is clear, it is safe to cross it.

ILOVA

Ma'lumot materiallari

Noto'g'ri (nostandart) fe'llar.

1-Jadval

Infinitive	Past Indefinite	Participle II	Tarjima
(I shakl)	(II shakl)	(III shakl)	
be	was, were	been	bo'lmoq
become	became	become	bo'lmoq, bo'lib yetishmoq
begin	began	begun	boshla(n)moq
break	broke	broken	sin(dir)moq, buzmoq
bring	brought	brought	olib kelmoq, keltirmoq
build	built	built	qurmoq, barpo etmoq
burn	burnt	burnt	yonmoq, yondirmoq kuydirmoq, yoqmoq
buy	bought	bought	sotib olmoq, xarid qilmoq
choose	chose	chosen	tanlamoq, afzal ko'rmoq
come	came	come	kelmoq
cut	cut	cut	kesmoq, qirqmoq
do	did	done	bajarmoq, qilmoq
draw	drew	drawn	rasm chizmoq, tortmoq
drink	drank	drunk	ichmoq
drive	drove	driven	haydamoq, boshqarmoq
eat	ate	eaten	yemoq, ovqatlanmoq
fall	fell	fallen	yiqilmoq, tushmoq
feel	felt	felt	his qilmoq, sezmoq
fight	fought	fought	kurashmoq, jang qilmoq
find	found	found	topmoq

fly	flew	flown	uchmoq, hilpiramoq
forget	forgot	forgotten	unutmoq, esdan chiqarmoq
get	got	got	olmoq, erishmoq
give	gave	given	bermoq
go	went	gone	bormoq, yurmoq
grow	grew	grown	o's(tir)moq, yetishtirmoq
hang	hung	hung	osmoq, osilmoq
have	had	had	egalik qilmoq, bor bo'lmoq
hear	heard	heard	eshitmoq, quloq solmoq
hold	held	held	ushlamoq, tutmoq
keep	kept	kept	saqlamoq, asramoq
know	knew	known	bilmoq, bilib jlmq
lead	led	led	yetaklamoq, rahbarlik qilmoq
learn	learnt, learned	learnt, learned	o'rganmoq, o'zlashtirmoq
leave	left	left	unutib qoldirmoq, tashlab k.
let	let	let	ijozat (ruxsat) bermoq
light	lit	lit	yoqmoq, yoritmoq
lose	lost	lost	yo'qotmoq, yutqizmoq
make	made	made	yasamoq, majbur qilmoq
mean	meant	meant	nazarda tutmoq, anglatmoq
meet	met	met	uchrashmoq, tanishmoq
put	put	put	qo'ymoq
read	read [red]	read [red]	o'qimoq
ring	rang	rang	qo'ng'iroq qilmoq

ran	ran	ran	yugurmoq
say	said	said	aytmoq, demoq
see	saw	seen	ko'rmq
sell	sold	sold	sotmoq, savdo qilmoq
send	sent	sent	jo'natmoq, yubormoq
set	set	set	joylashtirmoq, qo'ymoq
show	showed	shown	ko'rsatmoq
shut	shut	shut	yop(il)moq
sing	sang	sung	kuylamoq, qo'shiq aytmoq
sit	sat	sat	o'tirmoq
sleep	slept	slept	uxlamoq, uyquga ketmoq
speak	spoke	spoken	gapirmoq, gaplashmoq
spend	spent	spent	sarflamoq, o'tkazmoq
stand	stood	stood	turmoq, joylashgan bo'lmoq
swim	swam	swam	suzmoq, cho'milmoq
take	took	taken	olmoq
teach	taught	taught	o'qitmoq, o'rgatmoq
tell	told	told	gapirib (so'zlab) bermoq
think	thought	thought	o'ylamoq, ...deb hisoblamoq
throw	threw	thrown	tashlamoq, otmoq
understand	understood	understood	tushunmoq
win	won	won	g'alaba qozonmoq
write	wrote	written	yozmoq, maktub jo'natmoq

So'z yasalishi

Otning asosiy qo'shimchalari

2 - Jadval

Qo'shimcha	Qaysi so'z turkumiga qo'shiladi	Shakllangan so'zlarning asosiy ma'nosi	Misollar	Tarjima
-ance	fe'llarga	harakat	maintenance	texnik xizmat ko'rsatish
-ant/-ent	fe'llarga	kasbga tegishli bo'lish	assistant	assistent
			student	student
-ency	sifatlarga	sifat yoki holat	efficiency	samaradorlik
-er/-or	fe'llarga	harakat qiluvchi shaxs yoki mexanizm	reader	o'quvchi
			worker	ishchi
			visitor	tashrif buyuruvchi
-dom	otlarga,	holat, sifat	freedom	erkinlik
-er	otlarga	istiqomat qiluvchini belgilaydigan ot	Londoner	londonlik
-hood	otlarga	holat	childhood	bolalik
-ian	otlarga	kasb	technician	texnik
			physician	shifokor
-ics	otlarga	fan nomi	physics	fizika
-ing	fe'llarga		reading	чтение
			smoking	курение
-ion	fe'llarga	jarayon, harakat,	revolution	inqilob

		holat		
-tion			solution	yechim
-ation			aviation	aviatsiya
-ism	otlarga,	ta'limot, nazariya, yo'nalish, sifat	marxism	Marksizm
	sifatlarga		heroism	qahramonlik
-ist	otlarga	ta'limotning izdoshini belgilaydigan ot	communist	kommunist
			darwinist	darwinist
-(i)ty	sifatlarga	sifat yoki holat	legality	qonuniylik
-ment	fe'llarga	harakat natijasi	equipment	uskunalar
			settlement	turar-joy
-ness	sifatlarga	sifat yoki holat	softness	yumshoqlik
			darkness	zulmat
-ship	otlarga	holat	friendship	do'stlik
-ence	fe'llarga	sifat	excellence	ustunlik
			difference	farq

Sifatning asosiy qo'shimchalari

3-Jadval

Qo'shimcha	Qaysi so'z turkumiga qo'shiladi	Shakllangan so'zlarning asosiy ma'nosi	Misollar	Tarjima
-able	Ot va fe'llarga	holat	workable	Ishga layokatli
-			considerable	muhim
-al	otlarga	sifatning mavjudligi	electrical	elektr

			sentimental	sentimental
		sifat mavjudligi, xususiyatlari	medical	tibbiy
-ant	fe'llarga		resistant	chidamli
-ent	fe'llarga	sifat mavjudligi, xususiyatlari	different	turli
-ary	otlarga	sifat mavjudligi, xususiyatlari	revolutionary	inqilobiy
-fill	otlarga	sifat mavjudligi	useful	foydali
-ish	ot va sifatlarga	kam darajada belgini mavjudligi	childish	bolalarcha
			feverish	isitma
			reddish	qizg'ish
-ive	fe'llarga	sifat mavjudligi, xususiyatlari	creative	ijodiy
-less	otlarga	sifatning yoqligi	useless	foydasiz
-ous	otlarga	sifat mavjudligi	famous	mashhur

Ravishning asosiy qo'shimchalari

4-jadval

Qo'shimcha	Qaysi so'z turkumiga qo'shiladi	Shakllangan so'zlarning asosiy ma'nosi	Misollar
-ly	sifatlarga	so'z turkumini o'zgartiradi	badly

Fe'llarning asosiy qo'shimchalari

5-Jadval

Qo'shimcha	Qaysi so'z turkumiga qo'shiladi	Misollar	Tarjima
-ate	otlarga, sifatlarga	activate	faollashtirmoq
-en		harden	chiniqtirmoq
-fy		intensify	kuchaytirmoq
-ize		summarize	xulosa qilish

Asosiy prefikslar

6-Jadval

Prefiks	So'z turkumiga qo'shiladi	Asosiy ma'nosi	Misollar	Tarjima
anti-	ot va sifatlarga	anti-, ...ga qarshi	antisocial	antisosial
co-	ot va fe'llarga	hamkorlikdagi, harakatlarning hamjamiyati	cooperate	hamkorlik qilish
counter-	otlarga	qarshi	countershaft	qarshi mil
dis-	fe'l, ot va sifatlarga	qarama-qarshi yoki inkor ma'nosini beradi	disorganize	tartibsizlash tirmoq
ex-	otlarga	sobiq	ex-champion	sobiq chempion
extra-	sifatlarga	ortiqcha, super-	extraordinary	ajoyib
inter-	fe'l va sifatlarga	o'rtasida, oralig'ida	interaction	o'zaro ta'sir
mis-	fe'l va otlarga	salbiy ma'no	misunder-	noto'g'ri

				tushunish
non-	ot va sifatlarga	...maslik	noninterference	aralashmaslik
out-	fe'llarga	ortiqcha, biron nimadan ortib ketish	outbalance	ortiq bo'lmoq, oshib ketmoq
over-	fe'l va sifatlarga	haddan tashqari	overdo	ortiqcha harakat qilmoq
post-	fe'l, ot va sifatlarga	keyin	postaccele ration	tezlashgan dan keyin
in-	ot va sifatlarga	salbiy ma'no	incorrect	noto'g'ri
il-	ot va sifatlarga	salbiy ma'no	illogical	mantiqsiz
im-	ot va sifatlarga	salbiy ma'no	impossible	imkonsiz
ir-	ot va sifatlarga	salbiy ma'no	irregular	nomuntazam
pre-	fe'l, ot va sifatlarga	oldin-, oldinroq	prehistoric	tarixdan oldingi
re-	fe'l va otlarga	yana, qayta	rewrite	qayta yozish
sub-	fe'l, ot va sifatlarga	ostida	subtropical	subtropik
super-	fe'l, ot va sifatlarga	ustun, ortiq	superheat	ortiqcha qizib ketish
trans-	fe'l, ot va sifatlarga	qayta, trans-	transplant	transplan- tatsiya
			transformation	transformat- siya
ultra-	ot va sifatlarga	odatdagidan ustun, ortiq	ultrasonic	ultratovushli

un-	fe'l, ot va sifatlarga	-siz, teskari ma'no beradi	unkind	mehrsiz
under-	fe'l va sifatlarga	me'yordan pastroq, ozroq	underestimate	kam baho bermoq

Fe'lning shaxsi noma'lum shakllari

7-Jadval

	Active	Passive
Simple	<p>to write</p> <p>I want to write him a letter. Men unga xat yozmochiman.</p>	<p>to be written</p> <p>The letter to be written will be posted at once. Yozilish kerak bo'lgan xat darhol yuboriladi.</p>
Continuous	<p>to be writing</p> <p>The students seem to be writing a dictation now. Hozir talabalar diktant yozihayotganga o'xshaydi.</p>	
Perfect	<p>to have written</p> <p>The students seem to have written their dictation. Aftidan talabalar diktant yozihgana.</p>	<p>to have been written</p> <p>The dictation seems to have been written. Diktant yozilib bo'lganga o'xshaydi.</p>
Perfect Continuous	<p>to have been writing</p> <p>The students seem to have been writing their dictation for 2 hours. Talabalar ikki soatdan beri diktant yozihayotgan ko'rinadi.</p>	

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Инфинитив (Infinitive)
Infinitivning gapdagi funktsiyalari.
Infinitivning tarjima qilish usullari

8-Jadval

Funktsiya	Tarjima
1. Ega To read books is useful. To smoke is bad for health.	Ot yoki fe'lning shaxsi noma'lum shakli Kitob o'qish foydalidir. Chekish sog'liq uchun zararli.
2. To'ldiruvchi I want to read this book.	Fe'lning shaxsi noma'lum shakli Men bu kitobni o'qimoqchiman .
3. Qo'shma kesimning kismi. Our task is to speak English.	Fe'lning shaxsi noma'lum shakli Bizning vazifamiz ingliz tilida gaplashishdir .
4. Aniqlovchi A thermometer is an instrument to show the temperature. The text to be translated is very interesting.	Hozirgi yoki kelasi zamondagi fe'l yoki aniqlovchi ergash gapda modal ma'noga ega bo'lgan fe'l. Termometr - bu haroratni ko'rsatadigan (ko'rsatishi kerak) asbob. Tarjima qilinadigan (qilinishi kerak bo'lgan) matn juda qiziq.
5. Xol We went to the station to meet them.	Ot bilan predlog yoki fe'lning shaxsi noma'lum shakli "uchun" bog'lovchisi bilan Biz ularni kutib olish uchun (ular bilan ko'rishmoq uchun) stantsiyaga bordik.

Murakkab ega (Complex Subject)

9-jadval

Murakkab ega bilan ishlatiladigan fe'l-kesimlar	Misollar	Tarjimasi
<p>1. Majhul nisbatda:</p> <p>to know — bilmoq to think — o'ylamoq to consider — hisoblamoq to believe — ishonmoq to expect — kutmoq to report — ma'lum qilmoq to state — ta'kidlamoq to suppose – deb o'ylamoq</p>	<p>The delegation is said to arrive soon.</p> <p>The delegation is said to have arrived.</p> <p>The delegation is said to be arriving now.</p> <p>He is believed to have been working for 2 years there.</p>	<p>Aytishlaricha delegatsiya tez orada keladi.</p> <p>Aytishlaricha delegatsiya kelib bo'ldi.</p> <p>Aytishlaricha delegatsiya hozir yetib kelyapti.</p> <p>Uni u yerda 2 yildan beri ishlaydi deb o'ylashadi.</p>
<p>2. Aniq nisbatda:</p> <p>to seem — tuyulmoq to appear — bo'lib chiqmoq to happen — sodir bo'lmoq to prove — bo'lib chiqmoq</p>	<p>He seems to know English well.</p> <p>He seems to have known English well.</p>	<p>U Ingliz tilini yaxshi biladigandek tuyuladi.</p> <p>U Ingliz tilini yaxshi bilgan bo'lsa kerak.</p>

3. Soʻz birikmalarida: to be likely — ehtimol to be unlikely — ehtimoldan holi to be certain — aniq to be sure — albatta	She is likely to come here in time.	U, ehtimol vaqtida kelsa kerak.
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Murakkab toʻldiruvchi (Complex Object)

10-jadval

Feʻl-kesimlardan soʻng ishlatiladigan murakkab toʻldiruvchilar	Misollar	Tarjimasi
1. hohishni bildiruvchi: to want — hohlamoq to wish — hohlamoq to like — yoqtirmoq to dislike — yomon koʻrmoq to hate — nafratlanmoq	I want him to read this book. I like people to tell the truth.	Men uni bu kitobni oʻqishini hohlayman . Men odamlar haqiqatni gapirishlarini yoqtiraman .
2. aqliy faoliyatni bildiruvchi: to expect — kutmoq to think—oʻylamoq to suppose — deb	We know him to be a good engineer. We suppose him to have done his work.	Biz uni yaxshi injener ekanligini bilamiz . Biz uni ishini tugatdi deb hisoblaymiz.

o'ylamoq to know — bilmoq to suspect -shubhalanmoq		
3. Выражаю щие чувствен ные восприя тия: to see — видеть to watch — наблюдать to feel — чувствовать to hear — слышать	I saw him cross the street. I felt somebody touch my arm. (Infinitive “to” siz ishlatiladi).	Men uni ko'chani kesib o'tayotganini ko'rgan edim. Men kimdur ko'linga tekkanini his qildim.
4. Выражаю щие побужде ние: to make — заставлять to let — позволять to force — заставлять (силой)	He made us wait for him. She let me do it. (Infinitive “to” siz ishlatiladi).	U bizni uni kutishga majbur qildi. U menga buni qilishimga yo'l qo'yib berdi.

Gerundiy (Gerund)

11-jadval

	Active	Passive
Simple	asking The students like asking questions. Talabalar savol berishni yaxshi ko'rishadi.	Being asked Some students don't like being asked. Ba'zi talabalar ulardan so'rashganini yoqtirishmaydi.
Perfect	having asked I know of his having asked you about it	Having been asked I remembered having been asked

	Men u sendan bu haqida so'rganini bilaman.	about it. Men mendan bu haqida so'rashganini esladim
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Gerundiyning gapdagi vazifasi

12-jadval

Vazifasi	Tarjimasi
1. Ega Driving at a high speed is dangerous.	Ot yoki fe'lining noaniq shakli. Katta tezlikda yurish(haydash) havfli.
2. To'ldituvchi My brother likes riding at a high speed.	Ot yoki fe'lining noaniq shakli. Mening akam katta tezlikda yurishni(haydashni) yaxshi ko'radi.
3. murakkab kesimning bir qismi His favourite sport is racing .	Ot yoki fe'lining noaniq shakli. Uning sevimli sport turi bu poygalar .
4. Aniqlovchi The idea of designing gas engine was given by specialists long ago.	Ot Gaz dvigatelini yaratish g'oyasi mutaxassislar tomonidan allaqachon taklif etilgan edi.
5. Hol We can reduce pollution by observing good ecology rules.	Ravishdosh Biz, ekologiya qoidalariga rioya qilib , atrof muhitning ifloslanishini kamaytirishimiz mumkin.

Sifatdosh, ravishdosh (Participle I, II)

13-jadval

Pariciple I	Active	Passive
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Simple	<p>reading</p> <p>The girl reading a book is my friend.</p> <p>Kitob o'qiyotgan qiz mening dugonam.</p> <p>Reading a book, he made some notes.</p> <p>Kitobni o'qib turib, u qandaydir yozuvlarni yozar edi.</p>	<p>being read</p> <p>The book being read now is very interesting.</p> <p>Hozir o'qishayotgan kitob juda qiziqarli.</p>
Perfect	<p>having read</p> <p>Having read the book, he put it aside.</p> <p>Kitobni o'qib bo'lib u uni bir chetga qo'ydi.</p>	<p>having been read</p> <p>Having been read the book was returned to the library.</p> <p>Kitobni o'qib bo'lib uni kutubxonaga qaytarishdi.</p>
Participle II	<p>The book read by him is on the table.</p> <p>Ular tomonidan o'qib bo'lingan kitob stolda turibdi.</p>	

Sifatdosh, ravishdosh konstruktsiyalar
(Participle Constructions)

14-jadval

Aniqlovchili sifatdosh	
<p>The translation done at home by the students was of great importance for them.</p>	<p>Talabalar tomonidan uyda qilingan (bajarilgan) tarjima ular uchun katta ahamiyatga ega bo'ldi.</p>
Hol ravishdosh	

Translating the text , the students used the dictionaries.	Matni tarjima qilib(qilayotib) talabalar lug'atlardan foydalanishdi.
Having translated the text the students began to answer the questions.	Matni tarjima qilib bo'lib talabalar savollarga javob berishni boshlashdi.
Mustaqil ravishdosh	
The students having translated the text, the lesson was not over. The lesson was over, the students having translated the text before the bell rings .	Talabalar matni tarjima qilib bo'lishganida dars hali tugamagan edi. Dars tugadi hamda talabalar matni qo'ng'iroqdan oldin tarjima qilib bo'lishgan edi (qo'ng'iroq chalingunga qadar).

Mayl shakllari

15-jadval

Mayllar	Harakat	Misol	Tarjimasi
Habar mayli	Hozirgi, o'tgan va kelasi zamonda real ish-harakatni ifodalaydi.	He goes to the office every day.	U idoraga har kuni boradi.
Buyruq mayli	Buyruq, iltimosni ifodalaydi; ish-harakatga undaydi.	Come up to me . Open the window, please. Let's go to the cinema. Don't go there.	Oldinga kel! Derazani oching, iltimos. Keeling kinoga boramiz. U yerga bormang.
Shart mayli	Hozirgi, o'tgan, kelaqsi zaondagi shartni, ehtimolli	If I knew him better, I should give him advice.	Agar men uni yaxshiroq bilganimda edi men unga maslahat bergan bo'lardim .

	kni ifodalaydi.	I suggested that we should go to the country tomorrow. I wish you were present at the conference today.	Men ertaga shaxar tashqarisiga borishimizni taklif qildim. Men bugun siz konferentsiyada ishtirok etishingizni hohlardim.
	Hozirgi, o'tgan va kelasi zamonda ish-harakat bajarilishining no-realligini, imkonsizligini ifodalaydi.	<i>If I had known him better, I should have given him advice.</i> I wish you had been present at the conference yesterday.	Agar men uni yaxshiroq bilganimda edi unga maslahat bergan bo'lardim. (men uni bilmasdim, maslahat bermadim). Men sizni kecha konferentsiyada ishtirok etgan bo'lishingizni hohlardim. (Afsus ishtirok eta olmadingiz.)

"should" fe'lining vazifasi

16-jadval

Vazifasi	Misol	Tarjimasi
1.Future-in-the-Past ni hosil qilish uchun yordamchi fe'l (zamonlar moslashuvi)	He thought that I should go there on foot.	U meni u yerga piyoda boradi deb o'ylagan edi.
2.Shart maylini hosil qiluvchi yordamchi fe'l (1-shaxs)	If I had free time, I should have gone there on foot.	Agar meni bo'sh vaqtim bo'lganida edi, men u yerga piyoda brogan bo'lardim.
3.Modal fe'l (kerak)	You should go there on foot.	Siz u yerga piyoda borishingiz kerak.

“Would” fe’lining vazifasi

17-jadval

Vazifasi	Misol	Tarjimasi
1.Future-in-the-Past ni hosil qilish uchun yordamchi fe’l(zamonlar moslashuvi)	She said he would take exams in physics.	U aytdiki, u fizikadan imtihon topshirar ekan.
2. Shart maylini hosil qiluvchi yordamchi fe’l (2- va 3- shaxs ko’plikda).	If you asked for help, he would do it with great pleasure.	Agar sen yordamm so’raganingda edi, u buni katta zavq bilan qilgan bo’lar edi.
3. inkor shakldagi modal fe’l- (biror bir ishni qilishni hohlamaslik)	He asked her for help but she wouldn’t listen to him.	U bola u qizdan yordam so’radi, u qiz esa uni eshitishni ham hohlamadi.
4.o’tgan zamondagi ish-harakatni takrorlanishi	In summer we would go to the country.	Yozda biz odatda shaxar tashqarisiga boramiz.

Bog’lovchilar

Teng bog’lovchilar

18-jadval

Bog’lovchi	Misol
And - va,hamda	He came to the library and we began to do our hometask.
But - lekin, ammo	The train has arrived at the station but there was no delegation in it.

both...and - ham...ham...	Both my brother and my sister want to drive the car.
neither...nor - na...na...	Neither my brother nor my sister can drive the car.
either...or - yo...yo...(yoki...yoki...)	I don't know who could do it, either my sister, or my brother.
as well as (as well) – dek, - day	We can read, write as well as speak English.
Also - hamda	There are two departments at our college: the day department and the evening department. Also the college provides distance education.

Ergashtiruvchi bog'lovchilar

19-jadval

Bog'lovhchi	Misol	Tarjimasi
that — -ki	It is possible that he will come.	Ehtimolki, u keladi.
	He said that he would come.	U aytdiki, u kelar ekan.
what —nima	I don't know what will come of it.	Men bilmayman bundan nima chiqarkin.
	What he told us is not true.	U bizga aytgan narsa -yolg'on.
who — kimki	The man who is sitting by the window is my friend.	Deraza yonida o'tirga odam mening do'stim.
whom — kim	I don't know whom you	Men siz kim haqida

haqida(kimga)	are speaking about.	gapirayotganingizni bilmayman.
whose – kimning	Do you know whose book it is?	Sen bu kimning kitobi ekanligini bilasanmi?
when — qachon	When I came home my daughter was sleeping.	Men uyga kelganimda, qizim uhlamayotgan edi.
where — qayerda	The city where he was born is very beautiful.	U tig'ilgan shaxar juda chiroyli.
how — qanday	I don't remember how I got there.	Men u yerga qanday yetib olganimni eslolmayman.
why — nega	We didn't know why he was absent.	Biz uni nega yo'q ekanligini bilmasdik.
if—agar	If you come we shall go to the theatre together.	Agar sen kelsang biz teatrga birga boramiz.
if (whether) - yoki	We didn't ask if (whether) he had entered the University.	Biz u universitetga kirgan yoki kirmaganligini so'ramadik.
while — o'sha paytda	While I am reading an interesting book I notice nothing around me.	Men qiziqarli kitob o'qiyotgan paytimda atrofimda hech narsani sezmayman.
as soon as — bo'lishi bilamoq	I shall ring you as soon as I have free time.	Men bo'shashim bilanoq senga qo'ng'iroq qilaman.
since — dan beri, uchun	I haven't seen him since May.	Men uni maydan beri ko'rmadim.
	Since I was very busy, I couldn't come to see you.	Men juda band bo'lganligim uchun sizning oldingizga kela olmadim.
before – ilgari, dan avval	Before going to some foreign country you should read about the customs.	Biror bir horijiy davlatga borishdan avval siz uning urf-odatlarini haqida o'qib ko'rishingiz kerak.

after — so'ng, dan so'ng	After I graduated from the University, I became a post graduate at once.	Men universitetni tamomlaganimdan so'ng , men darhol spirant bo'ldim.
because — chunki, uchun	I didn't come because I was ill.	Men kasal bo'lganligim uchun kelmadim.
as — uchun	We returned to the camp as it was very cold.	Juda sovuq bo'lganligi uchun biz lagerga qaytdik.
though(although) - garchi	I recognized him by his photograph though I have never seen him before	Men uni rasmdan tanir edim, garchi uni avval hech qacho ko'rmagan bo'lsam ham.
as if — huddi	He spoke English so fluently as if he were an Englishman.	U huddi inglizday ingliz tilida ravon gapirar edi.

Ko'p ishlatiladigan predloglar, bog'lovchilar va ravishlarning ro'yhati

about — haqida, nisbatan; taxminan, atrofida

above – yuqorida, ustidan

above all — avvalo

across — ko'ndalang, kesib o'tib, boshqa tarafda

after — so'ng, keyin

after all — va nihoyat

against - qarshi

along — bo'ylab

among - orasida

around (round) — atrofida

at — da, yonida (joyga nisbatan — at the table), da (vaqtga nisbatan — at 5 o'clock)

at last — va nihoyat

at least – har holda
before - oldin (*joy*), gacha (vaqt); dan avval (*bog'lovchi*)
behind — orqada, ortda
below — pastda
besides – dan tashqari
beside — yonida, birga
between — o'rtasida (ikkita narsaning o'rtasida)
by — yonida, atrofida, orqali, tomonidan, ga
by the way – aytganchi
by means of - yordamida
by no means – hech qanaqasiga
by all means — har qanaqasiga
down — pastga
during — davomida
for – uchun, davomida
from — ...dan
in this way — shunday qilib
in spite of (despite) — ...ga qaramasdan
in front of - oldida
into — ichiga
of — ...ning
of course — albatta
on = upon — ...da (hafta kunlari, sanalarga nisbatan); ustida
out — ...dan tashqariga
over — ustidan, tepasidan
since — ...dan beri, uchun
through — orqali
throughout — bo'ylab
till = until — ...gacha, ...guncha
towards — ...ga tomon

under — tagida, pastida, ostida

up — tepaga

up to — ...dan ...gacha

with — bilan

within — ichida

without — ...siz

Predlogli birikmalar

Predlogli birikmalar qandaydir soʻz turkumlari va oddiy predloglar yordamida tashkil topgan (asosan otlar yordamida).

Ularning asosiylari quyida alifbe tartibida keltirilgan:

according to — ...ga koʻra

as to, as for — nisbatan

because of — tufayli

by means of – yordamida, orqali

by reason of — sababli

by virtue of — ...ga koʻra

by way of - maqsadida

due to — ...ga koʻra, tufayli

for the sake of - uchun

in accordance with — ...ga mos holda

in addition to – qoʻshimcha ravishda

in consequence of — oqibatida

in front of - oldida

in relation to - nisbatan

in spite of – ...ga qaramasdan

in respect of — ...ga nisbatan

in view of — ...ga koʻra

in virtue of — ...ga koʻra, tufayli

instead of — oʻrniga

on account of – sababli, yufayli

out of – ...dan tashqariga

owing to – ...ga ko'ra, tufayli

thanks to – ...ga ko'ra

with regard to } nisbatan, ...ga nisbatan

with respect to }

with reference to

Belgilar va ularni o'qish

Belgi	Inglizcha	Tarjimasi
+	plus	plyus
-	minus	minus
÷	division sign	bo'lish belgisi
×	multiplication sign	ko'paytirish belgisi
=	equal	tenglik belgisi
≈	approximately equal	tahmimiy tenglik, yahlitlash belgisi
>	more than	dan ko'proq
<	less than	dan ozroq
()	parentheses	yumaloq qavs
[]	brackets	to'rt burchak qavs
{ }	braces	fugurali qavs
#	number	son, tartib raqami
∞	infinity sign	cheksizlik belgisi
√	root	ildiz

O'lchov birliklari

(Units of Measurement)

Uzunlik o'lchovlari (Linear Measures)

O'lchov, o'zbekcha	O'lchov inglizcha	Umum qabul qilingan o'lchov, qisqartma	O'lchov, sm/m da
duym	inch	In.	2.54 sm
fut	foot	ft.(12in)	30.48sm
chaqirim	yard	yd.(3ft)	91.44sm
milya	mile	mi.(1760yd.)	1609.33m
dengiz milyasi	nautical mile	naut.mi. (6080ft.)	1853.18m

Og'irlik o'lchovlari

(Measures of Weights)

O'lchov, o'zbekcha	O'lchov inglizcha	Umum qabul qilingan o'lchov, qisqartma	O'lchov, gr/kg da
funt	pound	lb	453.59 g
sentner	hundredweight	hwt (112 lb)	50.8kg
tonna	ton	t (20hwt)	1016.048kg

Suyuqliklar va mayda zarralarning o'lchovlari

(Measures of Volume)

O'lchov, o'zbekcha	O'lchov inglizcha	Umum qabul qilingan o'lchov, qisqartma	O'lchov, litrda
pinta	pint	pt.	0.57g
Kvarta	quart	qt.(2pt)	1,14 l

gallon(britancha)	gallon	gal.(4qt)	4,55 l
gallon(amerikancha)	gallon	gal.	3,78l
bushel	bushel	bsh. (8 gal.)	36,37 l

Maydon o'lchovlari

(Square Measures)

O'lchov, o'zbekcha	O'lchov inglizcha	Umum qabul qilingan o'lchov, qisqartma	O'lchov, sm ² , dm ² , m ² , ga, km ² da
duym kvadrat	square inch	sq.in.	6.45 sm ²
fut kvadrat	square foot	sq.ft... (144 sq.in)	9,29 dm ²
Kvadrat chaqirim	square yard	sq.yd. (9sq.ft)	0,836 m ²
akr	acre	ac. (4840 sq.yd.)	0,4 ga
Kvadrat milya	square mile	sq.mi.(640 ac)	2,59 km ²

Vaqt (Time)

O'lchov, o'zbekcha	O'lchov inglizcha	Umum qabul qilingan o'lchov, qisqartma
soniya	second	s.
daqiqqa	minute	min.(60s.)
soat	hour	hr.(60min.)
kun	day	day(24hr)
hafta	week	week (7days)

Can you read this table?

There are 12 inches in 1 foot.

1 centimeter=0.394 inches (1 centimeter equals 0 points three nine four inches).
1 inch=2.54 centimeter. (One inch equals two points five four naught centimeters).

Ko'p ishlatiladigan qisqartmalar

a.m. - ante meridiem (*lam.*) — 24:00 dan 12:00 ga qadar bo'lgan vaqt uchun

C - centigrade – Selsiy 100 gradusli shkalasi bo'yicha (*harorat*)

e.g. — exempli gratia (*lot.*) - masalan

etc. — et cetera (*lot.*) — va hokazo.

hr. — hour — soat

i.e. — id est (*lot.*) — ya'ni

kg. - kilogram - kilogram

lb. — pound — funt

L — litre — litr

m. — metre — metr

mi. — mile — milya

mill. — minute — daqiqa

NB - nota bene (*lot.*) - pay attention— e'tibor bering, ahamiyat bering.

p.m. — post meridiem (*lot.*) 12:00 dan 24''00 gacha bo'lgan vaqt uchun

second — soniya

t. - ton - tonna

vs - versus (*lot.*) – ga qarshi

w. — watt — vatt

X-rays — Roentgen rays – roentgen nurlari

a.c. [alternating current] — o'zgaruvchi tok

amp. [ampere] — **amper**

B.D.C. [bottom dead centre] – pastki o'lik nuqta

b.h.p. [brake horsepower] – samarali tormoz kuchi

C.-I. engine [compression-ignition engine] — qisilishdan, dizeldan yonadigan dvigatel

c.c./cu. cm. [cubic centimetre] — santimetr kub

cu. in. [cubic inch] — duym kub
cu. ft. [cubic foot] – fut kub
wt. [hundredweight] — sentner
d.c. [direct current] — doimiy tok
F. [Fahrenheit] — Farengeyt shkalasiga ko'ra (*harorat*)
f.p.m. [feet per minute] — fut 1 daqiqaga
f.p.s. [feet per second] — fut 1 soniyaga
ft.-lbs. [foot-pounds] — fut funtiga
gal. [gallon] — gallon
g.p.m. [gallon per minute] - ГАЛЛОН В МИНУТУ
hp [horsepower] - ЛОШАДИНАЯ СИЛА
in. [inch] - ДЮЙМ
k.p.h. [kilometers per hour] – kilometr soatiga
lb [pound] — funt
lb.-ft. [pound-foot] – funt futiga
m.p.g. [miles per gallon] — 1 gallon yoqilg'I sarfidagi milya
m.p.h. [miles per hour] – milya soatiga
n.h.p. [nominal horsepower] — ot kuchidagi kuvhlanish
n.t.p. [normal temperature and pressure] — normal harorat va bosim
o.a.d. [overall dimension] — katta o'cham
psi. [pounds per square inch] – duym kvadratga teng funt
r.p.m. [revolutions per minute] — daqiqasiga marta
sq. ft. [square foot] — fut kvadrat
t.d.c. [top dead centre] – yuqori o'lik nuqta
v. [velocity] — tezlik
vol. [volume] — sig'im

I-BO'LIM MASHQLARINING KALITLARI

Unit One

8-mashq

1-b; 2-c; 3-b; 4-a; 5-b.

1-mashq8

1-14; 2-18; 3-23;4-7;5-17;6-21;7-1; 8-12; 9-10;10-2;11-19;12-3; 13-4;14-15; 15-6; 16-13;17-5;18-16;19-8; 20-22; 21-9; 22-20;23-11.

2-mashq2

1. I study at the automobile department of a technical college.
2. After graduating from the college I'll become a specialists un automobile industry.
3. In my opinion every specialist should know that the automobile must undergo laboratory and road tests.
4. These tests are needed in order for the automobile to meet up-to- date demands.
- 5.The modern automobile must have the following qualities: rapid acceleration, smooth-acting clutch, silent gearbox, dependable braking and steering systems, ease of driving.
6. The automobile engine must also have low fuel consumption and be ecological.

Unit Two

5-mashq

1-4;2-6;3-7;4-1;5-2;6-5; 7-3.

6-mashq

1. The automobile consists of three basic parts: the engine, the chassis and the body.
2. The engine is the source of power.
3. The engine includes fuel, lubricating and electrical systems.
4. The chassis comprises the power train, running gear, steering and braking systems.
5. The power train (power transmission), in turn, consists of the clutch, gearbox, cardan shaft, final drive, differential, rear axle and axle shafts.
6. The running gear includes frame with axles, wheels and springs.
7. The body had hood, fenders and accessories: heater, windshield wipers, stereo type recorder, conditioner and so on.

13-mashq

1-13;2-19;3-25;4-2;5-8;6-5;7-16;8-1;9-11; 10-20;11-3;12-21;13-7; 14-14;15-4; 16-17;17-6;18-24; 19-10;20-9;21-23;22-12;23-15;24-18;25-22.

15-mashq

1-b; 2-d;3-a;4-c;5-d;6-c.

Unit Three

6-mashq

1-a; 2-a; 3-b; 4-a; 5-d; 6-b.

7-mashq

1-b; 2-a;3-b;4-c;5-a.

Unit Four

8-mashq

1-i; 2-b;3-g;4-h;5-f; 6-d; 7-e; 8-a;9-c.

Unit Five

9-mashq

1. The frame provides support for the body: engine and power train members.
2. It consists of longitudinal and cross members that reinforce the frame.
3. The frame has to withstand vibrations, twists and other strains.
4. The frame may be of two types: conventional frames and unibody constructions.
5. Conventional frames are made of steel channel sections welded or reverted together.
6. Frameless constructions are made integral with the body.
7. The frame is insulated from the body by rubber pads in order to prevent noise and vibrations from passing to the passengers of the car.

Unit Six

6-mashq

1-c; 2-b; 3-b;4-b; 5-b.

12-mashq

1-9; 2-16; 3-1; 4-41; 5-11; 6-3; 7-2; 8-15; 9-4;10-7; 11-12; 12-6;13-10;14-8; 15-13;
16-5.

14-mashq

1. The clutch is a friction device.
2. The clutch connects the engine and the gearbox.
3. The clutch is located between the flywheel and the gearbox.
4. As a rule the clutch consists of two discs: the driven disc and the pressure one.
5. The clutch is controlled by the clutch pedal.
6. When the clutch pedal is at the clutch discs are engaged and the running engine is connected to the gearbox and wheels.
7. When the driver pushes down on the clutch pedal the discs are apart, the clutch is disengaged and the engine runs idly.

Unit Seven

5-mashq

1-3; 2-4; 3-1; 4-2; 5-5.

6-mashq

1. The gearbox is designed for changing the speed of the car movement.
2. The gearbox provides for forward speeds and one reverse.
3. Gearboxes can be as follows: sliding-mesh type, constant –mesh type and epicyclic (planetary) type.
4. The sliding-mesh type is the simplest one.
5. The constant –mesh is the most widely used type.

6. The sliding gears on the gearbox shaft are designed for providing the forward speeds and the reverse drive.

Unit Eight

6-mashq

1-5; 2-11; 3-1; 4-6; 5-2; 6-10; 7-3; 8-4; 9-7; 10-9; 11-8.

7-mashq

1-4; 2-5; 3-1; 4-3; 5-2.

8-mashq

1. Brakes are the most important mechanisms of the car.
2. They are used to slow or stop the car.
3. Brakes can be divided into two types, namely: drum brakes and disc brakes.
4. Most cars use hydraulic or pneumatic driving system.
5. The brakes are applied when the driver pushes down on the brake pedal.

1. Brakes are used to slow or stop the car.
2. Depending on the drive brakes are classified as: mechanical, hydraulic, air, or electric brakes.
3. Brakes are controlled by the brake pedal.
4. Brakes are applied when the driver pushes down on the brake pedal (brake shoes are pressed against the brake drums).
5. In air brakes compressed air is used to apply the braking force.
6. Electric brakes use electromagnets to provide the braking effort.
7. Up-to –date cars are equipped with all-wheel brakes.

Unit Nine

8-mashq

1-5; 2-3; 3-6; 4-4; 5-2; 6-1.

9-mashq

1. To guide the car it is necessary to have the steering system.
2. The steering gear assembly incorporates: steering wheel, steering column, gearing, pitman arm, steering knuckle arms and ball joints, levers and tie rods.
3. There are different steering gears, namely: rack and pinion type, recirculating ball type, and worm and sector type.
4. When the driver turns the steering wheel to the left or right, the steering mechanism causes the pitman arm to turn to the left or right.
5. This movement is carried by the tie-rods to the steering knuckle arms and wheels, causing them to turn to the left or right.

Unit Ten

5-mashq

1. Many modern automobiles are equipped with onboard computer systems for better automobile operation.
2. The program of such a computer has only two memories: read only memory (ROM) and random access memory (RAM).
3. The computer software tells the computer what to do, and when to do it in a specific sequence.
4. The program is stored in a permanent memory.
5. The microprocessor contains a ROM and a RAM.
6. Some computers have the ability to learn. This is referred to as an adaptive memory.

INGLIZCHA-UZBEKCHA ATAMALAR LUG'ATI-MINIMUM

Aa

accelerate – tezlamoq, tezlashtirmoq

acceleration — tezlashish

accelerator pedal – yonilg'I uzatkich pedali

access — kirish

accessories — yordamchi qurilmalar

achieve - erishmoq

achievement – yutuq

adjustment - boshqarish, yaxshilash

aid — yordam

all-wheel drive — to'liq ishga tushish

angle — burchak

anti-lock device — bloklashga qarshi moslama

assemble — yig'moq, tuzatmoq

assembly — yig'ish, agregat, to'plam

axial thrust — uchlikka bosim tushishi

axle — uchi, ko'prik

axle shafts – yarim uchlik

Bb

back axle — orqa ko'prik

balanceweight — muvozanatli og'irlik

ball bearing cams – sharikli mushtlari

band brakes — tasmali tormozlar

blower – compressor

body — kuzov

brakes are applied — tormozlar ishga tushadi

brake free-wheel — g'ildiraklarni bo'sh yurishi tormozi

brake pedal – tormoz pedali

braking effect — tormozli harakat
braking force — tormoz kuchi
bring into contact – bog'lamoq
bring into operation — harakatga olib kelmoq
bring the shoe into contact— kolodkalarni bog'lamoq
by means of — vositasida

Cc

caliper — shtangen sirkuli yoki nutromer bilano'lchamoq
car wheels – avtomobil g'ildiraklari
carry out — amalga oshirmoq
catalytic converter — katalitik almashtirgich
centrifugal clutches — sentrifugali sepleniye
centrifugal forces — sentrifugali kuchlar
change gear(box) — uzatkichlar qutisi
chain — zanjir
chassis - shassi
clutch – bog'lanish
clutch pedal — bog'lanish pedali
coasting – inersiyaga ko'ra harakat
coil spring live axle — prujina uchli asosiy ko'prik
complete — tugatmoq
component — tarkibiy qism
comprise — o'z ichiga olmoq
conical shape — konusli shakl
connect — bog'lamoq
consider – deb hisoblamoq
consist of —dan tashkil topmoq
control lever – nazorat richagi
conveniences — qulayliklar

conventional design — standart dizayn

splitter — tarqatuvchi quti

conveyor – konveyer, transport

cooling system — sovutadigan tizim

couple – bo'g'lamoq

crane carrier - avtokran

Dd

deal (with) – bog'lanmoq **de-clutching** – bog'lanishni uzib qo'yish

deliver – uzatmoq, yetkazmoq **demands** — talablar

dependable brakes – ishonchli tormozlar

design — loyihalashtirmoq

designing — loyihalashtirish

develop — rivojlantirmoq

development - rivojlanish

device — qurilma

diaphragm spring — diafragmali prujina

differential - farqli

disc brakes — diskli tormozlar

disengagement — uzilib qolish

dog clutch – mushtli mufta

drawback - yetishmovchilik

drive — yurgizish

driven plate — harakatga keltirilgan disk

driving safety — haydash(harakat) havfsizligi

drum brakes – barabanli tormozlar

due to —ga ko'ra

dumper – samosval

Ee

ease of maintenance – tex. xizmat yengilligi

electric motor—elektr motor

electric switch — elektrik yoqgich

electric system – elektr tizim

emergency situation — avariya holati

enable — yaroqli qilish

engage — bog'lamoq

engaged position — yoqilgan holatda

engine — dvigatel

engine capacity – dvigatel kuchi

engine output – chiquvchi kuch

evaporative emissions – bug'lanuvchi gazlarning chiqishi

Ff

fan belt — havo purkagich kamari

fenders - qanotlar

final drive – asosiy uzatgich

fine finish — tozalab ishlov berish

finger – barmoq, shtift

fire crash tender – yong'in texnikasi

first cost — boshlang'ich narx

flat position — yassi holat

flexibility — egiluvchanlik

flexible — egiluvchan

flow of air — havo oqimi

foul the engine – dvigatelni ifloslantirmoq

four-wheel drive — to'la ishga tushirish

frame — ramka

free (disconnect, disengage) – uzib qo'ymoq

friction clutch — friksiyali bog'lanish

friction device – friksiyali qurilma

friction disc – friksiyali disk

friction material – friksiyali material

friction pad — friksiyali qatlam

front suspension – oldiga qo'ymoq

fuel consumption – yoqilg'I sarfi

fuel system — yoqilg'I tizimi

fuel vapors — yoqilg'I bug'lari

fulcrum – sharnir uchi

Gg

gas (oil) mileage — gallonga milya yurish gaz (benzin) sarfi

gas cap — yoqilg'i baki qopqog'i

gearbox — uzatkichlar qutisi

gears — olti qirralilar

generator - generator

get rid of – halos bo'lmoq

Hh

head lamp flasher – fara chiroqlari

heat-dissipation – issiqlik tarqatish

heater — isitkich

heavies – katta yuk mashinalari

high efficiency — muhim, katta ahamiyatga ega

highway — shossse, katta yo'l, trassa

hoist — ko'taruvchi mexanizm

hood - kapot

horn — ovoali signal. sirena

horseless vehicle — otsiz transport vositasi

hydraulic pressure – gidravlik bosim
hydraulic pump – gidro nasos
hydraulic system — gidravlik tizim
hydromantic converter - gidrotransformator

Ii

ignition system — o't olish tizimi
impeller – nasos g'ildiragi
improve - yaxshilamoq
improvement - yaxhsilanish
in conjunction with — bilan uyg'unlikda
... in other words — boshqacha qilib aytganda
include — ВКЛЮЧАТЬ
increase – o'z ichiga olmoq
indicator lever – ko'rsatkich richagi
inhibitor – ingibitor, sekinlatgich
inner portion – ichki qism
inner shaft – asosiy val
input shaft — boshlang'ich val
installation — ishga tushirish, montaj
instrumental panel – boshqarish paneli
integral clutch and brake unit – bog'lanish va tormoz bog'lanma bloki
intend – mo'ljallangan
intercity bus – shaxar avtobusi
internal combustion engine – ichki o't olish dvigateli
inventor — kashfiyotchi

Kk

kick — urish, turtish
kick down – urib tushirish

knob — tugma

LI

laboratory test – laborator sinov

leading shoes — asosiy tormoz kolodkalari

leaf spring – varoqli prujina

level — daraja

lever — tortma(richag)

lights — faralar

lining – ustiga qo'yish

link – bog'lamoq

load deflection – kuchlanish ostida ezilish

loader — avtopogruzchik

lock-up clutch — bloklovchi mufta

long service life —uzoq muddat xizmat qilish

lose of clamp load — qisish og'irligini yo'qotish

loss – yo'qotish

low road noise – yo'lda ketayotgandagi bir oz shovqin

lower gear — pastlatuchi uzatkich

lubricate — surtmoq

lubricating system — surtish tizimi

lug —qisish, kronshteyn, musht

M m

machine tool — stanok

maintenance – texnik xizmat va remont

manual override – avtomat boshqarishning qo'l boshqarilishi

manufacture — ishlab chiqaruvchi

manufacturing — ishlab chiqaruvchi

manufacturing processes — ishlab chiqarish jarayoni

mass manufacturing — ko'plab ishlab chiqarish

meet up-to-date requirements — hozirgi talablarga javob berish **multi-disc**

device — ko'p diskli qurilma

multiple-speed gearbox — ko'p tezlanishli uzatkichlar qutisi

Nn

natural bias — tabiiy siljish

Oo

obtain – olmoq, erishmoq

octane rating — oktan raqam

off-road travel – notekis yo'ldan yurish

oil circuit — yog' oqimining o'tmay qolishi

one-way free-wheel – g'ildiraklarning erkin yurishi

operating cylinders – ishchi silindrlar

operation flexibility – ishdagi egiluvchanlik

outer shaft – chiquvchi val

overload safety valve – havfsizlik klapani

overrun — normal tezlikning ortib ketishi

Pp

park brake — to'ztatuvchi tormoz

performance – ishchi xarakteristika

permit — ruxsat bermoq

pivot — aylanish uchi, sharnir

possess — ega bo'lmoq

power output — chiquvchi kuchlanish

power plant — kuchlanish agregati

power train — uzatkich kuchlanishi

power-shift gearbox — uzatkichlarni o'zgartirish qutisi

pre-determined engine speed -

dvigatel aylanishlari

pressure plate — ezuvchi disk

prevent — oldini olmoq

propeller shaft – propeller vali

propulsion output — dvigatelni ishga tushirish kuchi

provide — ta'minlamoq

push down on the pedal — pedalni bosmoq

Qq

questionnaire – so'rovnoma

quiet-running power unit — shovqinsiz kuchlar agregati

Rr

racing car – poyga avtomobili

rack and pinion steering – reykali va olti qirrali boshqarish mehanizmi

rapid — tez

ratio — nisbiylik

reaction member – reaktiv unsur

rear axle — orqa ko'prik

rear suspension – orqaga qo'yish

reduce — kamaytirmoq

release – bo'shatmoq

release lever – richagni uzish

release ring — uzish aylanasi

relief valve — oldini oluvchi klapan

require — talab qilmoq

requirements — talablar

restrict — chegaralamoq

retaining ring – ushlab qoluvchi aylanma

retard —sekinlatmoq
reversing gearbox – orqaga yurish uzatkichi
rigid — qattiq
rigid quality control – sifatning qattiq nazorati
rim — tishli aylanma
road travel – yo'l bo'ylab yurish
rotary motion – aylanma harakat

Ss

separating clutch – ajratuvchi debriyaj
shock absorber — amortizator
shoes – kolodka(tormozniki)
silent gearbox — shovqinsiz uzatkichalt qutisi
single row engine – qatorli dvigatel
skid-steer drive system – boshqarish tizimi
slot — chiziq
smooth-acting clutch – silliq bog'lanish
smooth engagement - silliq yoqish
spare wheel - qo'shimcha g'ildirak
spiral bevel differential - konusli olti qirrali farqlanish
springs - prujinalar
steering system - chambarak boshqarish tizimi
steering wheel - chambarak g'ildiragi
suit requirements - talablarga javob bermoq
synchromesh gearbox - sinxronizatorli uzatkichlar qutisi

Tt

Tailpipe - dum qismi
take advantage-qulayliklardan foydalanmoq
trust assembly- og'irlik bog'lanishi

torque-aylantiruvchi daqiqa

torque capacity-aylantiruvchi vaqtda uzatkishlar kuchi yetmasligi

torqueconverter- gidrotransformator

tracked-pritsepli transport vositasi

tractive effort- og'irlik kuchlanishi

tractive unit-og'irlik agregati

traffic lights- svetofofor

trailing shoes-asosiy ikkilamchi tormoz kolodkalari

transfer gearbox-tarqatuvchi uzatkich

transmatic torque converter –aylantiruvchi daqiqani avtomatik aylantirirsh

truck-yuk mashinasi

two-speed wipers-ikkita tezlanishli oyna tozalagichlar

Uu

units and mechanisms - agraletlar va mexanizmlar

Vv

valve-klapan

vehicle –transport vositasi

V-type eng`ine-V-shakldagi dvigatel

Ww

wear-ko'p foydalanish, amartizatsiya

wheeled vehicle-g'ildirakli transport vositasi

wheels-g'ildiraklar

windshield wipers- shamolli oyna tozalagichlar

work out-ishlab chiqmoq

