

**МІНІСТЕРСТВО ОСВІТИ І НАУКИ УКРАЇНИ  
ЧЕРНІГІВСЬКИЙ ДЕРЖАВНИЙ ТЕХНОЛОГІЧНИЙ  
УНІВЕРСИТЕТ**

**АНГЛІЙСЬКА МОВА ЗА ПРОФЕСІЙНИМ СПРЯМУВАННЯМ  
МЕТОДИЧНІ ВКАЗІВКИ**

**до практичних занять та самостійної роботи для студентів заочної форми  
навчання спеціальності 274 - «Автомобільний транспорт»**

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Укладачі: Кормільцина Світлана Юріївна, викладач кафедри іноземних мов професійного спрямування.

Яковенко Тетяна Миколаївна, викладач кафедри іноземних мов професійного спрямування.

Відповідальна за випуск:

Литвин С.В., завідувача кафедрою іноземних мов професійного спрямування, кандидат педагогічних наук, доцент.

Рецензент:

Бараненкова Наталія Анатоліївна, кандидат філологічних наук, доцент, доцент кафедри іноземних мов професійного спрямування.

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## ВСТУП

Методичні вказівки з англійської мови орієнтовані на студентів спеціальності 274 - «Автомобільний транспорт» заочної форми навчання, які володіють англійською мовою в межах нормативної граматики і соціально-побутової лексики на рівні середньої школи та призначаються як для опрацювання в аудиторії, так і для самостійної роботи студентів.

Методичні вказівки відповідають вимогам програми курсу «Іноземна мова для немовних внз» (2005 р.) та навчальному плану для студентів заочної форми навчання спеціальності 274 - «Автомобільний транспорт» механіко-технологічного факультету.

Головна мета вказівок — розвиток вмінь розуміння й аналізу текстів професійного спрямування, накопичення словникового запасу, вміння вести бесіду, брати участь у дискусіях англійською мовою.

Методичні вказівки включають 5 розділів, які містять тексти та різноманітні вправи, а також інформацію науково – популярного характеру, досить цікаву і доступну для розуміння студентами заочної форми навчання. Цей матеріал сприяє підготовці їх до сприйняття вузькоспеціалізованої інформації на наступних ступенях навчання. Тематика текстів сучасна і актуальна.

Методичні вказівки містять достатню кількість різноманітних вправ, побудованих за принципом зростання складності і попередження лексичних та граматичних труднощів, сприяння збагаченню словникового запасу. Комплексна структура методичних вказівок забезпечує ефективне формування та вдосконалення вмінь читання, перекладу, та використання професійно орієнтованої лексики в спілкуванні англійською мовою.

# Unit 1.AUTOMOBILE PRODUCTION

## SECTION 1

### VOCABULARY AND WORD STUDY

1. Read and memorize the active vocabulary to the text “Automobile Production” and translate the given sentences.

<b>technician</b>	технік
<b>deal with manufacturing cars</b>	мати справу з виробництвом автомобілів
<b>work out the technology of manufacturing processes</b>	розробляти технологію виробничих процесів
<b>put into mass production</b>	вводити у серійне виробництво
<b>subject to tests</b>	підлягати випробуванням
<b>dependable brakes</b>	надійні гальма
<b>driving safety</b>	безпека руху
<b>long service life</b>	тривалий термін служби
<b>rapid acceleration</b>	швидке прискорення
<b>ease of maintenance</b>	легкість утримання
<b>meet up-to-date demands (requirements)</b>	відповідати сучасним вимогам
<b>be stable on the road</b>	бути стійким на дорозі
<b>ignition system</b>	система запалювання
<b>fuel consumption</b>	витрата палива
<b>car</b>	легковий автомобіль
<b>truck</b>	вантажівка

1. After graduating from the university I will become a technician.
2. I will 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.

**2. Read and translate the following international words. Look up their transcriptions in the dictionary if necessary. Mind the part of speech.**

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

**3. Read and translate the following international words. Mind the meaning of suffixes.**

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.

**4. Read and translate the following text.**

**Automobile Production**

I study at the university, at the automobile-construction department. When I graduate from the university I will 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. Answer the questions after the text.**

1. What department do you study at?
2. What will you become after graduating from the university?
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?

### **6. Fill in the gaps, using the right preposition. Translate the sentences into Ukrainian.**

1. After graduating ... the university I will 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.

### **7. Finish the sentences, choosing the right variant.**

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....
  - a. to work out new technological processes;
  - b. to meet up-to-date requirements;
  - c. to shorten the time between designing and manufacturing.
4. The qualities required of the automobile are ....
  - a. high efficiency, long service life, driving safety and pleasant appearance;

b. smooth acting clutch, silent gearbox, dependable braking and steering systems;  
c. new types of resistant to corrosion materials.

5. The car must have the following units:....

a. high efficiency, long service life, driving safety and pleasant appearance;

b. smooth-acting clutch, silent gearbox, dependable braking and steering systems;

c. new types of resistant to corrosion materials.

**8. Match English word combinations on the left with their equivalents on the right.**

1. Automobile construction	a. довгий термін служби
2. To graduate from the university	b. просте техобслуговування
3. Low fuel consumption	c. випробувати
4. To deal with	d. плавне зчеплення
5. Designing cars	e. відповідати сучасним вимогам
6. Mass production	f. мати справу
7. Long service life	g. надійні гальма
8. Driving safety	h. навчальна програма
9. To work out	i. розробляти
10. Ease of maintenance	j. система запалювання
11. Technology of manufacturing processes	k. безпека водіння
12. To subject to tests	l. будова автомобіля
13. A rigid quality control	m. жорсткий контроль якості
14. To meet up-to-date demands	n. безшумна коробка передач
15. Rapid acceleration	o. проектування автомобілів
16. Smooth-acting clutch	p. закінчити університет
17. Silent gearbox	q. технологія виробничих процесів
18. Dependable brakes	r. фахівці



19. Steering system	s. масове виробництво
20. An academic program	t. система рульового управління
21. Experts	u. мала витрата палива
22. Ignition system	v. система запалювання

### 9. Make up questions to the following sentences.

1. I study at the university of technology.
2. After graduating from the university 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.

### 10. Translate the sentences into English.

1. Я вчуся на автомобільному факультеті технічного університету.
2. Після закінчення університету я стану фахівцем автомобільної промисловості.
3. На мою думку, кожен фахівець повинен знати, що автомобіль повинен пройти стендові та дорожні випробування.
4. Такі випробування необхідні, щоб автомобіль відповідав сучасним вимогам.
5. Сучасний автомобіль повинен мати наступні якості: мати систему запалювання, мати плавне зчеплення, безшумну коробку передач, надійні гальмівну і рульову системи, бути легким в управлінні.
6. Двигун автомобіля також повинен мати невеликі витрати палива і бути екологічним.

**SECTION2**  
**READINGANDSPEAKING**

**11. Read the dialogues A and B and translate them into Ukrainian.**

**DIALOGUE A**

1. **Nick:** Hullo, Boris!
2. **Boris:** Hullo, Nick. How are things?
3. **N.:** Perfectly well, thank you. I entered the university of technology.
4. **B.:** That's nice, what will you become after graduating from the university?
5. **N.:** I'll become a technician and deal with manufacturing new cars.
6. **B.:** Why did you choose this profession?
7. **N.:** I enjoy learning about a car. I enjoy working with metal. And most of all I enjoy being able to construct cars.
8. **B.:** Do you enjoy the course?
9. **N.:** Yes, of course.
10. **B.:** Tell me about your profession in detail, please?
11. **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.
12. **B.:** Thank you very much for your information. I believe you like your profession very much.
13. **N.:** Oh, yes, very much, indeed.

**DIALOGUE B**

1. **Anton:** Where do you study?
2. **Boris:** I study at the university of technology.
3. **A:** Whom does the university train?
4. **B:** It trains specialists for the automobile industry.
5. **A:** Why did you decide to become a technician?
6. **B:** I enjoy working with machines. I enjoy learning about a car. I understand every part of it.
7. **A:** What can you tell me about the car?
8. **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.
9. **A:** Do you enjoy the course?
10. **B:** Yes, very much. I have learned a lot of things. For example, I know that the production of the car comprises five phases.
11. **A:** What are they?
12. **B:** They are designing, working out the technology, laboratory tests, road tests, mass production.
13. **A:** And why are laboratory and road tests needed?
14. **B:** The cars are subjected to tests in order to meet up-to-date demands.

- 15.A: And what are these demands?  
 16.B: They are high efficiency, long service life, driving safety, ease of maintenance and so on.  
 17.A: I think you will become an expert in automobile engineering.  
 18.B: I'll try. The cooperative plan of an academic program with practice at a plant will help me to become a good specialist.

**12. Make up a topic about your future profession, using the information from the dialogues.**

### SECTION 3

#### VOCABULARY TO THE UNIT

1. **construct** — будувати, конструювати
2. **construction** — будівництво, конструкція
3. **constructor** — будівельник, конструктор
4. **dealwith** – мати справу з...
5. **demand** – вимагати, запитувати
6. **dependable brakes** — надійні гальма
7. **design** – проектувати, оформляти
8. **designer** – дизайнер, конструктор
9. **develop** - розробляти
10. **development** — розробка
11. **driving safety** — безпека руху
12. **efficiency** – ефективність, продуктивність
13. **engineer** — інженер
14. **fuel consumption** – витрата палива
15. **handling** – обробка, користування
16. **ignition system** — система запалювання
17. **maintenance** — технічне обслуговування
18. **manufacture** – виробляти, штампувати
19. **manufacturer** — виробник, постачальник
20. **manufacturing** — виробництво
21. **mechanics** - механік
22. **mechanism** — механізм
23. **produce** — виготовляти, виробляти
24. **producer** — виробник
25. **production** - виробництво
26. **putintomassproduction** – ввестиусерійневиробництво
27. **quality** — якість
28. **rapidacceleration** — швидке прискорення
29. **require** – вимагати, потребувати
30. **requirement** - вимога

- 31. **rigid quality control** — жорсткий контроль якості
- 32. **science** - наука
- 33. **scientist** - вчений
- 34. **service life** – термін служби
- 35. **silent gearbox** — безшумна коробка передач
- 36. **smooth-acting clutch** – плавне зчеплення
- 37. **solution** — рішення
- 38. **steering system** – система рульового керування
- 39. **subject to tests** — підлягати випробуванню
- 40. **technician** — технік, фахівець
- 41. **technologist** – технолог
- 42. **technology** — технологія
- 43. **undergo tests** — проходити випробування
- 44. **unit** — частина, підрозділ
- 45. **up-to-date** – сучасний

## Unit 2.COMPONENTS OF THE AUTOMOBILE

### SECTION 1

#### VOCABULARY AND WORD STUDY

1. Read and memorize the active vocabulary to the text “Components of the automobile” and translate the given sentences.

<b>engine (power plant)</b>	двигун ( силова установка)
<b>chassis</b>	шасі
<b>body</b>	кузов автомобіля
<b>power train</b>	силова передача
<b>running gear</b>	ходово частина
<b>steering system</b>	рульове управління
<b>brakes</b>	гальма
<b>clutch</b>	зчеплення
<b>gearbox</b>	коробка передач
<b>propeller shaft</b>	карданний вал
<b>final drive</b>	головна передача
<b>differential</b>	диференціал
<b>rear axle</b>	задня ось
<b>axle shafts</b>	напівосі
<b>frame with axles</b>	рама з осями
<b>wheels and springs</b>	колеса з ресорами
<b>hood</b>	капот автомобіля
<b>fenders</b>	крила
<b>heater</b>	нагрівач
<b>windshield wiper</b>	склоочишувач
<b>include</b>	вміщати в себе

<b>source of power</b>	джерело енергії
<b>fuel</b>	паливо
<b>cooling</b>	система охолодження
<b>lubricating</b>	мастило

1. The automobile is made up of three basic parts: the power plant, or the engine, the chassis and the body.
2. The engine is the source of power.
3. It includes fuel, cooling, lubricating and electric systems.
4. Most automobile engines have six or eight cylinders.
5. The chassis includes a power train, a running gear, steering and braking systems as well.
6. The power train carries the power from the engine to the car wheels.
7. The power transmission contains the clutch, gearbox, propeller, final drive, differential, rear axle and axle shafts.
8. The body has a hood, fenders and accessories.

**2. Read and translate the following international words. Look up their transcriptions in the dictionary if necessary. Mind the part of speech.**

Automobile*n*, chassis*n*, electric*adj*, system*n*, control*n*, differential*n*, ventilator*n*, cylinder*n*.

**3. Choose and write down the terms connected to: a) *the engine*; b) *the chassis*; c) *the body*. Write down their Ukrainian equivalents.**

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. Read and translate the following 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.

### **5. Answer the questions after the text.**

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 does the body have?

### **6. Fill in the gaps, using the right preposition. Translate the sentences into Ukrainian.**

1. The automobile is made ... of three parts: the power plant, or the engine, the chassis and the body.
2. The engine is the source... power that makes the wheels rotate and the car move.
3. The power train carries the power ... the engine ... the car wheels.
4. The power transmission, ... turn, contains the clutch, gearbox, propeller, final drive, differential, rear axle and axle shafts.
5. The running gear consists ... a frame ... axles, wheels and springs.
6. The body has a hood, fenders ... accessories: the heater, stereo tape recorder, windshield wipers, conditioner, speedometer and so ... .

### **7. Finish the sentences, choosing the right variant.**

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.

**8. Finish the sentences, using the right variant.**

1. The automobile is made up of ...	1. a power transmission, running gear, steering wheel 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



## **9. Make up questions to the following sentences.**

1. The automobile is made up of three basic parts: the power plant, or the engine, the chassis and the body.
2. The engine is the source of power.
3. It includes fuel, cooling, lubricating and electric systems.
4. Most automobile engines have six or eight cylinders.
5. The chassis includes a power train, a running gear, steering and braking systems as well.
6. The power train carries the power from the engine to the car wheels.
7. The power transmission contains the clutch, gearbox, propeller, final drive, differential, rear axle and axle shafts.
8. The body has a hood, fenders and accessories.

## **10. Translate the sentences into English.**

1. Автомобіль складається з трьох основних частин: двигуна, шасі та кузова.
2. Двигун - це джерело енергії.
3. Двигун включає в себе паливну, охолоджуючу, змазувальну і електричну системи.
4. Шасі включає в себе силову передачу, ходову частину, рульову й гальмівну системи.
5. Силова передача (трансмісія), в свою чергу, складається зі зчеплення, коробки передач, карданного валу, головної передачі, диференціала, заднього моста і напівосі.
6. Ходова частина включає в себе раму з осями, колеса і ресори.
7. Кузов включає в себе капот, крила і допоміжні аксесуари: обігрівач, склоочисники, магнітолу, кондиціонер і т. п.

## **SECTION 2**

### **READING AND SPEAKING**

#### **11.a) Read the dialogue A and translate it into Ukrainian.**

#### **DIALOGUE A**

**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.

**b) Finish the sentences of the dialogue B, using the right words and word combinations.**

### **DIALOGUE B**

**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. Make up a topic about the components of your automobile, using the information from the dialogues.**

### **SECTION 3**

#### **VOCABULARY TO THE UNIT**

- 1. accessories**— аксесуари, обладнання, приладдя
- 2. cooling**— система охолодження
- 3. axle shafts**— напівосі
- 4. body** – кузов
- 5. conditioner**– кондиціонер
- 6. consist of** — складатися з ...

7. **device** – пристрій
8. **disengage** – роз'єднати
9. **engage** – з'єднати
10. **engine** — двигун
11. **fenders** — крила
12. **final drive** – головна передача
13. **fix** — кріпити
14. **flywheel** – маховик
15. **frame** – рама, каркас
16. **fuel** — паливо
17. **gearbox** — коробка передач
18. **heater** – нагрівач
19. **hood** — капот
20. **include** — включати в себе
21. **lubricating** - мастило
22. **measure** — виміряти
23. **pedal** — педаль
24. **power train (transmission)** — силова передача (трансмсія)
25. **power plant**- силова установка
26. **propeller (cardan) shaft**– карданний вал
27. **rear axle**— задній міст
28. **release the engine** — від'єднати двигун
29. **running gear**– ходова частина
30. **source of power**–джерело енергії
31. **speed** - швидкість
32. **speedometer** - спідометр
33. **springs** - ресори
34. **tachometer** - тахометр
35. **wheel** - колесо
36. **windshield wipers** – склоочишувачі, двірники

## Unit 3. PRINCIPLE OF OPERATION OF THE FOUR-STROKE PETROL ENGINE

### SECTION 1

#### VOCABULARY AND WORD STUDY

1. Read and memorize the active vocabulary to the text “Principle of operation of the four-stroke petrol engine” and translate the given sentences.

<b>bottom dead center</b>	нижня мертва точка
<b>charge of fuel</b>	заряд палива
<b>combustion</b>	згоряння
<b>combustion chamber</b>	камера згоряння
<b>compression stroke</b>	стиснення
<b>connecting rod</b>	шатун
<b>crankshaft</b>	колінчатий вал
<b>cylinder</b>	циліндр
<b>diesel engine</b>	дизельний двигун
<b>exhaust stroke</b>	такт випуску
<b>four-stroke cycle</b>	чотиритактний цикл
<b>fuel injection</b>	вприскування палива
<b>ignite</b>	запалити
<b>ignition</b>	запалювання
<b>intake (inlet) stroke</b>	такт впуску
<b>internal combustion engine</b>	двигун внутрішнього згоряння
<b>mixture</b>	суміш
<b>operating cycle</b>	робочий цикл
<b>petrol engine</b>	бензиновий двигун
<b>piston</b>	поршень
<b>power stroke</b>	сила удару
<b>pressure</b>	тиск
<b>rotary movement</b>	поворотний рух
<b>spark plug</b>	свічка запалювання
<b>stroke</b>	хід (поршня)
<b>top dead center</b>	верхня мертва точка
<b>valve</b>	клапан

1. The internal combustion engine is called so because fuel is burned inside the engine itself.
2. Most automobile engines work on a four stroke cycle.
3. The operating cycle of the four stroke petrol engine includes: inlet stroke,

compression stroke, power stroke, exhaust stroke.

4. The inlet stroke is when inlet valve opens to intake a charge of fuel into the cylinder.

5. The compression stroke is when the inlet valve is closed and the mixture is compressed by the rising piston.

6. The power stroke is when the gases expand and great pressure makes the piston move back down the cylinder.

7. The exhaust stroke is when the burnt gas flows through the exhaust valve into the atmosphere.

**2. Read and translate the following international words. Look up their transcriptions in the dictionary if necessary. Mind the part of speech.**

Principien, cyclen, piston *n*, centern, cylinder *n*, atmospheren.

**3. Read and translate the following international words. Mind the meaning of suffixes.**

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

**4. Read and translate the following text.**

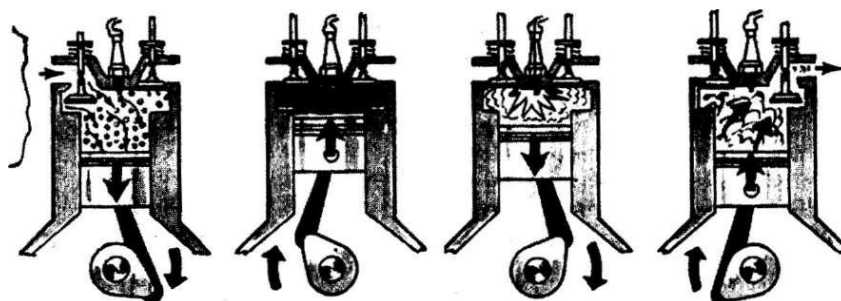
### **Principle of Operation of the Four-Stroke Petrol Engine**

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 on the cylinder, (the inlet valve is closed and the mixture is compressed by the rising piston. This is called the compression stroke. As the piston again reaches the top dead center the spark plugs ignite the mixture, both valves being closed during its combustion. As a result of burning mixtures the 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  
*Рис. 1. Principle of Operation of the Four-Stroke Petrol Engine*

### 5. Answer the questions after the text.

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?

### 6. Fill in the gaps, using the right preposition. Translate the sentences into Ukrainian.

1. The internal combustion engine is called so because fuel is burned ... the engine itself.
2. Most automobile engines work ... a four stroke cycle.
3. The operating cycle ... the four stroke petrol engine includes: inlet stroke, compression stroke, power stroke, exhaust stroke.
4. During the inlet (intake) stroke the inlet valve opens and a charge of fuel (mixture) flows ... the cylinder.
5. During the compression stroke the inlet valve is closed and the fuel is compressed ... the rising piston.
6. During the power stroke both valves are closed, pressure rises ... the combustion chamber, and the spark ignites the mixture.
7. During the exhaust stroke the exhaust valve is opened, pressure is released and the residual gases flow ... the atmosphere ... the exhaust valve.

### 7. Finish the sentences, choosing the right variant.

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 exhaust and the intake valves are closed.

### 8. Match English word combinations on the left with their equivalents on the right.

1. bottom dead center	a. циліндр
2. combustion	b. колінчатий вал
3. compression stroke	с.двигун внутрішнього згорання
4. crankshaft	d. нижня мертва точка
5. cylinder	е. бензиновий двигун
6. diesel engine	f. робочий цикл
7. four stroke cycle	g. клапан
8. fuel injection	h. стиснення
9. ignite	і. тиск
10.internal combustion engine	ј.згорання
11.operating cycle	к. хід (поршня)

12.piston	l. запалити
13.power stroke	m. дизельний двигун
14.petrol engine	n. верхня мертва точка
15.pressure	o. сила удару
16.stroke	p. поворотний рух
17.spark plug	q. чотиритактний цикл
18.top dead center	r. заряд палива
19.valve	s. вприскування палива
20.rotary movement	t. свічка запалювання
21.charge of fuel	u. такт впуску
22.intake (inlet) stroke	w. поршень

### 9. Make up questions to the following sentences.

1. The internal combustion engine is called so because fuel is burned inside the engine itself.
2. Most automobile engines work on a four stroke cycle.
3. The operating cycle of the four stroke petrol engine includes: inlet stroke, compression stroke, power stroke, exhaust stroke.
4. During the inlet (intake) stroke the inlet valve opens and a charge of fuel (mixture) flows into the cylinder.
5. During the compression stroke the inlet valve is closed and the fuel is compressed by the rising piston.
6. During the power stroke both valves are closed, pressure rises in the combustion chamber, and the spark ignites the mixture.
7. During the exhaust stroke the exhaust valve is opened, pressure is released and the residual gases flow into the atmosphere through the exhaust valve.

### 10. Translate the sentences into English.

1. Я вчуся на автомобільному факультеті технічного університету.
2. Після закінчення університету я стану фахівцем автомобільної промисловості.



3. На мою думку, кожен фахівець повинен знати, що автомобіль повинен пройти стендові та дорожні випробування.
4. Такі випробування необхідні, щоб автомобіль відповідав сучасним вимогам.
5. Сучасний автомобіль повинен мати наступні якості: мати систему запалювання, мати плавне зчеплення, безшумну коробку передач, надійні гальмівну і рульову системи, бути легким в управлінні.
6. Двигун автомобіля також повинен мати невеликі витрати палива і бути екологічним.

## SECTION 2

### READING AND SPEAKING

#### 11. Read the dialogue A and B and translate them into Ukrainian.

##### 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.

##### 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!

**12. Translate the Ukrainian sentences into English and act out the dialogues.**

1. -Не розумію, щось трапилось з моєю машиною.

-Let me trace the fault.

-Будь ласка. Ти є досвідчений водій?

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

-Бак майже повний.

-When did you have your plugs checked?

-Учора. Карбюратор теж в порядку.

-У такому випадку давай поїдемо до найближчої ремонтної станції.

-Good idea. They will have the car fixed.

2.- Коли тобі відремонтували автомобіль?

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

- Добре. Мені теж треба відремонтувати автомобіль. Ослабли гальма (The brakes are slack.) Акумулятор розрядився (The battery has run down.)

-It can be easily done.

- Я рад це чути.

3.- Яку машину ти хочеш придбати?

-I want a second-hand car. Could you help me?

- З великим бажанням.

-I hear there are good cars on sale 42nd Street.

-Я знаю цей магазин. Давай поїдемо туди.

-Good idea. If I choose a car there, I won't have to bother any more.

- Абсолютно вірно.

### SECTION 3

#### VOCABULARY TO THE UNIT

1. **assume**— приймати, уживати

3. **bottom dead center**— нижня мертва точка

4. **burn**— горіти
5. **by means of** – за допомогою
6. **charge of fuel**– заряд палива
7. **combustion** — згоряння
8. **combustion chamber**– камера згоряння
9. **compression stroke**– стиснення
- 10.**connecting rod** – шатун
11. **convert**— конвертувати
- 12.**crankshaft** — колінчастий вал
- 13.**cylinder**– циліндр
- 14.**descend** — знижуватися, спускатися (о поршню)
- 15.**describe**– описувати
- 16.**diesel engine** – дизельний двигун
- 17.**directly**— безпосередньо
- 18.**follow smb's advice** — дотримуватись порад
- 19.**fuel injection** – вприскування палива
- 20.**heat** — тепло
- 21.**mixture**— суміш
22. **operating cycle** – робочий цикл
- 23.**petrol engine** – бензиновий двигун
- 24.**piston** - поршень
- 25.**power stroke** – робочий хід
- 26.**pressure** - тиск
- 27.**reach** - досягти
- 28.**recharge** - перезаряджати
- 29.**reciprocating movement** – зворотний рух
- 30.**residual gas**–залишковий газ
- 31.**rise** - підніматися
- 32.**rotary movement** – поворотний рух
- 33.**run down** - спуститися
- 34.**run out of fuel**–закінчилось паливо
- 35.**spark plug** – свічка запалювання
- 36.**stroke** - удар
- 37.**tank** - танк
- 38.**top dead center** – верхня мертва точка
39. **trace the fault** – простежити наявність дефекту
- 40.**valve** - клапан

## Unit 4.CHASSIS

### SECTION 1

#### VOCABULARY AND WORD STUDY

1. Read and memorize the active vocabulary to the text “Chassis” and translate the given sentences.

<b>unit</b>	вузол, блок, частина
<b>gear</b>	механізм, пристрій
<b>power transmission</b>	передача електроенергії
<b>gearbox</b>	коробка передач
<b>tractive effort</b>	тягове зусилля
<b>running gear</b>	ходова частина
<b>driving wheels</b>	ведучі колеса
<b>steering system</b>	рульова система
<b>brakes</b>	гальма
<b>shaft</b>	вал
<b>car springs</b>	автомобільні пружини
<b>flywheel</b>	маховик, крутень
<b>rear axle</b>	задня ось
<b>clutch</b>	зчеплення
<b>final drive</b>	головна передача
<b>friction device</b>	фрикційний пристрій
<b>axle shafts</b>	напівосі
<b>crankshaft</b>	колінчастий вал

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.

2. Read and translate the following international words. Look up their transcriptions in the dictionary if necessary. Mind the part of speech.

Transmission $n$ , system $n$ , mechanism $n$ , radiator $n$ , friction $n$ , automobilen, cardan $n$ , portion $n$ , final $n$ , accelerator $n$ , pedal $n$ , position $n$ .

**3. Read and translate the following international words. Mind the meaning of suffixes.**

to transmit - transmission; to connect — connection;  
to found — foundation; to move — movement.

**4. Read and translate the following 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.

**5. Answer the questions after the text.**

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?

**6. Fill in the gaps, using the right preposition. Translate the sentences into Ukrainian.**

1. The main units ... the chassis are: the power transmission, the running gear and the steering mechanism.
2. The power transmission includes the whole mechanism .... the engine and the rear wheels.
3. This entire mechanism consists ... the clutch, gearbox, propeller (cardan) shaft, rear axle, final drive, differential and axle shafts.
4. .... the front end of the car is the engine.
5. .... the back of it is the flywheel.
6. .... the flywheel is the clutch.
7. The clutch is a friction device connecting the engine ... the gears of the gearbox.

**7. Finish the sentences, choosing the right variant.**

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

**8. Match English word combinations on the left with their definitions on the right.**

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

### 9. Make up questions to the following sentences.

1. The main units of the chassis are: the power transmission, the running gear and the steering mechanism.
2. The power transmission includes the whole mechanism between the engine and the rear wheels.
3. The clutch is a friction device connecting the engine with the gears of the gearbox.
4. The differential enables the driving wheels to turn at different speeds which is necessary when turning the car.
5. The rear axle is capable of moving up and down about the frame.
6. The steering mechanism is designed for changing the direction of the car.
7. The brakes are used for stopping the car, for decreasing its speed and for holding the car position.

### 10. Translate the sentences into English.

1. Головними вузлами шасі є: трансмісія, ходова частина і рульовий механізм.

- 2.Радіатор розташований в передній частині автомобіля.
- 3.Крутень кріпиться на задній частині двигуна.
- 4.Зчеплення сполучає двигун з коробкою передач.
- 5.Коробка передач призначена для зміни швидкості руху автомобіля.
- 6.Зусилля передається карданним валом.
- 7.Головна передача знижує високі оберти двигуна до невисоких оборотів провідних коліс.
- 8.Диференціал дозволяє провідним колесам обертатися з різною швидкістю при повороті автомобіля.
- 9.Рульовий механізм призначений для зміни напрямку руху автомобіля.
- 10.Гальма використовуються для зупинки або зниження швидкості автомобіля.

## SECTION 2

### READING AND SPEAKING

#### 11. Read the dialogues and translate it into Ukrainian.

#### DIALOGUE

##### 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.



## 12. Translate the text into Ukrainian and give a short summary of it.

### 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.

## SECTION 3

### VOCABULARY TO THE UNIT

1. **Unjust** – регулювати
2. **Attach** - прикріпити
3. **Be capable** – бути здатним
4. **Breather channel** – канал сапуна
5. **Check** – перевірка
6. **Decrease the speed** – зменшити швидкість
7. **Driven wheels** – ведені колеса
8. **Driving wheels** – провідні колеса
9. **Engine crankshaft** – колінчастий вал двигуна
10. **Fastening bolts** – кріпильні болти
11. **Fit properly** – підганяти належним чином
12. **Flywheel** – крутень, маховик
13. **Frame** – рама
14. **Free travel** – вільний хід
15. **Gear lever** – важіль коробки передач
16. **Greater portion of the car weight** – велика частина ваги автомобіля
17. **Hold the car position** – утримувати автомобіль в потрібному напрямі
18. **Housing** – картер, корпус
19. **In turn** – у свою чергу
20. **Incomplete disengagement** – неповне відключення зчеплення
21. **Level** – рівень
22. **Fastening bolts** – кріпильні болти

23. **Malfunction** – несправна робота
24. **Mount** – встановлювати
25. **Move up and down** – рухатися вгору і вниз
26. **Power transmission** – силова передача
27. **Rear wheels** – задні колеса
28. **Run out** – знос
29. **Running gear** – ходова частина
30. **Self – demeshing of gears** – самороз'єднання шестерен
31. **Springs** – ресори
32. **Steering system** – рульова система
33. **Steering wheel** – рульове колесо
34. **Support** – підтримувати
35. **Tighten** – затягувати
36. **Torque** – обертаюча дія
37. **Tractive effort** – тягове зусилля
38. **Travelling speed** – швидкість руху
39. **Trouble** – поломка
40. **Trunnion cross** – хрестовина кардана
41. **Universal-joint forks** – вилки кардана
42. **Wash** - промивати

## Unit 5.FRAME

### SECTION 1

#### VOCABULARY AND WORD STUDY

1. Read and memorize the active vocabulary to the text “Frame” and translate the given sentences.

<b>frame</b>	рама
<b>twist</b>	кручення
<b>support</b>	підтримувати
<b>suspension</b>	підвіска
<b>body</b>	кузов
<b>channel section</b>	порожня секція
<b>longitudinal members</b>	лонжерони
<b>weld</b>	зварювати
<b>cross members</b>	поперечки
<b>rivet</b>	заклепувати
<b>reinforce</b>	підсилювати
<b>insulate</b>	ізолювати
<b>rigid</b>	жорсткий
<b>rubber pad</b>	гумова прокладка
<b>mining</b>	міцний
<b>construction</b>	конструкція
<b>withstand strains</b>	витримувати навантаження
<b>strengthen</b>	зміцнювати

1. The foundation of the automobile chassis is the frame which provides support for the engine, body and power-train members.

2. Cross members reinforce the frame.

3. The frame provides a firm structure for the body, as well as a good point for the suspension system.

4. There are two types of frames, namely: conventional frames and integral (unibody) frames.

5. Conventional frames are usually made of heavy steel channel sections welded or riveted together.

6. 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.

7. Frameless constructions are called so because they are made integral with the body.

**2. Read and translate the following international words. Look up their transcriptions in the dictionary if necessary. Mind the part of speech.**

Chassis *n*, structure *n*, system *n*, integral *adj.*, construction *n*, steel *n*, vibration *n*, passenger *n*, metal *n*, contact *v*.

**3. Read and translate the following international words. Mind the meaning of suffixes.**

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

**4. Read and translate the following 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.

**5. Answer the questions after the text.**

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. Fill in the gaps, using the right preposition. Translate the sentences into Ukrainian.**

1. The foundation ... the automobile chassis is the frame which provides support ... the engine, body and power-train members.
2. The frame provides a firm structure ... the body, as well as a good point ... the suspension system.
3. There are two types ... frames, namely: conventional frames and integral frames.
4. Conventional frames are usually made ... heavy steel channel sections welded or riveted together.
5. It is important to insulate the frame ... order ... prevent metal-to-metal contacts.
6. Frameless constructions are called so because they are made integral ... the body.
7. The body parts are used ... structurally strengthen the entire body.

**7. Finish the sentences, choosing the right variant.**

1. The frame provides support for ....
  - a. rubber pads;
  - b. suspension system;
  - c. the engine, body and power train members.
2. Conventional frames are made of....
  - a. rubber pads;
  - b. channel sections welded together;
  - c. power-train members.
3. Frameless constructions are made ....
  - a. integral with the body;
  - b. of heavy steel channel sections;
  - c. of rubber pads.
4. The frame is insulated from other parts in order to ....
  - a. prevent dirty and dust;
  - b. prevent metal-to-metal contacts;
  - c. prevent noise and vibrations from passing to the passengers.
5. The frame is reinforced by:....
  - a. cross members;
  - b. suspension members;
  - c. power-train members

**8. Match English word combinations on the left with their equivalents on the right.**

1. frame	a. підтримувати
2. power-train members	b. поперечні елементи

3. cross members	с. двигун
4. rigid	d. рама
5. withstand the strains	e. звичайний
6. vibration	f. невід'ємний
7. twist	g. гумові прокладки
8. suspension system	h. жорсткий
9. conventional	i. зварювати
10. integral	g. ізолювати
11. weld	k. витримувати навантаження
12. rivet	l. зміцнити
13. attach	m. вібрація
14. insulate	n. підвісна система
15. rubber pads	o. кузов
16. strengthen	p. заклепувати
17. automobile chassis	q. авто шасі
18. support	r. кручення
19. body	s. прикріпити
20. engine	t. силові елементи

### 9. Make up questions to the following sentences.

1. The foundation of the automobile chassis is the frame which provides support for the engine, body and power-train members.
2. Cross members reinforce the frame.
3. The frame provides a firm structure for the body, as well as a good point for the suspension system.
4. There are two types of frames, namely: conventional frames and integral (unibody) frames.

5. Conventional frames are usually made of heavy steel channel sections welded or riveted together.

6. 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.

7. Frameless constructions are called so because they are made integral with the body.

### **10. Translate the sentences into English.**

1. Рама забезпечує опору для кузова, двигуна і вузлів силової передачі.

2. Вона складається з лонжеронів і поперечок, які підсилюють раму.

3. Рама повинна витримувати вібрацію, кручення та інші навантаження (напругу).

4. Рами бувають двох типів: звичайні (стандартні) і виконані воедино з кузовом.

5. Стандартні рами виготовлені із сталевих порожнистих секцій, зварених або заклепаних разом.

6. Безрамні конструкції виконані воедино з кузовом.

7. Рама ізолюється від кузова гумовими прокладеннями, щоб шуми і вібрації не проходили до пасажирів автомобіля.

## **SECTION 2**

### **READING AND SPEAKING**

#### **11. Read the dialogues A and translate it into Ukrainian**

##### **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.

#### **12. Make up your own dialogues, using the active vocabulary.**

### SECTION 3

#### VOCABULARY TO THE UNIT

1. **Aligment** – вирівнювання
2. **Attach** – прикріпити
3. **Conventional frame** – загальноприйнята рама
4. **Extremely rigid** – дуже жорсткий
5. **Fasten** – скріплювати, закріплювати
6. **Firm structure** – міцна конструкція
7. **Frame** – рама
8. **Heavy steel** – міцна сталь
9. **Integral frame** – невід’ємна рама
10. **Pad** – подушка
11. **Provide** –забезпечувати
12. **Reinforce** – зміцнювати, посилювати
13. **Rivert** – заклепувати
14. **Rubber insulator** – гумова прокладка
15. **strengthen** – посилювати
16. **Suspension system** –система підвіски
17. **Weld** - зварювати



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