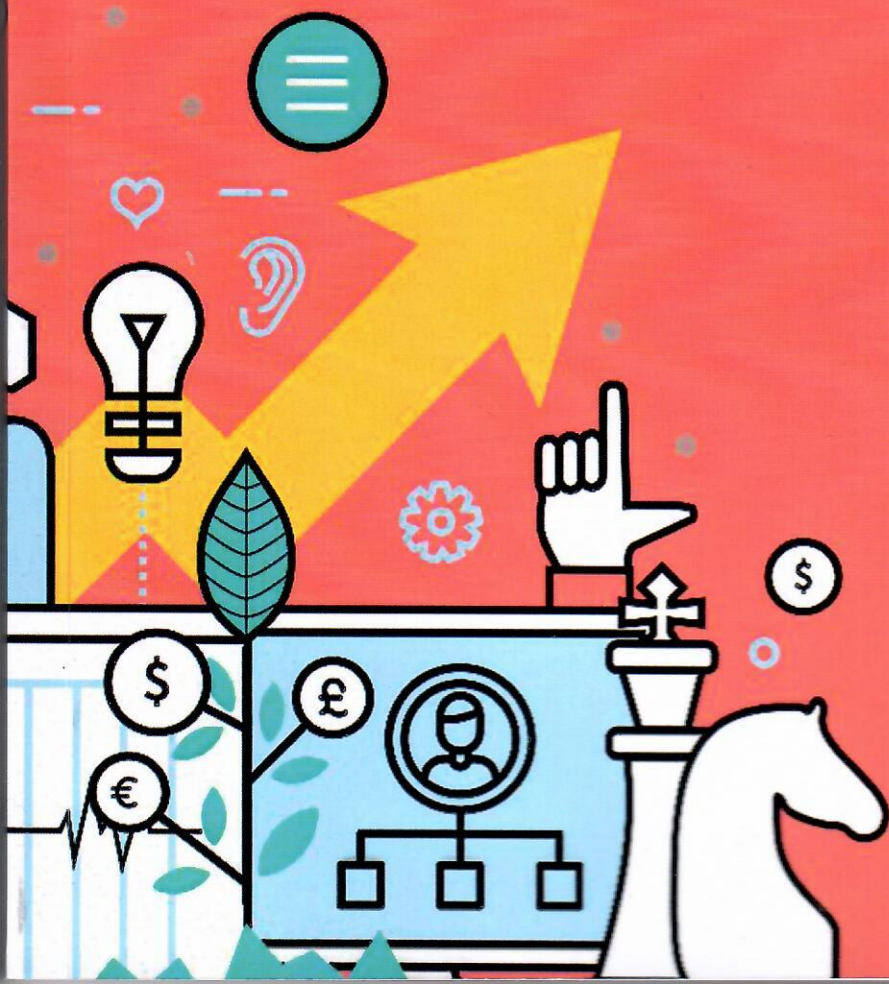


SHEVCHENKO INNA
DMYTRIIEVA OKSANA

ECONOMICS OF ENTERPRISE



MINISTRY OF EDUCATION AND SCIENCE
OF UKRAINE
KHARKIV NATIONAL AUTOMOBILE
AND HIGHWAY UNIVERSITY

SHEVCHENKO INNA
DMYTRIIEVA OKSANA

ECONOMICS OF ENTERPRISE

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for practical classes and independent work of students*

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The course book for practical classes and independent work of students “Economics of enterprise” is aimed to provide the theoretical and practical training of bachelors of economic specialties and economic training of bachelors of technical specialties. Each topic of the course book for practical classes and independent work of students “Economics of enterprise” has the following structure: theoretical provisions; recommended videos; theoretical questions; test tasks; individual practical task (tasks); methodical guidelines for solving practical task (tasks); example of solution to practical task (tasks). The course book for practical classes and independent work of students “Economics of enterprise” is intended for students of higher education institutions.

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INTRODUCTION

The educational component “Economics of enterprise” belongs to the cycle of disciplines of the theoretical and practical training of bachelors of economic specialties and economic training of bachelors of technical specialties.

The purpose of studying the educational component “Economics of enterprise” is the formation of theoretical knowledge and practical skills according to economic processes that are carried out at the enterprise.

The educational component “Economics of enterprise” consists of three parts:

- “Basics of functioning of enterprise as an economic entity”;
- “Formation and using the capital of the enterprise”;
- “Economic results of the enterprise”.

The first part “Basics of functioning of enterprise as an economic entity” includes the topics “Enterprise as an economic entity” and “Enterprise management”.

The second part “Formation and using the capital of the enterprise” includes the topics “Fixed assets of the enterprise”, “Current assets of the enterprise”, “Personnel of the enterprise and labor productivity” and “Payment of labor of the enterprise's personnel”.

The third part “Economic results of the enterprise” includes the topics “Costs of the enterprise and cost of products, services, works”, “Pricing and financial result of the enterprise” and “Investment activity of the enterprise”.

Each topic of the course book for practical classes and independent work of students “Economics of enterprise” has the following structure:

- theoretical provisions;
- recommended videos;
- theoretical questions;
- test tasks;
- individual practical task (tasks);
- methodical guidelines for solving practical task (tasks);
- example of solution to practical task (tasks).

Practical tasks are precisely individual, because the formation of an individual version by the student is provided for by adjusting the initial data by the values of X (the second to last number of the individual plan

of the student) and Y (the last number of the individual plan of the student). Evaluation criteria are also given for individual practical tasks.

At the same time, the sum of points for the solution of all individual practical tasks presented in the course book “Economics of enterprise” is 100 points. Correct solution of individual practical tasks by topic “Enterprise as an economic entity” will bring the student 10 points, including the correct solution of the individual practical task 1 – 5 points, the correct solution of the individual practical task 2 – 5 points. Correct solution of individual practical tasks by topic “Enterprise management” will bring the student 5 points, including the correct solution of the individual practical task 1 – 2.5 points, the correct solution of the individual practical task 2 – 2.5 points. Correct solution of individual practical tasks by topic “Fixed assets of the enterprise” will bring the student 15 points, including the correct solution of the individual practical task 1 – 4 points, the correct solution of the individual practical task 2 – 11 points. Correct solution of individual practical tasks by topic “Current assets of the enterprise” will bring the student 10 points, including the correct solution of the individual practical task 1 – 6 points, the correct solution of the individual practical task 2 – 4 points. Correct solution of individual practical tasks by topic “Personnel of the enterprise and labor productivity” will bring the student 10 points, including the correct solution of the individual practical task 1 – 6 points, the correct solution of the individual practical task 2 – 4 points. Correct solution of individual practical task by topic “Payment of labor of the enterprise's personnel” will bring the student 8 points. Correct solution of individual practical task by topic “Costs of the enterprise and cost of products, services, works” will bring the student 12 points. Correct solution of individual practical tasks by topic “Pricing and financial result of the enterprise” will bring the student 12 points, including the correct solution of the individual practical task 1 – 7 points, the correct solution of the individual practical task 2 – 5 points. Correct solution of individual practical task by topic “Investment activity of the enterprise” will bring the student 18 points.

Also, some topics of the course book “Economics of enterprise” contain thematic psychological tests.

The course book “Economics of enterprise” is intended for students of higher education institutions.

PART I

BASICS OF FUNCTIONING OF ENTERPRISE AS AN ECONOMIC ENTITY

SECTION 1

ENTERPRISE AS AN ECONOMIC ENTITY

1.1 Enterprise: essence, features, types

1.2 Legal forms of enterprises

1.3 Legal forms of amalgamation of enterprises

1.4 Legal framework for the creation of the enterprise

1.1 Enterprise: essence, features, types

Under modern conditions, the main subject of economic activity is an enterprise.

Enterprise is an independent economic entity created by a competent government or local self-government body, or other entities to meet social and personal needs through systematic implementation of industrial, research, commercial, and other economic activities.

As an economic entity an enterprise has the following main *features*:

- production and technical unity (suitability of manufacturing processes to products manufactured, relevant composition of productive assets, unified technical policy, harmonized work of auxiliary and service facilities);

- organizational and social unity (presence of a labor collective, the head and administration; having the rights of a legal entity and requisites);

- financial and economic independence (the ability to independently determine the areas of economic development, structure, output volumes, directions of distribution of the enterprise's profits, forms and amounts of material incentives; the unity of the planning and accounting systems).

The *classification of enterprises* used in the world practice is almost completely formed (Tbl 1.1).

Table 1.1

International classification of enterprises

<i>Classification features</i>	<i>Types of enterprises</i>
Purpose of activity	<ul style="list-style-type: none"> - for-profit - not-for-profit
Legal form	<ul style="list-style-type: none"> - sole proprietorship - partnership - amalgamation of enterprises
Ownership of capital and control	<ul style="list-style-type: none"> - national - foreign - with foreign investments
Scope of activity	<ul style="list-style-type: none"> - international - transnational - offshore
Types of economic activity	<ul style="list-style-type: none"> - industrial - trading - agricultural - construction - transport - finance and credit - insurance - tourist - consulting - others
Technological (territorial) integrity and degree of subordination	<ul style="list-style-type: none"> - parent - subsidiaries - branches
Enterprise size (according to certain criteria)	<ul style="list-style-type: none"> - micro- - small - medium-sized - large
Ownership	<ul style="list-style-type: none"> - individual (sole) - family - private - state-owned - employee-owned - municipal - mixed

Let us consider in more detail types of enterprises registered in Ukraine in terms of the classification criteria “purpose of activity”, “legal form”, “size” and “form of ownership”.

For-profit organization is a legal entity, the main purpose of which is receipt of profit and its distribution among the founders.

For-profit organizations are: business partnerships; production cooperatives; state or municipal unitary enterprises.

Not-for-profit organization is a legal entity for which receipt of profit and its distribution among the founders is not the main objective, and the profit gained is used for self-development and achievement of the statutory goals of the organization.

Not-for-profit organizations include: consumer cooperatives; religious organizations; charitable and other types of foundations; non-governmental organizations (NGOs); associations and unions formed by for-profit and not-for-profit organizations; fully self-financing institutions.

Sole proprietorship (an individual private company) is a company owned by one person. There may be other people employed as well.

Partnership is a legitimate voluntary association of two or more persons acting as co-owners of the company and managing it for the purpose of receiving profit.

Amalgamation of enterprises is usually carried out on a voluntary basis and involves uniting industrial, commercial, or other activities.

Micro-enterprise is an economic entity of any legal form and form of ownership where the average number of employees for a reporting period (a calendar year) is less than 10 persons, and the annual income from any activity does not exceed an amount equivalent to EUR2 million calculated based on the annual average exchange rate published by the National Bank of Ukraine (NBU).

Small enterprise is an economic entity of any legal form and form of ownership where the average number of employees for a reporting period (a calendar year) is less than 50 persons, and the annual income from any activity does not exceed an amount equivalent to EUR10 million calculated based on the annual average exchange rate published by the NBU.

Medium-sized enterprise is an economic entity of any legal form and form of ownership which cannot be classified as a micro-enterprise, small or large enterprise.

Large enterprise is an economic entity of any legal form and form of ownership where the average number of employees in a reporting period (a calendar year) is more than 250, and the annual income from any activity exceeds an amount equivalent to EUR50 million calculated based on the average annual exchange rate published by the NBU.

Individual enterprise (sole proprietorship) is a business arrangement based on the personal property of an individual and exclusively on their labor.

Family business is an economic entity based on the property and labor of members of one family living together.

Features of a family business are as follows: its participants are answerable for its obligations with all the capital and their personal property; there are no problems with the distribution of profit; the possibility of using labor cooperation, combining different professions in doing business; implicit confidence in the relationship between the members of a family business, a guarantee of preserving business information confidentiality; readiness to work hard with long working hours; the possibility for the heirs to get “family secrets” related to the production technology used.

Private enterprise is an economic entity, based on the property of an individual citizen, with the right to hire a workforce.

State-owned enterprise is an economic entity based on the public property.

Employee-owned enterprise is an economic entity based on the property of the labor collective of an enterprise, cooperative, another statutory partnership, public or religious organization.

Municipal enterprise is an economic entity based on the property of administrative territories.

Mixed enterprise is an economic entity based on joining up the property of different owners.

After the state registration, an enterprise is recognized as a legal entity.

Legal entity is a subject of civil law which has the following features: independence of its functioning from natural persons which are part of it; availability of its own property separated from the property of the participants; the right to acquire, use, and dispose of the property; the right to implement, on its own behalf, other actions permitted by law; the

right, on its own behalf, to resolve disputed issues regarding its activity and conflict situations in court or by arbitration; independent property liability; availability of a settlement account and other accounts in banks, independent balance, seals with its name, trademark, etc.

According to the current legislation, legal entities in Ukraine can have various legal forms.

1.2 Legal forms of enterprises

A market economy involves a large variety of legal forms of enterprises. This is explained by the fact that part of the economy of a country is managed by private citizens, either individually or collectively, while the rest of it – by organizations established by the government or local authorities. Moreover, the scope of business activities carried out by enterprises is different.

Association of natural persons and legal entities for joint activities allows increasing the volume of attracted resources. At the same time, enterprises with several owners are characterized by a low efficiency of decision-making.

In Ukraine, the most common legal form of enterprises is business partnership.

Business partnerships are enterprises, institutions, organizations which are established upon mutual agreement between legal entities and citizens and involve joining up their property and business activities for the purpose of obtaining profit.

Contribution of founders and participants of an economic partnership may be: cash, including in foreign currency; buildings, facilities, equipment; final product; other material values; securities; intellectual resources; property rights, etc.

Types of business partnerships in Ukraine:

- joint-stock partnership;
- limited liability partnership;
- additional liability partnership;
- full partnership;
- limited partnership.

Joint-stock partnership is a business arrangement where the charter capital is divided into a certain number of shares of an equal nominal value.

The shareholders' liability in a partnership is limited only to the amount they paid for their shares. Types of joint-stock partnerships are: an open (public) joint-stock partnership, a closed (private) joint-stock partnership.

Open (public) joint-stock partnership is a joint-stock partnership whose shares can be distributed via open subscription, bought or sold on stock exchanges.

Closed (private) joint-stock partnership is a joint-stock partnership whose shares are allocated among the founders and cannot be distributed via open subscription, bought or sold on stock exchanges.

The founders of a joint-stock partnership must: declare their intention to establish a joint-stock partnership; subscribe for its shares; hold the constituent meeting; carry out its state registration.

Features of creating an open joint-stock partnership:

- open subscription for shares is organized by the founders;
- the founders are obliged to own the company's shares for the amount of not less than 25% of the charter capital;
- the period of open subscription cannot exceed 6 months;
- a joint-stock partnership is considered to be established if the amount of the shares subscribed for is no less than 60%.

In a closed joint stock partnership, the founders must contribute at least 50% of the nominal value of the shares before the date of the constituent meeting.

Limited liability partnership is a business arrangement where the charter capital is divided into shares the size of which is determined by constituent documents.

Features of a limited liability partnership are: the participants' liability is limited only to the amount they contributed; by the time of the registration of the partnership, they are paid the cost of the share of the company's property proportional to their share in the charter capital as well as the one owned by them; when a participant leaves the company, they are paid the cost of the share of the company's property proportional to their share in the charter capital as well as the share of their profit.

Additional liability partnership is a business arrangement where the charter capital is divided into shares, with their size being specified by its constituent documents. Participants of this type of partnership are liable for its obligations to the limit of their contribution to the charter capital, and, in case of insufficiency of these amounts, additionally by the property possessed by them in the amount proportional to their contribution.

Full partnership is a business arrangement where all participants are engaged in joint business activities and jointly liable for obligations of the partnership with all their property. The liability of participants of a full partnership for repaying its debts is as follows: a participant is responsible for debts of the partnership, regardless of whether they arose after or before their joining the partnership; if upon liquidation of a full partnership it turns out that the available property is not enough to pay all debts, all participants of the partnership are jointly liable for repaying the deficient amount with all their property.

Limited partnership is a company that includes, along with one or more participants liable for obligations of the partnership with all their property, one or more participants (contributors) whose liability is limited to their contribution to the property of the partnership. The aggregate size of the contributors' shares must not exceed 50% of the partnership's property. At the time of the registration of a limited partnership, each of the contributors must make not less than 25% of the amount they contribute. If contributors to a limited partnership conclude an agreement on behalf and in the interests of the limited partnership having no appropriate powers, they: together with fully liable participants repay their obligations to the creditors under the agreement with all their property (in case of approval of the contributors' activities by the limited partnership); repay the liabilities themselves with all their property (if the conclusion of the agreement is not approved).

1.3 Legal forms of amalgamation of enterprises

Amalgamation of enterprises is an organization formed on a voluntary basis as part of two or more enterprises in order to coordinate their production, scientific and other activities to address common economic and social problems.

The main legal forms of amalgamation of enterprises are:

Association is the contractual amalgamation created for the purpose of constant coordination of economic activity of the united enterprises by centralization of one or several production and administrative functions, development of specialization and cooperation of production, organization of joint productions on the basis of combining the financial and material resources by participants to meet mainly economic needs of association members.

Corporation is the contractual amalgamation created on the basis of a combination of production, scientific and commercial interests of the united enterprises with the delegation of certain authorities of centralized regulation of the activities of each of the participants to the governing bodies of the corporation.

Consortium is the temporary statutory amalgamation of enterprises to achieve its members a certain common economic goal (implementation of targeted programs, scientific and technical, construction projects, etc.). If the goal of its creation is achieved, the consortium shall cease its activities.

Concern is the statutory amalgamation of enterprises and other organizations based on their financial dependence on one or a group of members of the amalgamation with the centralization of the functions of scientific, technical and industrial development, investment, financial, foreign economic and other activities.

1.4 Legal framework for the creation of the enterprise

The government, regulating any activity, should manage the degree of accessibility of values adopted in the society and necessary to satisfy interests of all its members.

The procedure for the creation of enterprises of various legal forms and governmental control over entrepreneurial activity are regulated by the norms specified in acts issued by legislative and executive bodies.

Activities of economic entities in Ukraine are subject to additional regulation by the provisions enshrined in a collective contract, agreement.

Collective contract, agreement is concluded on the basis of the current legislation, obligations accepted by the parties in order to

regulate their production, labor, and socio-economic relations and harmonize interests of the employees and employers involved.

Collective contract is concluded in enterprises which use hired labor and have the rights of a legal entity, regardless of the form of their ownership and management. A collective contract can be concluded in business units of an enterprise within the competence of these units.

Collective contract is concluded between the employer, on the one part, and one or more trade union bodies, or, in the absence of such bodies, representatives of employees elected and authorized by the labor collective, on the other part.

Governmental control of entrepreneurship is a direction of the national policy aimed at improving legal control over economic as well as administrative relations between regulatory or other government authorities and economic entities; preventing the adoption of economically inappropriate and ineffective regulatory acts; reducing the government intervention in activities of economic entities; eliminating obstacles for the development of economic activities carried out within the powers, in the order and manner established by the Constitution and laws of Ukraine.

The State Service of Ukraine for Regulatory Policy and Entrepreneurship Development is the central body that ensures the formation and implementation of the national policy in the field of development and provision of support for entrepreneurship. Its activities are directed and coordinated by the Cabinet of Ministers of Ukraine.

The main task of this body is to summarize the practice of applying legislation on business issues, work out proposals aimed at its improvement, and form the national policy concerning entrepreneurial activity. In addition, the Service contributes to the development of small businesses, the system for their advisory and information support and prepares proposals for the implementation and improvement of mechanisms for financial and credit support for entrepreneurial activities, including those related to foreign economic activity, coordinates the system for training and retraining of staff, etc.

Limitation (licensing) concerns only those types of entrepreneurial activities which directly affect human health, the natural environment, and national security.

In order to conduct licensed entrepreneurial activities, it is necessary to obtain an appropriate license and observe certain conditions and rules for the implementation of these activities (license provisions), which are established by the Cabinet of Ministers of Ukraine or the body authorized by it.

License is a document issued by the Cabinet of Ministers of Ukraine or an executive body authorized by it, according to which the licensee has the right to carry out certain types of entrepreneurial activity.

An enterprise is created based on the decision of the owner of the property, authorized by them body of the parent enterprise, organization or by the decision of the labor collective.

The decision to establish an enterprise must be approved by the Antimonopoly Committee of Ukraine.

An enterprise may be created as a result of forced division of another enterprise, in accordance with the Antimonopoly Law of Ukraine, or a splitting off one or more structural units from an existing enterprise, organization, as well as on the basis of a structural unit of going concerns by the decision of their labor collectives with the consent of the owner or the body authorized by them.

In cases where operation of an enterprise requires using natural resources, the permission for their use is issued by the relevant Council of People's Deputies; in cases envisaged by legislative acts – by the Verkhovna Rada of Ukraine, on a submission of the primary natural resource user and in the presence of a positive conclusion of the state environmental inspectorate or the relevant Council of People's Deputies.

In accordance with the procedure established by the Land Code of Ukraine, the land plot may be transferred to the enterprise in the collective ownership or into use, including on lease terms.

An enterprise acquires the rights of a legal entity from the date of its state registration.

Charter capital is the provided to an enterprise or attracted by it in accordance with the current legislation financial resources in the form of cash or investments in the property, values, intangible assets, securities which are allocated to the enterprise on the basis of the right of ownership or economic jurisdiction.

At the expense of the charter capital, an enterprise forms its fixed assets and current assets (working capital).

Entrepreneurs' rights regarding the formation of the charter capital are enshrined in the laws of Ukraine "On Property", "On Business Associations".

The size of the charter capital varies, it may increase due to:

- adding to it a part of the profit earned as a result of the growth of the equity capital;
- putting into circulation capital investments at the expense of the equity funds (profit, amortization deductions);
- increasing the value of fixed assets in the process of their revaluation (determined by the state).

It may decrease due to unprofitable entrepreneurial activity.

State-owned enterprises increase their charter capitals at the expense of their own savings.

For this purpose, the enterprise can use within 30-80% of the amount of income remaining at their disposal after taxes and compulsory payments.

Thus, the value of fixed assets of the enterprise increases and, accordingly, the increase of the charter capital occurs.

Entrepreneurs need to remember that in order to ensure normal functioning of enterprises, it is necessary to increase the charter capital and current assets (working capital).

Joint-stock partnerships (Am.E. joint-stock companies) form the charter capital through the sale of shares.

Limited liability partnerships (Am.E. limited liability companies) – at the expense of the participants' contributions. These contributions determine the share of each participant in the charter capital of the enterprise.

The use of the charter capital is characterized through determining indicators reflecting the efficiency of the use of fixed production and current assets (working capital).

State registration of an enterprise is carried out in the city executive committee, district council at the place of business or place of residence of the subject of entrepreneurial activity, unless otherwise provided by law.

The following documents are required to be submitted for the state registration of a legal entity:

- decision of the owner (owners) of the property or a body authorized by them to establish a legal entity (except for a private company);
- charter, if required in respect to the organizational form of entrepreneurship being created;
- registration card of a standard form, which is at the same time an application for the state registration;
- document certifying the payment by the owner of the contribution to the charter capital of the subject of entrepreneurial activity in the amount stipulated by law;
- document certifying the payment of the state registration fee.

Citizens intending to carry out entrepreneurial activity without establishing a legal entity submit a registration card of a standard form, which is at the same time an application for the state registration, a copy of the certificate of assignment of the identification number and a document certifying the payment of the state registration fee.

The location of the subject of entrepreneurial activity (legal entity) on the date of state registration may be the place of business (place of residence) of one of the founders or the location at another address, which is confirmed by the lease agreement or other relevant agreement.

The state registration authorities are prohibited from requiring subjects of entrepreneurial activity additional documents not provided for by this law.

State registration of subjects of entrepreneurial activity is carried out in the presence of all necessary documents, upon submission of the application, within five working days.

During this period, the state registration authorities are obliged to enter the data from the registration card in the register of subjects of entrepreneurial activities and issue a certificate of state registration of the established sample with the assigned identification code (for legal entities), which is provided to the state registration authorities by state statistics authorities, or the identification number of the person – the payer of taxes and other mandatory deductions.

Within a five-day period from the date of registration, the state registration authorities forward a copy of the registration card with a

mark about the state registration to the relevant state tax authorities and state statistics authorities and submit information on the state registration of the subject of entrepreneurial activity to the Social Insurance Fund and the Pension Fund of Ukraine.

The certificate of state registration of the subject of entrepreneurial activity and a copy of the document confirming its registration with the state tax authority is the basis for opening accounts in any bank of Ukraine and other states at the choice of the subject of entrepreneurial activity and with the consent of these banks in accordance with the procedure established by the NBU. Within three working days, the subject of entrepreneurial activity must send a notice on the opening or closing of accounts in banks to the state tax authorities where it is registered as a payer of taxes and fees (mandatory deductions).

The charter of an enterprise is a collection of mandatory rules governing the relationship of the enterprise with other entities as well as its individual activities.

The charter is approved by the owner of the property, and – for state enterprises – the owners of the property with the participation of the labor collective.

The charter of an enterprise determines: the owner and name of the enterprise; location; core activities and their purpose; management bodies, procedure for their formation; competence and authority of the labor collective and its election bodies; procedure for the formation of the enterprise's property; conditions for reorganization and termination of the activities of the enterprise.

The name of the enterprise specifies whether it is a plant, factory, workshop, etc. and its type (individual, private, employee-owned, state-owned, etc.).

The charter of an enterprise determines the body which has the right to represent the interests of the labor collective (the council of the labor collective, council of the enterprise, trade union committee, etc.).

In Ukraine, limited liability partnerships can operate on the basis of a model charter.

The Model Charter is a collection of mandatory rules that establishes the procedure for organization and management of a limited liability partnership, which is approved by the Cabinet of Ministers of

Ukraine and at the request of the participants is taken as a basis for the conduct of activities.

The model charter of a limited liability partnership was approved by the Resolution of the Cabinet of Ministers of Ukraine “On Approval of the Model Charter of a Limited Liability Company” dated November 16, 2011 No. 1182. The model charter of a limited liability partnership consists of the following sections:

1. General terms.
2. Legal status of the partnership.
3. Participants to the partnership.
4. Charter capital of the partnership.
5. Property of the partnership.
6. Profit of the partnership and its use. The order of coverage of losses. Funds of the partnership.
7. Corporate bodies of the partnership.
8. General meetings.
9. Executive body of the partnership.
10. Auditing committee.
11. Staff of the partnership.
12. Accounting and reporting.
13. Procedure for amending the Charter.
14. Termination of the partnership.

The essence of the responsibility of subjects of entrepreneurial activity is as follows:

- for breaching the contractual obligations, credit and settlement agreements, tax regulation, requirements for quality of products, and other rules of economic activity, the enterprise carries responsibility in accordance with the legislation of Ukraine;
- payment of fines for breaching the contractual obligations as well as compensation for the losses caused does not relieve the enterprise, without the consent of the other party to contract, of fulfilling responsibilities for the supply of products, works, or services.

The enterprise is obliged to:

- protect the environment; compensate for the damage caused by irrational use of land and other natural resources and environmental pollution;

- ensure industrial safety, sanitary and hygienic standards and requirements for the protection of health of its employees, the population and consumers of products;
- pay fines to the relevant local Councils of People's Deputies, in cases stipulated by law.

Recommended videos

1. *Video “Legal forms of business organization”*. Chanel “Deric Business Class” on the YouTube.

Link: <https://www.youtube.com/watch?v=v3m35D2Icgs>

2. *Video “Top 10 Most valuable companies in the world”*. Chanel “Deric Business Class” on the YouTube.

Link: <https://www.youtube.com/watch?v=93IpDtvGrQ8>

3. *Video “Top 10 Most expensive stocks in the world 2021”*. Chanel “Deric Business Class” on the YouTube.

Link: <https://www.youtube.com/watch?v=MWKiTzm9WX4>

4. *Video “What are mergers and acquisitions (M&A)?”*. Chanel “Educationleaves” on the YouTube.

Link: <https://www.youtube.com/watch?v=gup4KmPirLQ>

Theoretical questions

1. What is “enterprise”?
2. Describe features of an enterprise.
3. How are enterprises classified according to their purpose?
4. What is “for-profit organization”?
5. What is “not-for-profit organization”?
6. How are enterprises classified in terms of scope of their economic activities?
7. How are enterprises classified in terms of legal status?
8. How are enterprises classified in terms of type and nature of their economic activities?
9. How are enterprises classified in terms of technological (territorial) integrity and degree of subordination?
10. How are enterprises classified in terms of ownership of capital?

11. How are enterprises ranked in terms of the number of employees and volume of gross income from sales of products?
12. How are enterprises classified in terms of form of ownership?
13. Name the main legal forms of enterprises.
14. What is “joint-stock partnership”?
15. Describe the types of joint-stock partnerships.
16. What is “limited liability partnership”?
17. What is “additional liability partnership”?
18. What is “limited partnership”?
19. What is “full partnership”?
20. What is “amalgamation of enterprises”?
21. What are the legal forms of amalgamation of enterprises?
22. What is “association”?
23. What is “corporation”?
24. What is “consortium”?
25. What is “concern”?
26. The approval of what state authority of Ukraine is required to establish an enterprise?
27. What state authority gives permission for carrying out activities in cases when operation of an enterprise involves using natural resources?
28. When does an enterprise acquire the rights of a legal entity?
29. What is “charter capital”?
30. Describe the typical procedure for forming the charter capital of an enterprise.
31. What or who determines the size of the charter capital?
32. How do joint-stock partnerships form their charter capital?
33. How do limited liability partnerships form their charter capital?
34. What is “charter of an enterprise”?
35. Enterprises of which organizational and legal form in Ukraine have the possibility of using the model charter?
36. What documents are submitted for the state registration of a legal entity?
37. Describe the procedure for obtaining the certificate of state registration of the subject of entrepreneurial activity.
38. Which types of activities are subject to the state registration procedure?

39. What is the responsibility of subjects of entrepreneurial activity?

40. What are the sanctions against enterprises for breaching the contractual obligations, credit and settlement agreements, tax regulation, requirements for quality of products, and other rules of economic activity?

Test tasks

1. *Enterprise is ...*

a) independent economic entity created by a competent government or local self-government body, or other entities to meet social and personal needs through systematic implementation of industrial, research, commercial, and other economic activities;

b) economic unit that uses factors of production to manufacture products, goods or services, which it then sells to a household, other firms or the state;

c) targeted pooling of resources to achieve a specific economic goal;

d) legal entity acting on the basis of private property of one or more citizens, foreigners or stateless persons using hired labor.

2. *Main task of the enterprise is ...:*

a) satisfy of market needs for own profit;

b) effective use of fixed assets and working capital;

c) increase productivity and effective motivation of personnel;

d) improve the quality of services and products.

3. *Identify the attribute of the enterprise. "Suitability of manufacturing processes to products manufactured, relevant composition of productive assets, unified technical policy, harmonized work of auxiliary and service facilities" is ...*

a) production and technical unity;

b) organizational and social unity;

c) financial and economic independence;

d) all answers are correct.

4. *Identify the attribute of the enterprise. “Presence of a labor collective, the head and administration, having the rights of a legal entity and requisites” is ...*

- a) production and technical unity;
- b) organizational and social unity;
- c) financial and economic independence;
- d) all answers are correct.

5. *Identify the attribute of the enterprise. “Ability to independently determine the areas of economic development, structure, output volumes, directions of distribution of the enterprise’s profits, forms and amounts of material incentives” is ...*

- a) production and technical unity;
- b) organizational and social unity;
- c) financial and economic independence;
- d) all answers are correct.

6. *Uncommercial organizations are:*

- a) consumer cooperatives;
- b) charitable foundations;
- c) municipal unitary enterprises;
- d) state unitary enterprises.

7. *What are the characteristics of a not-for-profit enterprise?*

- a) develops at own expense;
- b) engaged in profit-making activities;
- c) operates at the expense of its own funds and develops through profitable activities;
- d) all answers are correct.

8. *For-profit organizations are:*

- a) business partnerships;
- b) public organizations;
- c) production cooperatives;
- d) religious organizations.

9. *What are the characteristics of a not-for-profit (non-entrepreneurial) organization?*

- a) exists at the expense of budget funds;
- b) cannot have a profit by the nature of its activities;
- c) provided by budget financing, since cannot have a profit according to the nature of its activities;
- d) all answers are correct.

10. *Economic entity of any legal form and form of ownership where the average number of employees for a reporting period (a calendar year) is less than 10 persons, and the annual income from any activity does not exceed an amount equivalent to EUR2 million calculated based on the annual average exchange rate published by the NBU is ...*

- a) micro-enterprise;
- b) small enterprise;
- c) medium-sized enterprise;
- d) large enterprise.

11. *Economic entity of any legal form and form of ownership where the average number of employees for a reporting period (a calendar year) is less than 50 persons, and the annual income from any activity does not exceed an amount equivalent to EUR10 million calculated based on the annual average exchange rate published by the NBU is ...*

- a) micro-enterprise;
- b) small enterprise;
- c) medium-sized enterprise;
- d) large enterprise.

12. *Economic entity of any legal form and form of ownership where the average number of employees in a reporting period (a calendar year) is more than 250, and the annual income from any activity exceeds an amount equivalent to EUR50 million calculated based on the average annual exchange rate published by the NBU is ...*

- a) micro-enterprise;
- b) small enterprise;

- c) medium-sized enterprise;
- d) large enterprise.

13. Economic entity based on the property of administrative territories is ...

- a) state-owned enterprise;
- b) employee-owned enterprise;
- c) municipal enterprise;
- d) mixed enterprise.

14. Total debt of the company “Etalon” amounted to 800 thousand UAH. The owners of the enterprise are 2 entrepreneurs, whose contributions amounted to 300 thousand UAH and 400 thousand UAH accordingly. As a result, the debt of each participant amounted to 400 thousand UAH. This company is ...

- a) additional liability company;
- b) limited liability partnership;
- c) limited partnership;
- d) full partnership.

15. Total debt of the company “Triad” amounted to 400 thousand UAH. The owners of the enterprise are 2 entrepreneurs – A and B, whose contributions amounted to 100 thousand UAH and 200 thousand UAH accordingly. As a result, the debt of participant A amounted to 133,33 thousand UAH, the debt of participant B – 266,67 thousand UAH. This company is ...

- a) additional liability company;
- b) limited liability partnership;
- c) limited partnership;
- d) full partnership.

16. Temporary statutory amalgamation of enterprises to achieve its members a certain common economic goal is...

- a) association;
- b) corporation;
- c) consortium;
- d) concern.

17. Statutory amalgamation of enterprises and other organizations based on their financial dependence on one or a group of members is ...

- a) association;
- b) corporation;
- c) consortium;
- d) concern.

18. Compilation of mandatory rules, which regulate the mutual relations of the enterprise with the other business entities, is ...

- a) charter of the enterprise;
- b) collective agreement;
- c) industry agreement;
- d) all answers are correct.

19. Basic document regulated the activity of the enterprise is ...

- a) Economic Code of Ukraine;
- b) statute;
- c) license;
- d) patent.

20. Enterprise loses the right of a legal entity from the moment of...:

- a) losing of its own stamp;
- b) exclusion from the state register;
- c) establishment of a liquidation commission;
- d) there are no correct answer.

Individual practical tasks

X – the second to last number of the individual plan of the student

Y – the last number of the individual plan of the student

Task 1. The owners of the economic partnership are 3 entrepreneurs. The amount of the contributions of the first participant was $300+X$ thousand UAH, the second participant – $250-Y$ thousand UAH, the third participant – $150+X-Y$ thousand UAH.

The enterprise received a gross income of $1850-X$ thousand UAH, gross expenses – $2950+Y$ thousand UAH.

Determine the amount of debt obligations of each partner of the company, if the enterprise is organized in the form of:

- joint-stock company;
- limited liability company;
- additional liability company;
- full partnership;
- limited partnership where the first participant is a full participant and the second and third participants are depositors.

Evaluation criteria for task 1

$DO_{1,2,3}$ for JSC – 1 point. $DO_{1,2,3}$ for LLC – 1 point. $DO_{1,2,3}$ for ALC – 1 point. $DO_{1,2,3}$ for FP – 1 point. $DO_{1,2,3}$ for LP – 1 point. *Total 5 points for task 1.*

Task 2. According to the results of the reporting period, the joint-stock company received income from sales in the amount of $37550+X-Y$ thousand UAH. The cost of annual production amounted to $26350+Y-X$ thousand UAH.

According to the decision of the shareholder's meeting, $25+X$ % of the company's net profit is used to pay dividends.

Charter capital of the joint-stock company is 45000 thousand UAH. Shareholder A owns preferred shares for the amount 5000 thousand UAH. Shareholder B owns shares for the amount 10000 thousand UAH, 40% of which – preferred. Shareholders C and D own ordinary shares for the amount 12000 thousand UAH and 18000 thousand UAH accordingly.

The amount of dividends on preferred shares is $5+Y$ % per annum.

Determine the amount of dividends that will receive each of the members of the joint-stock company.

Evaluation criteria for task 2

D for shareholder A – 1 point. D for shareholder B – 1 point. D for shareholder C – 1 point. D for shareholder D – 1 point. DF – 0.5 point. ΔDF – 0.5 point. *Total 5 points for task 2.*

Methodical guidelines for solving practical tasks

Methodical instructions for completing the task 1:

1. The amount of debt obligations of the enterprise is the difference between gross expenses and gross income:

$$DO = GE - GI,$$

where GE – gross expenses of the enterprise, thousand UAH;

GI – gross income of the enterprise, thousand UAH.

2. If the enterprise is organized in the form of a joint-stock company or in the form of a limited liability company, then the investors are responsible for the debt obligations of the company within the limits of the amounts of contributions made by them.

3. If the enterprise is organized in the form of an additional liability company, then the depositors are responsible for the following amounts of debt obligations:

$$DO_1 = C_1 + \frac{C_1}{C_1 + C_2 + C_3} \cdot \Delta DO,$$

$$DO_2 = C_2 + \frac{C_2}{C_1 + C_2 + C_3} \cdot \Delta DO,$$

$$DO_3 = C_3 + \frac{C_3}{C_1 + C_2 + C_3} \cdot \Delta DO,$$

where $C_{1,2,3}$ – the amounts of contributions of the first, second and third members of the company, respectively, thousand UAH;

ΔDO – the balance of the company's debt obligations, which is not offset by contributions from depositors, thousand UAH.

4. If the enterprise is organized in the form of full partnership, then the depositors are responsible for such amounts of debt obligations:

$$DO_1 = C_1 + \frac{\Delta DO}{3},$$

$$DO_2 = C_2 + \frac{\Delta DO}{3},$$

$$DO_3 = C_3 + \frac{\Delta DO}{3}.$$

5. If the enterprise is organized in the form of a limited partnership (where the first participant is a full participant and the second and third participants are depositors), then the contributors are responsible for the debt obligations of the partnership within the limits of the amounts they have made, and the full member – all his property.

Methodical instructions for completing the task 2:

1. The dividend fund of the joint-stock company is:

$$DF = \frac{DF_{\%} \cdot ((I - C) - CIT)}{100},$$

where $DF_{\%}$ – the percentage of net profit, which is directed to the formation of the dividend fund of the joint-stock company, %;

I – income from sales, thousand UAH;

C – cost of annual production, thousand UAH;

CIT – corporate income tax, thousand UAH.

2. Dividends on preferred shares are paid to shareholders first and in a fixed amount:

$$D_{psh} = \frac{D_{psh\%} \cdot VDS}{100},$$

where $D_{psh\%}$ – annual percentage of dividends received by a shareholder on preferred shares, %;

VDS – the value of the depositor's shares, thousand UAH.

3. Dividends on ordinary shares are paid to shareholders after the payment of dividends on preferred shares:

$$D_{\text{osh}} = \frac{D_{\text{osh}\%} \cdot \text{VDS}}{100},$$

where $D_{\text{osh}\%}$ – the annual percentage of dividends received by a shareholder for ordinary shares, %:

$$D_{\text{osh}\%} = \frac{\Delta \text{DF}}{\sum \text{TV}_{\text{osh}}} \cdot 100\%,$$

where ΔDF – residual dividend fund after paying dividends to shareholders on preferred shares, thousand UAH;

$\sum \text{TV}_{\text{osh}}$ – total value of ordinary shares, thousand UAH.

Examples of solutions to practical tasks

Example of solution to practical task 1:

Task 1. The owners of the economic partnership are 3 entrepreneurs. The amount of the contributions of the first participant was 300 thousand UAH, the second participant – 250 thousand UAH, the third participant – 150 thousand UAH.

The enterprise received a gross income of 1850 thousand UAH, gross expenses – 2950 thousand UAH.

Determine the amount of debt obligations of each partner of the company, if the enterprise is organized in the form of:

- joint-stock company;
- limited liability company;
- additional liability company;
- full partnership;
- limited partnership where the first participant is a full participant and the second and third participants are depositors.

1. The debt obligations of the enterprise is the difference between gross expenses and gross income:

$$DO = 2950 - 1850 = 1100 \text{ thousand UAH}$$

2. If the enterprise is organized in the form of a joint-stock company the depositors are responsible for such amounts of debt obligations:

$$DO_1 = 300 \text{ thousand UAH}$$

$$DO_2 = 250 \text{ thousand UAH}$$

$$DO_3 = 150 \text{ thousand UAH}$$

3. The balance of the company's debt obligations, which is not offset by contributions from depositors, is:

$$\Delta DO = 1100 - (300 + 250 + 150) = 400 \text{ thousand UAH}$$

4. If the enterprise is organized in the form of an additional liability company the depositors are responsible for such amounts of debt obligations:

$$DO_1 = 300 + (300 / (300 + 250 + 150)) * 400 = 471.43 \text{ thousand UAH}$$

$$DO_2 = 250 + (250 / (300 + 250 + 150)) * 400 = 392.86 \text{ thousand UAH}$$

$$DO_3 = 150 + (150 / (300 + 250 + 150)) * 400 = 235.71 \text{ thousand UAH}$$

Let's check:

$$DO = 471.43 + 392.86 + 235.71 = 1100 \text{ thousand UAH}$$

That's right!

5. If the enterprise is organized in the form of full partnership, then the depositors are responsible for such amounts of debt obligations:

$$DO_1 = 300 + 400 / 3 = 433.34 \text{ thousand UAH}$$

$$DO_2 = 250 + 400 / 3 = 383.33 \text{ thousand UAH}$$

$$DO_3 = 150 + 400 / 3 = 283.33 \text{ thousand UAH}$$

Let's check:

$$DO = 433.34 + 383.33 + 283.33 = 1100 \text{ thousand UAH}$$

That's right!

6. If the enterprise is organized in the form of a limited partnership (where the first participant is a full participant and the second and third participants are depositors) the depositors are responsible for such amounts of debt obligations:

$$DO_1 = 300 + 400 = 700 \text{ thousand UAH}$$

$$DO_2 = 250 \text{ thousand UAH}$$

$$DO_3 = 150 \text{ thousand UAH}$$

Let's check:

$$DO = 700 + 250 + 150 = 1100 \text{ thousand UAH}$$

That's right!

Example of solution to practical task 2:

Task 2. According to the results of the reporting period, the joint-stock company received income from sales in the amount of 37550 thousand UAH. The cost of annual production amounted to 26350 thousand UAH. According to the decision of the shareholder's meeting, 25% of the company's net profit is used to pay dividends. Charter capital of the joint-stock company is 45000 thousand UAH. Shareholder A owns preferred shares for the amount 5000 thousand UAH. Shareholder B owns shares for the amount 10000 thousand UAH, 40% of which – preferred. Shareholders C and D own ordinary shares for the amount 12000 thousand UAH and 18000 thousand UAH accordingly. The amount of dividends on preferred shares is 5% per annum. Determine the amount of dividends that will receive each of the members of the joint-stock company.

1. The dividend fund of the joint-stock company is:

$$DF = 25/100 * ((37550 - 26350) * 0.82) = 2296 \text{ thousand UAH}$$

2. Dividends on preferred shares are paid to shareholders first and in a fixed amount. The amount of dividends that will receive by shareholders A and B on the preferred shares is:

$$D_{pshA} = 5000 * 5/100 = 250 \text{ thousand UAH}$$

$$D_{pshB} = 10000 * 0.4 * 5/100 = 200 \text{ thousand UAH}$$

3. The residual dividend fund after paying dividends to shareholders on preferred shares is:

$$\Delta DF = 2296 - 250 - 200 = 1846 \text{ thousand UAH}$$

4. The annual percentage of dividends received by a shareholder for ordinary shares is:

$$D_{osh\%} = 1846 / (10000 * 0.6 + 12000 + 18000) * 100 = 5.13\%$$

5. The amount of dividends that will receive by shareholders B, C and D on the ordinary shares is:

$$D_{oshB} = 10000 * 0.6 * 5.13/100 = 307 \text{ thousand UAH}$$

$$D_B = 200 + 307 = 507 \text{ thousand UAH}$$

$$D_{oshC} = 12000 * 5.13/100 = 615.6 \text{ thousand UAH}$$

$$D_{oshD} = 18000 * 5.13/100 = 923.4 \text{ thousand UAH}$$

Let's check:

$$DF = 250 + 507 + 615.6 + 923.4 = 2296 \text{ thousand UAH That's right!}$$

SECTION 2

ENTERPRISE MANAGEMENT

2.1 Essence, functions and methods of the enterprise management

2.2 Organizational structures of the enterprise management

2.3 Internal and external environment of the enterprise

2.1 Essence, functions and methods of the enterprise management

Enterprise management is a purposeful influence on the factors of production in order to ensure the successful operation of the enterprise.

Functions of the enterprise management are:

1. *planning* – defining the system of goals of the enterprise, ways and means of achieving them in the short term, medium term and long term perspective;

2. *organization* – combining factors of production in the most rational scale and structure;

3. *motivation* – encouraging the enterprise's staff to perform their duties to the best of their ability;

4. *control* – quantitative and qualitative assessment of compliance of the actual level of development of the enterprise to its planned level;

5. *coordination* – ensuring the maximum compliance of the actual level of development of the enterprise to its planned level.

Methods of the enterprise management are:

1. *economic methods* – the methods aimed at the encouraging staff to work effectively through material incentives;

2. *administrative methods* – the methods that involve influencing employees based on institution of authority;

3. *socio-psychological methods* – the methods of influencing employees based on the creating a corporate culture.

2.2 Organizational structures of the enterprise management

Organizational structures of the enterprise management is totality of subordinate management units that ensure the relationship between

departments of the enterprise, the distribution between them of rights, duties and responsibilities.

Types of organizational structures of enterprise management are:

- linear;
- functional;
- product;
- matrix.

Linear organizational structure of enterprise management is the simplest, as it is characterized by a direct organizational relationship between the head of the enterprise and the heads of production divisions.

In *functional organizational structure of enterprise management* an organizational relationship between the head of the enterprise and the heads of production divisions is already indirect and provided by functional heads (deputies).

Product organizational structure of enterprise management takes place in the case of a significant range of products and is characterized by the emergence of a new hierarchical level – “product directors”.

Matrix organizational structure of enterprise management is a structure based on the principle of “double subordination”, in which employees are subordinated, on the one hand, to the head of their division, on the other hand – to the product director.

2.3 Internal and external environment of the enterprise

Enterprise is influenced by factors of the *internal environment* and the *external environment*.

In turn, the internal environment's factors are divided into *factors of direct influence* and *factors of indirect influence*. Factors of direct influence include suppliers, investors, intermediaries, government agencies and the legal framework, consumers, competitors; factors of indirect influence – natural-geographical factors, demographic factors, ecological factors, scientific-technical factors, socio-economic factors, political factors, international factors.

The *external environment's* factors include technical and organizational conditions of the enterprise: fixed assets and current assets, personnel, information, finance, organization of production and management, marketing.

Recommended videos

1. Video “*What is management? Concept of Management. Levels of management*”. Chanel “Educationleaves” on the YouTube.

Link: <https://www.youtube.com/watch?v=GZ2dmbDmB5I>

2. Video “*Management process*”. Chanel “Educationleaves” on the YouTube.

Link: <https://www.youtube.com/watch?v=q6LMjurECZM>

3. Video “*Types of organizational structure in management*”. Chanel “Educationleaves” on the YouTube.

Link: <https://www.youtube.com/watch?v=4o6v0XIylzA>

4. Video “*Management styles*”. Chanel “Educationleaves” on the YouTube.

Link: <https://www.youtube.com/watch?v=-waR0t5SU2g>

5. Video “*Management skills. 10 skills every manager should have*”. Chanel “Educationleaves” on the YouTube.

Link: <https://www.youtube.com/watch?v=xHBhFKBLhWs>

6. Video “*MBO. What is management by objective? Advantages and disadvantages of MBO*”. Chanel “Educationleaves” on the YouTube.

Link: <https://www.youtube.com/watch?v=K57rvR2nGu0>

7. Video “*Decision making. Types of decision making. Decision making techniques*”. Chanel “Educationleaves” on the YouTube.

Link: <https://www.youtube.com/watch?v=VFjkqmUP84w>

8. Video “*Management VS Administration*”. Chanel “Educationleaves” on the YouTube.

Link: <https://www.youtube.com/watch?v=nHkh6RjGbAc>

9. Video “*Leadership VS Management*”. Chanel “Educationleaves” on the YouTube.

Link: <https://www.youtube.com/watch?v=mhkLc0HEtR0>

10. Video “*Is management an art or a science?*”. Chanel “Educationleaves” on the YouTube.

Link: https://www.youtube.com/watch?v=_6lM8bz1Hoo

11. Video “*What is KAIZEN?*”. Chanel “Educationleaves” on the YouTube.

Link: <https://www.youtube.com/watch?v=Zc8DM7aQgIU>

12. Video “Best 7 books to learn management”. Chanel “Education leaves” on the YouTube.

Link: <https://www.youtube.com/watch?v=YbgvEOJGyqQ>

Theoretical questions

1. What is “enterprise management”?
2. What is the purpose of the function “planning”?
3. What is the purpose of the function “organization”?
4. What is the purpose of the function “motivation”?
5. What is the purpose of the function “control”?
6. What is the purpose of the function “coordination”?
7. Describe and give an example of economic methods of the enterprise management.
8. Describe and give an example of administrative methods of the enterprise management.
9. Describe and give an example of socio-psychological methods of the enterprise management.
10. What is the “organizational structure of enterprise management”?
11. What are the features of the application of linear organizational structure of enterprise management?
12. What are the features of the application of functional organizational structure of enterprise management?
13. What are the features of the application of product organizational structure of enterprise management?
14. What are the features of the application of matrix organizational structure of enterprise management?
15. Describe the factors of the internal environment and external environment of the enterprise.

Test tasks

1. Defining the system of goals of the enterprise, ways and means of achieving them in the short term, medium term and long term perspective is...

a) planning;

- b) organization;
- c) motivation;
- d) control;
- e) coordination.

2. *Combining factors of production in the most rational scale and structure is...*

- a) planning;
- b) organization;
- c) motivation;
- d) control;
- e) coordination.

3. *Encouraging the enterprise's staff to perform their duties to the best of their ability is ...*

- a) planning;
- b) organization;
- c) motivation;
- d) control;
- e) coordination.

4. *Quantitative and qualitative assessment of compliance of the actual level of development of the enterprise to its planned level is...*

- a) planning;
- b) organization;
- c) motivation;
- d) control;
- e) coordination.

5. *Ensuring the maximum compliance of the actual level of development of the enterprise to its planned level is ...*

- a) planning;
- b) organization;
- c) motivation;
- d) control;
- e) coordination.

6. *Methods aimed at encouraging staff to work effectively through material incentives are ...*

- a) social methods;
- b) administrative methods;
- c) economic methods;
- d) psychological methods.

7. *Methods that involve influencing employees based on institution of authority are ...*

- a) social methods;
- b) administrative methods;
- c) economic methods;
- d) psychological methods.

8. *Methods that involve influencing employees based on institution of authority are ...*

- a) social methods;
- b) administrative methods;
- c) economic methods;
- d) psychological methods.

9. *Which of the following organizational structures of enterprise management is the simplest?*

- a) linear;
- b) functional;
- c) product;
- d) matrix.

10. *Which of the following organizational structures of enterprise management is the most common in micro and small enterprises?*

- a) linear;
- b) functional;
- c) product;
- d) matrix.

11. *Which of the following organizational structures of enterprise management is characterized by promptness of decision-making?*

- a) linear;
- b) functional;
- c) product;
- d) matrix.

12. Which of the following organizational structures of enterprise management is characterized by the presence in the hierarchical structure of “product directors” level?

- a) linear;
- b) functional;
- c) product;
- d) matrix.

13. Which of the following organizational structures of enterprise management is based on the principle of “double subordination”?

- a) linear;
- b) functional;
- c) product;
- d) matrix.

14. Development of science and technology ...

- a) does not affect the functioning of the enterprise;
- b) is a factor of the internal environment;
- c) is a direct factor of the external environment;
- d) is an indirect factor of the external environment.

15. Legal framework ...

- a) does not affect the functioning of the enterprise;
- b) is a factor of the internal environment;
- c) is a direct factor of the external environment;
- d) is an indirect factor of the external environment.

16. Climate and relief ...

- a) do not affect the functioning of the enterprise;
- b) are the factors of the internal environment;
- c) are the direct factors of the external environment;
- d) are the indirect factors of the external environment.

17. Information ...

- a) does not affect the functioning of the enterprise;
- b) is a factor of the internal environment;
- c) is a direct factor of the external environment;
- d) is an indirect factor of the external environment.

18. Labor market ...

- a) does not affect the functioning of the enterprise;
- b) is a factor of the internal environment;
- c) is a direct factor of the external environment;
- d) is an indirect factor of the external environment.

19. Integration and globalization ...

- a) do not affect the functioning of the enterprise;
- b) are the factors of the internal environment;
- c) are the direct factors of the external environment;
- d) are the indirect factors of the external environment.

20. Technical and organizational conditions of the enterprise ...

- a) do not affect the functioning of the enterprise;
- b) are the factors of the internal environment;
- c) are the direct factors of the external environment;
- d) are the indirect factors of the external environment.

Individual practical tasks

X – the second to last number of the individual plan of the student

Y – the last number of the individual plan of the student

Task 1. Determine the change in the number of management staff of the enterprise in the reporting period compared to the base period under the following conditions: the number of production staff of the enterprise in the base period was $315-X$ persons, in the reporting period – $300-X$ persons; the management rate in the base period was $5+Y$ persons, in the reporting period – $6+Y$ persons.

Evaluation criteria for task 1

N_{mp} in base period – 1 point. N_{mp} in reporting period – 1 point.
 ΔN_{mp} – 0.5 point. *Total 2.5 points for task 1.*

Task 2. Evaluate the effectiveness of enterprise management in the base period and reporting period, if: the enterprise's profit in the base period was $549+X$ thousand UAH, in the reporting period – $617+X$ thousand UAH; costs for enterprise management in the base period were $1863-Y$ thousand UAH, in the reporting period – $1982-Y$ thousand UAH.

Evaluation criteria for task 2

EEM in base period – 1 point. EEM in reporting period – 1 point.
 ΔEEM – 0.5 point. *Total 2.5 points for task 2.*

Methodical guidelines for solving practical tasks

Methodical instructions for completing the task 1:

1. The number of management personnel is calculated as follows:

$$N_{mp} = \frac{N_{IPP}}{N_m},$$

where N_{IPP} – number of industrial and production personnel of the enterprise, persons;

N_m – management norm, person.

Methodical instructions for completing the task 2:

1. The efficiency of enterprise management is calculated according to the formula

$$EEM = \frac{PE}{EMC} \cdot 100\%,$$

where PE – profit of the enterprise, thousand UAH;

EMC – enterprise management costs, thousand UAH.

Examples of solutions to practical tasks

Example of solution to practical task 1:

Task 1. Determine the change in the number of management staff of the enterprise in the reporting period compared to the base period under the following conditions: the number of production staff of the enterprise in the base period was 315 persons, in the reporting period – 300 persons; the management rate in the base period was 5 persons, in the reporting period – 6 persons.

1. The number of management personnel is:

- in the base period:

$$N_{mp1}=315/5=63 \text{ person}$$

- in the reporting period:

$$N_{mp2}=300/6=50 \text{ person}$$

2. The change in the number of management staff is:

$$\Delta N_{mp}=50-63=-13 \text{ person.}$$

So, 13 managers should be fired.

Example of solution to practical task 2:

Task 2. Evaluate the effectiveness of enterprise management in the base period and reporting period, if: the enterprise's profit in the base period was 549 thousand UAH, in the reporting period – 617 thousand UAH; costs for enterprise management in the base period were 1863 thousand UAH, in the reporting period – 1982 thousand UAH.

1. The efficiency of enterprise management is:

- in the base period:

$$EEM_1=549/1863*100=29.47\%$$

- in the reporting period:

$$EEM_2=617/1982*100=31.13\%$$

2. The change in the efficiency of enterprise management is:

$$\Delta EEM=31.13-29.47=1.66\%$$

The efficiency of enterprise management increased by 1.66%.

Psychological test “Can you be a manager?”

1. Do you think you can manage people?

Yes – 5 points.

No – 0 points.

2. Do you like to work in the yard?

Yes – 5 points.

No – 0 points.

3. Do you enjoy contradicting someone?

Yes – 5 points.

No – 0 points.

4. Which of the two qualities – authoritativeness or tenderness – do you value more?

Authoritativeness – 5 points.

Tenderness – 0 points.

5. Do you like to make speeches?

Yes – 5 points.

No – 0 points.

6. What, in your opinion, can determine the level of civilization: the level of technology development or the degree of emancipation of women?

The level of technology development – 5 points.

The degree of emancipation of women – 0 points.

7. Does someone's incompetence annoy you?

Yes – 5 points.

No – 0 points.

8. Do you like work that requires contact with people?

Yes – 5 points.

No – 0 points.

9. Do you think that in childhood you were under the influence of your parents too long?

Yes – 0 points.

No – 5 points.

10. What do you pay attention to first of all when meeting someone: the appearance of a new acquaintance, or what and how a person speaks?

The appearance of a new acquaintance – 0 points.

What and how a person speaks – 5 points.

11. Do you get angry if you cannot insist on your point of view?

Yes – 5 points.

No – 0 points.

12. Whose career seems more attractive to you: actor Jim Carrey; racing champion Michael Schumacher?

Actor Jim Carrey – 0 points.

Racing champion Michael Schumacher – 5 points.

13. How often are you nominated for an election (executive, public) work?

Often – 5 points.

Not often – 0 points.

14. Are you the initiator of bold initiatives?

Yes – 5 points.

No – 0 points.

15. Do you wait for things to resolve themselves?

Yes – 0 points.

No – 5 points.

16. Would it annoy you if you lived in a room without curtains on the windows?

Yes – 0 points.

No – 5 points.

17. Which color do you prefer: blue or red?

Blue – 0 points.

Red – 5 points.

18. Do you make decisions easily?

Yes – 5 points.

No – 0 points.

19. Which sports do you like more: those that develop agility or those that develop strength?

Those that develop agility – 0 points.

Those that develop strength – 5 points.

20. Do you recognize a manager representing the opposite sex if she/he is competent enough?

Yes – 5 points.

No – 0 points.

Results

You scored 80-100 points.

You are a person who has a greater need to dominate people. You take the initiative and are an excellent organizer. But your hot-headedness, desire to be recognized at any cost, desire to manipulate others significantly reduce the effectiveness of your actions. Strong nervous tension, inability to relax leads to the fact that, being excited, you can easily hurt another person. You often show off, confess, and are aggressive. But if you manage to change your attitude towards people, then the tendency to managerial work can bring a wonderful effect.

You scored 40-75 points.

You have high demands, you are often self-confident, you like to emphasize your own “me”. The ability to manage one's emotions and the tendency to analyze one's actions lead to the fact that the need to manage others does not take extreme forms for you. You like to walk untrodden paths, you have your own opinion, which does not always coincide with the opinion of others. You do not like to impose yourself on others and it

is difficult for you to obey them. You don't care what people say about you, but at the same time you tend to criticize others. You like to have the last word.

You scored 0-35 points.

You are a person who tends to be subordinate rather than to lead. You would feel bad in the role of “boss”. You are most likely a timid, modest, self-confident person. You rarely take the initiative, and are happy to obey the leadership of others. Most often, you prefer compromise solutions and remain in the shadow of other people.

PART II FORMATION AND USING THE CAPITAL OF THE ENTERPRISE

SECTION 3 FIXED ASSETS OF THE ENTERPRISE

3.1 Essence and structure of fixed assets of the enterprise

3.2 Accounting and valuation of fixed assets of the enterprise

3.3 Deterioration and amortization of fixed assets of the enterprise

3.4 Indicators of technical condition and movement of fixed assets of the enterprise

3.5 Indicators of efficiency and intensity of using the fixed assets of the enterprise

3.6 Directions for improving the efficiency of using the fixed assets of the enterprise

3.1 Essence and structure of fixed assets of the enterprise

Fixed assets – the part of the production assets of the enterprise in the form of means of labor, operating in production for a long time, that retain material form and transfer the value to the cost of products, services, works in the form of amortization.

The fixed assets of the enterprise are divided into *groups*:

– *fixed assets for production purposes* (used for the preparation, implementation and maintenance of the production process);

– *fixed assets for non-productive purposes* (used for the meeting the social needs).

According to the Tax Code of Ukraine the fixed assets of the enterprise are grouped by the offensive rank (Tbl 3.1).

Table 3.1

Groups of fixed assets and the minimum periods of their use

<i>Groups of fixed assets</i>	<i>Minimum periods of use, years</i>
<i>group 1 – land plots</i>	-

<i>group 2</i> – capital expenditures for land improvements not related to construction	15
<i>group 3</i> – buildings, constructions, transmitting devices	20 15 10
<i>group 4</i> – machinery and equipment, including: electronic computers, other machines for automatic information processing, related means for reading or printing information, related computer programs (other than programs for which the cost of acquisition is recognized as royalties and/or programs that are recognized as an intangible asset), other information systems, commutators, routers, modules, modems, uninterruptible power supplies and means of their connection to telecommunication networks, telephones (including cellular), microphones and radio transmitters, the cost of which exceeds 2500 UAH	5 2
<i>group 5</i> – vehicles	5
<i>group 6</i> – tools, devices, inventory (furniture)	4
<i>group 7</i> – animals	6
<i>group 8</i> – perennial plantings	10
<i>group 9</i> – other fixed assets	12
<i>group 10</i> – library funds	-
<i>group 11</i> – low-value non-current tangible assets	-
<i>group 12</i> – temporary constructions	5
<i>group 13</i> – natural resources	-
<i>group 14</i> – inventory packaging	6
<i>group 15</i> – rental items	5
<i>group 16</i> – long-term biological assets	7

3.2 Accounting and valuation of fixed assets of the enterprise

Fixed assets in value terms are initially accounted for at their *initial value* – the amount of costs for their manufacture, transportation, assembling and other types of works associated with the introduction of fixed assets in the production process.

For eliminating the influence of the value factor, the valuation of fixed assets is carried out at their *replacement value*, ie at the costs of their production or purchase at the prices of a certain year.

Residual value is defined as the difference between the initial value and the accumulated amortization of fixed assets.

For economic calculations, the *average annual value* of fixed assets is used – the average value of fixed assets, taking into account their introduction and disposal during the year.

Liquidation value is the value of the possible sale of fixed assets that are removing from the enterprise.

Depreciable value is the value of fixed assets, which must be transferred to the cost of products, services, works.

3.3 Deterioration and amortization of fixed assets of the enterprise

Fixed assets lose their initial value in the production process.

There are physical deterioration and obsolescence of fixed assets of the enterprise.

Physical deterioration of fixed assets is characterized by a gradual loss of the fixed assets value due to mechanical deterioration of components and parts, fatigue deterioration of metal and deterioration that occurs under the influence of natural forces.

Obsolescence of fixed assets is characterized by a decrease in the initial value of fixed assets due to: production at the same costs of new, more advanced means of labor (1st form); production of the same means of labor at the lower costs (2nd form).

Amortization is a systematic process of transferring the part of value of fixed assets to the cost of products, services, works.

Amortization of fixed assets of the enterprise is calculated using the following *methods*:

- *straight-line method*, according to which the annual amount of amortization is determined as the ratio of the depreciable value of fixed assets and their useful period;
- *method of reducing the residual value*, according to which the annual amount of amortization is determined as multiplication of the residual value of fixed assets at the beginning of the reporting year (or the initial value of fixed assets) and the annual amortization rate;
- *method of accelerated reducing the residual value* – similar to the previous method except that the annual amortization rate is doubled;

- *cumulative method*, according to which the annual amount of amortization is determined as multiplication of the residual value of fixed assets and the cumulative coefficient;
- *production method*, according to which the monthly amount of amortization is determined as multiplication of the depreciable value of fixed assets and the production amortization rate.

Amortization deductions for the renovation of fixed assets form the *amortization fund of the enterprise*. It is on the current account of the enterprise and can be spent on the repair of existing fixed assets or, in case of its economic inexpediency – on the purchase of new fixed assets.

3.4 Indicators of technical condition and movement of fixed assets of the enterprise

Indicators of the technical condition of fixed assets are the coefficient of deterioration and the coefficient of suitability.

Coefficient of deterioration characterizes the part of the value of fixed assets that has already been transferred to the cost of products, services, works. Coefficient of deterioration is the ratio of the accumulated amortization and the initial value of fixed assets.

Coefficient of suitability is the ratio of the residual value and the initial value of fixed assets.

Indicators of the movement of fixed assets are the coefficient of disposal and the coefficient of renewal.

Coefficient of disposal characterizes the intensity of disposal of fixed assets from the enterprise. Coefficient of disposal is the ratio of the value of disposed fixed assets and the value of fixed assets at the beginning of the year.

Coefficient of renewal is the ratio of the value of introduced fixed assets and the value of fixed assets at the end of the year.

3.5 Indicators of efficiency and intensity of using the fixed assets of the enterprise

Indicators of efficiency of using the fixed assets of the enterprise are: capital productivity; capital intensity; provision of labor with fixed assets; profitability of fixed assets.

Capital productivity is the ratio of enterprise's income and the average annual value of fixed assets. The indicator characterizes the amount of monetary units of income per one monetary unit spent on the purchase of fixed assets.

Capital intensity is the inverse indicator of the capital productivity.

Provision of labor with fixed assets is the ratio of the average annual value of fixed assets and the number of the production personnel of the enterprise.

Profitability of fixed assets is the ratio of enterprise's profit and the average annual value of fixed assets.

Indicators of intensity of using the fixed assets of the enterprise are: coefficient of extensive using the fixed assets, coefficient of intensive using the fixed assets, integral coefficient of using the fixed assets.

Coefficient of extensive using the fixed assets characterizes the efficiency of the use of calendar fund, regime fund and planned fund of working time.

Coefficient of intensive using the fixed assets characterizes the efficiency of using the production capacity of the enterprise.

Integral coefficient of using the fixed assets is a multiplication of the coefficient of extensive using the fixed assets and the coefficient of intensive using the fixed assets.

3.6 Directions for improving the efficiency of using the fixed assets of the enterprise

The main directions for improving the efficiency of using the fixed assets of the enterprise are:

- technical improvement and modernization of fixed assets;
- improving the structure of fixed assets;
- increasing the intensity of using the fixed assets;
- training of employees of the enterprise.

Recommended videos

1. Video “Types of Asset. Asset Classification”. Chanel “Educationleaves” on the YouTube.

Link: <https://www.youtube.com/watch?v=zH7s3VPXQLg>

2. Video “*What is Asset management?*”. Chanel “Educationleaves” on the YouTube.

Link: <https://www.youtube.com/watch?v=Cx8obMWYg-c>

Theoretical questions

1. What are “fixed assets of the enterprise”?
2. What are “fixed assets of the enterprise for production purposes”?
3. What are “fixed assets of the enterprise for non-productive purposes”?
4. Describe the structure and minimum useful periods of the fixed assets of the enterprise according to the Tax Code of Ukraine.
5. What is “initial value of the fixed assets”?
6. What is “replacement value of the fixed assets”?
7. What is “residual value of the fixed assets”?
8. What is “average annual value of the fixed assets”?
9. What is “liquidation value of the fixed assets”?
10. What is “depreciable value of the fixed assets”?
11. What is the cause of physical deterioration of the fixed assets of the enterprise?
12. What is the cause of obsolescence of the fixed assets of the enterprise?
13. What forms of obsolescence of the fixed assets of the enterprise do you know?
14. What is “amortization of the fixed assets”?
15. Describe the straight-line method of calculation of amortization of the fixed assets of the enterprise.
16. Describe the method of reducing the residual value of the fixed assets of the enterprise.
17. Describe the method of accelerated reducing the residual value of the fixed assets of the enterprise.
18. Describe the cumulative method of calculation of amortization of the fixed assets of the enterprise.
19. Describe the production method of calculation of amortization of the fixed assets of the enterprise.

20. What is “amortization fund of the enterprise”?
21. Name the indicators of the technical condition of fixed assets of the enterprise. What is the economic meaning of this indicators?
22. Name the indicators of the movement of fixed assets of the enterprise. What is the economic meaning of this indicators?
23. Name the indicators of the efficiency of using the fixed assets of the enterprise. What is the economic meaning of this indicators?
24. Name the indicators of the intensity of using the fixed assets of the enterprise. What is the economic meaning of this indicators?
25. What directions for improving the efficiency of using the fixed assets of the enterprise do you know?

Test tasks

1. *Fixed assets are...*
- a) means of labor, part of the production assets of the enterprise;
 - b) tangible assets, operating in production for a long time, that retain material form and transfer the value to the cost of products, services, works in the form of amortization;
 - c) land plots, capital expenditures for land improvements not related to construction, buildings, constructions, transmitting devices, machinery and equipment, vehicles, tools, devices, inventory (furniture), animals, perennial plantings, library funds, low-value non-current tangible assets, temporary constructions, natural resources, inventory packaging, rental items, long-term biological assets;
 - d) all answers are correct.
2. *Fixed assets for production purposes include:*
- a) buildings for cultural and household purposes;
 - b) office buildings;
 - c) vehicles;
 - d) machinery and equipment.
3. *Fixed assets for non-productive purposes include:*
- a) buildings for cultural and household purposes;
 - b) office buildings;
 - c) vehicles;
 - d) machinery and equipment.

4. *The Tax Code of Ukraine provides for such a number of groups of fixed assets – ...*

- a) 4;
- b) 8;
- c) 12;
- d) 16.

5. *In Ukraine, such groups of fixed assets are not objects of amortization:*

- a) № 1, 10, 11, 13;
- b) № 2, 9, 12, 16;
- c) № 3, 5, 7, 15;
- d) № 4, 6, 8, 14.

6. *Amount of costs for manufacture, transportation, assembling and other types of works associated with the introduction of fixed assets in the production process is ...*

- a) initial value;
- b) replacement value;
- c) residual value;
- d) depreciable value.

7. *Costs of production or purchase of fixed assets at the prices of a certain year – ...*

- a) initial value;
- b) replacement value;
- c) residual value;
- d) depreciable value.

8. *Difference between the initial value and the accumulated amortization of fixed assets is ...*

- a) residual value;
- b) average annual value;
- c) liquidation value;
- d) depreciable value.

9. *Average value of fixed assets, taking into account their introduction and disposal during the year is ...*

- a) residual value;
- b) average annual value;
- c) liquidation value;
- d) depreciable value.

10. *Value of the possible sale of fixed assets that are removing from the enterprise is ...*

- a) residual value;
- b) average annual value;
- c) liquidation value;
- d) depreciable value.

11. *Value of fixed assets, which must be transferred to the cost of products, services, works is ...*

- a) residual value;
- b) average annual value;
- c) liquidation value;
- d) depreciable value.

12. *Systematic process of transferring the part of value of fixed assets to the cost of products, services, works is ...*

- a) deterioration;
- b) obsolescence;
- c) amortization;
- d) all answers are correct.

13. *According to this method the annual amount of amortization is determined as the ratio of the depreciable value of fixed assets and their useful period ...*

- a) straight-line method;
- b) method of reducing the residual value;
- c) cumulative method;
- d) production method.

14. According to this method the annual amount of amortization is determined as multiplication of the residual value of fixed assets at the beginning of the reporting year (or the initial value of fixed assets) and the annual amortization rate ...

- a) straight-line method;
- b) method of reducing the residual value;
- c) cumulative method;
- d) production method.

15. According to this method the annual amount of amortization is determined as multiplication of the residual value of fixed assets and the cumulative coefficient ...

- a) straight-line method;
- b) method of reducing the residual value;
- c) cumulative method;
- d) production method.

16. According to this method the monthly amount of amortization is determined as multiplication of the depreciable value of fixed assets and the production amortization rate ...

- a) straight-line method;
- b) method of reducing the residual value;
- c) cumulative method;
- d) production method.

17. Indicators of the technical condition of fixed assets are:

- a) coefficient of deterioration;
- b) coefficient of suitability;
- c) coefficient of disposal;
- d) coefficient of renewal.

18. Indicators of the movement of fixed assets are:

- a) coefficient of deterioration;
- b) coefficient of suitability;
- c) coefficient of disposal;
- d) coefficient of renewal.

19. Indicators of efficiency of using the fixed assets of the enterprise are: ...

- a) capital productivity;
- b) profitability of fixed assets;
- c) coefficient of extensive using the fixed assets;
- d) coefficient of intensive using the fixed assets.

20. Indicators of intensity of using the fixed assets of the enterprise are:

- a) capital productivity;
- b) profitability of fixed assets;
- c) coefficient of extensive using the fixed assets;
- d) coefficient of intensive using the fixed assets.

Individual practical tasks

X – the second to last number of the individual plan of the student

Y – the last number of the individual plan of the student

Task 1. At the beginning of the year, the value of fixed assets of the enterprise amounted to $2546+X$ thousand UAH. During the year, there were the following changes in the fixed assets:

– fixed assets were introduced in the amount: 01.01 – $320+X$ thousand UAH, 15.03 – $250-Y$ thousand UAH, 15.07 – $380+X$ thousand UAH, 01.12 – $280-X$ thousand UAH;

– fixed assets were disposed in the amount: 01.02 – $145+Y$ thousand UAH, 15.04 – $172-Y$ thousand UAH, 01.08 – $280-X$ thousand UAH, 15.11 – $85+X$ thousand UAH.

Income of the enterprise amounted to $3725-X+Y$ thousand UAH at a total costs of $2654+Y$ thousand UAH. Number of the production personnel of the enterprise – $125-X$ person.

Determine:

- average annual value of fixed assets;
- coefficient of disposal of fixed assets and coefficient of renewal of fixed assets;
- capital productivity; capital intensity; provision of labor with fixed assets; profitability of fixed assets.

Evaluation criteria for task 1

V_{av} – 1 point. C_d – 0.5 point. C_r – 0.5 point. CP – 0.5 point. CI – 0.5 point. PL – 0.5 point. P_{FA} – 0.5 point. *Total 4 points for task 1.*

Task 2. Enterprise purchased the equipment worth $100+X+Y$ thousand UAH. Useful period of the equipment – 5 years. Liquidation value of the equipment – $3+X\%$. Calculate the amount of annual amortization for the renovation of equipment by three methods (straight-line method, cumulative method and method of accelerated reducing the residual value), choose the most effective of them by the criterion of returning a larger amount of amortization for the first half of the useful period of the equipment (3 years). Determine the coefficient of deterioration and coefficient of suitability of equipment at the end of the 3rd year in the case of using each of the selected methods.

Evaluation criteria for task 2

A_{1-5} by straight-line method – 1 point. K_{cum1-5} – 2 points. A_{1-5} by cumulative method – 2 points. R_d – 1 point. A_{1-5} by method of accelerated reducing the residual value – 2 points. Choose the most effective method – 1 point. C_{det} – 1 point. C_s – 1 point. *Total 11 points for task 2.*

Methodical guidelines for solving practical tasks

Methodical instructions for completing the task 1:

1. The average annual value of fixed assets is determined as follows:

$$V_{av} = V_i + \frac{V_{pi} \cdot n}{12} - \frac{V_d \cdot m}{12},$$

where V_i – initial value of fixed assets, thousand UAH;

V_{pi} – the value of fixed assets put into operation during the reporting period, thousand UAH;

V_d – the value of fixed assets decommissioned during the reporting period, thousand UAH;

n, m – number of months of actual use and non-use of fixed assets, respectively, months (number of months until the end of the year).

2. The coefficient of disposal of fixed assets is calculated as follows:

$$C_d = \frac{V_d}{V_i}.$$

3. The coefficient of renewal of fixed assets is defined as follows:

$$C_r = \frac{V_{pi}}{V_{ey}},$$

where V_{ey} – value of fixed assets at the end of the year, thousand UAH.

4. Capital productivity is determined by the formula

$$CP = \frac{I}{V_{av}},$$

where I – income of the enterprise, thousand UAH.

5. Capital intensity is calculated as follows:

$$CI = \frac{V_{av}}{I}.$$

6. Provision of labor with fixed assets is defined as follows:

$$PL = \frac{V_{av}}{N},$$

where N – number of production personnel of the enterprise, person.

7. Profitability of fixed assets is calculated as follows:

$$P_{\text{FA}} = \frac{\text{NP}}{V_{\text{av}}} \cdot 100\% ,$$

where NP – net profit, thousand UAH.

Methodical instructions for completing the task 2:

1. When using the straight-line method, amount of annual amortization is calculated as follows:

$$A = \frac{V_i - V_l}{T} ,$$

where V_l – liquidation value of fixed assets, thousand UAH;

T – useful period of fixed assets, years.

2. When using the cumulative method, amount of annual amortization is calculated as follows:

$$A = (V_i - V_l) \cdot K_{\text{cum}} ,$$

where K_{cum} – cumulative coefficient. It is defined as the ratio of the number of years remaining until the end of the useful period of fixed assets and the sum of the years of the useful period of fixed assets.

3. When using the method of accelerated reducing the residual value, amount of annual amortization is calculated as follows:

$$A = V_r \cdot \frac{R_d}{100} ,$$

where V_r – residual value of fixed assets, thousand UAH;

R_d – rate of depreciation of fixed assets, %:

$$R_d = \frac{V_i - V_l}{V_i \cdot T} \cdot 2 \cdot 100\% .$$

4. Coefficient of deterioration is determined as follows:

$$C_{\text{det}} = \frac{A}{V_i}.$$

5. Coefficient of suitability is calculated as follows:

$$C_s = \frac{V_r}{V_i}.$$

According to the results of the calculations, the most effective method of calculating the amortization for the renovation of equipment should be chosen based on the criterion of returning a larger amount of amortization for the first half of the useful period of the equipment (3 years).

Examples of solutions to practical tasks

Example of solution to practical task 1:

Task 1. At the beginning of the year, the value of fixed assets of the enterprise amounted to 2545 thousand UAH. During the year, there were the following changes in the fixed assets:

– fixed assets were introduced in the amount: 01.01 – 320 thousand UAH, 15.03 – 250 thousand UAH, 15.07 – 380 thousand UAH, 01.12 – 280 thousand UAH;

– fixed assets were disposed in the amount: 01.02 – 145 thousand UAH, 15.04 – 172 thousand UAH, 01.08 – 280 thousand UAH, 15.11 – 85 thousand UAH.

Income of the enterprise amounted to 3725 thousand UAH at a total costs of 2654 thousand UAH. Number of the production personnel of the enterprise – 125 person.

Determine:

– average annual value of fixed assets;
– coefficient of disposal of fixed assets and coefficient of renewal of fixed assets;

– capital productivity; capital intensity; provision of labor with fixed assets; profitability of fixed assets.

1. The average annual value of fixed assets is:

$$V_{av} = 2545 + (320 \cdot 12 + 250 \cdot 9 + 380 \cdot 5 + 280 \cdot 1) / 12 - (145 \cdot 11 + 172 \cdot 8 + 280 \cdot 5 + 85 \cdot 1) / 12 = 2545 + 689.17 - 371.33 = 2862.84 \text{ thousand UAH}$$

2. The coefficient of disposal of fixed assets is:

$$C_d = (145 + 172 + 280 + 85) / 2545 = 682 / 2545 = 0.27$$

3. The coefficient of renewal of fixed assets is:

$$C_r = (320 + 250 + 380 + 280) / (2545 + 320 + 250 + 380 + 280 - 145 - 172 - 280 - 85) = 1230 / 3093 = 0.4$$

The coefficient of renewal of fixed assets (0.4) is greater than the coefficient of disposal of fixed assets (0.27). This means that the company is increasing fixed assets and is a positive trend.

4. Capital productivity is:

$$CP = 3725 / 2862.84 = 1.3$$

5. Capital intensity is:

$$CI = 2862.84 / 3725 = 0.77 \text{ or } CI = 1 / CP = 1 / 1.3 = 0.77$$

6. Provision of labor with fixed assets is:

$$PL = 2862.84 / 125 = 22.9 \text{ thousand UAH/person}$$

7. Profitability of fixed assets is:

$$P_{FA} = ((3725 - 2654) \cdot (1 - 18/100)) / 2862.84 \cdot 100 = 30.68\%$$

Example of solution to practical task 2:

Task 2. Enterprise purchased the equipment worth 100 thousand UAH. Useful period of the equipment – 5 years. Liquidation value of the equipment – 3%. Calculate the amount of annual amortization for the renovation of equipment by three methods (straight-line method, cumulative method and method of accelerated reducing the residual value), choose the most effective of them by the criterion of returning a larger amount of amortization for the first half of the useful period of the equipment (3 years). Determine the coefficient of deterioration and coefficient of suitability of equipment at the end of the 3rd year in the case of using each of the selected methods.

1. When using the straight-line method, amount of annual amortization is:

$$A_1=A_2=A_3=A_4=A_5=(100-(100*3/100))/5=19.4 \text{ thousand UAH}$$

2. The cumulative coefficients are:

$$K_{\text{cum1}}=5/(1+2+3+4+5)=0.33$$

$$K_{\text{cum2}}=4/(1+2+3+4+5)=0.27$$

$$K_{\text{cum3}}=3/(1+2+3+4+5)=0.2$$

$$K_{\text{cum4}}=2/(1+2+3+4+5)=0.13$$

$$K_{\text{cum5}}=1/(1+2+3+4+5)=0.07$$

Let's check!

$$0.33+0.27+0.2+0.13+0.07=1$$

That's right!

3. When using the cumulative method, amount of annual amortization is:

$$A_1=(100-(100*3/100))*0.33=32.01 \text{ thousand UAH}$$

$$A_2=(100-(100*3/100))*0.27=26.19 \text{ thousand UAH}$$

$$A_3=(100-(100*3/100))*0.2=19.4 \text{ thousand UAH}$$

$$A_4=(100-(100*3/100))*0.13=12.61 \text{ thousand UAH}$$

$$A_5=(100-(100*3/100))*0.07=6.79 \text{ thousand UAH}$$

Let's check!

$$32.01+26.19+19.4+12.61+6.79=97 \text{ thousand UAH}$$

That's right!

4. The rate of depreciation of fixed assets is:

$$R_d=((100-(100*3/100))/(100*5))*2*100=38.8\%$$

5. When using the method of accelerated reducing the residual value, amount of annual amortization is:

$$A_1=(100-(100*3/100))*38.8/100=97*38.8/100=37.64 \text{ thousand UAH}$$

$$A_2=(97-37.64)*38.8/100=23.03 \text{ thousand UAH}$$

$$A_3=(97-37.64-23.03)*38.8/100=14.1 \text{ thousand UAH}$$

$$A_4=(97-37.64-23.03-14.1)*38.8/100=8.63 \text{ thousand UAH}$$

$$A_5=(97-37.64-23.03-14.1-8.63)*38.8/100=5.28 \text{ thousand UAH}$$

6. Let's choose the most effective method by the criterion of returning a larger amount of amortization for the first half of the useful period of the equipment (3 years).

The straight-line method:

$$A_{1-3} = 19.4 \cdot 3 = 58.2 \text{ thousand UAH}$$

The cumulative method:

$$A_{1-3} = 32.01 + 26.19 + 19.4 = 77.6 \text{ thousand UAH}$$

The method of accelerated reducing the residual value:

$$A_{1-3} = 37.64 + 23.03 + 14.1 = 74.77 \text{ thousand UAH}$$

The most effective method is a cumulative method.

7. Coefficient of deterioration is:

- when using the straight-line method:

$$C_{\text{det}} = 58.2 / 100 = 0.58$$

- when using the cumulative method:

$$C_{\text{det}} = 77.6 / 100 = 0.78$$

- when using the method of accelerated reducing the residual value:

$$C_{\text{det}} = 74.77 / 100 = 0.75$$

8. Coefficient of suitability is:

- when using the straight-line method:

$$C_s = (100 - 58.2) / 100 = 0.42 \text{ or } C_s = 1 - 0.58 = 0.42$$

- when using the cumulative method:

$$C_s = (100 - 77.6) / 100 = 0.22 \text{ or } C_s = 1 - 0.78 = 0.22$$

- when using the method of accelerated reducing the residual value:

$$C_s = (100 - 74.77) / 100 = 0.25 \text{ or } C_s = 1 - 0.75 = 0.25$$

SECTION 4

CURRENT ASSETS OF THE ENTERPRISE

4.1 Essence and structure of current assets of the enterprise

4.2 Circular flow of current assets of the enterprise. Indicators of turnover of current assets of the enterprise

4.3 Rationing of current assets of the enterprise

4.4 Directions for improving the efficiency of using the current assets of the enterprise

4.1 Essence and structure of current assets of the enterprise

Current assets of the enterprise – the items of labor that participate in one production cycle, are fully consumed in it and included in the cost of products, services, works immediately and completely.

Current assets of the enterprise is divided into the *current funds* and the *funds of circulation*.

Current funds include:

- production stocks;
- work-in-progress;
- prepaid expenses;
- semi-finished products of own production.

Funds of circulation include:

- finished goods;
- receivables;
- cash in the enterprise's cash register, money in the settlement documents and on the current account.

Production stocks are the raw materials, basic materials, purchased semi-finished products, components, additional materials, fuel, packing, spare parts, low-value and perishable items in the warehouse of the enterprise.

There are the following *types of production stocks*: current stock, insurance stock, maximum stock, transport stock, preparatory stock, average stock, warehouse stock.

Current stock is a stock for ensuring the continuity of production process between two supplies of materials.

Insurance stock is a stock for ensuring the continuity of production process in case of failure of the term of delivery of materials.

Maximum stock is: the maximum amount of stock of materials that can be in the warehouse of the enterprise; the sum of the current stock and the maximum possible amount of insurance stock (taken as half of the current stock).

Transport stock is a stock for ensuring the continuity of production process in the period from the date of payment of the supplier's invoice until the arrival of the materials at the warehouse of the enterprise.

Preparatory stock is a stock for ensuring the continuity of production process in cases where a certain type of materials requires some preparations before using in the production process.

Average stock is the sum of the current stock and the insurance stock.

As usual the *warehouse stock* is the sum of the current stock and the preparatory stock.

Work-in-progress is a product that has not passed all the stages provided for the technological process, as well as incomplete or has not been tested and accepted.

Prepaid expenses are the costs for the new equipment, research and innovation works, which will gradually be included in the cost of finished goods.

Finished goods are the manufactured products that have been tested and accepted, fully completed in accordance with contracts with customers and meet technical requirements.

Receivables – the debt of individuals or legal entities to the enterprise.

4.2 Circular flow of current assets of the enterprise. Indicators of turnover of current assets of the enterprise

As usual the circular flow of the current assets of the enterprise is as follows:

$$C - PS \dots P \dots FG - C_1,$$

where C – cash advances in production;

PS – production stocks;
P – production;
FG – finished goods;
C₁ – cash received from the sale of goods.

It is accepted to allocate *three stages of circular flow of the current assets of the enterprise*:

Stage № 1 “Investment stage”. Current assets in the form of cash are used for forming the production stocks.

Stage № 2 “Production stage”. Production stocks are consumed in the production process, forming the work-in-progress and turning into finished goods.

Stage № 3 “Sale stage”. Finished goods are sold. As a result, the enterprise receives cash for further formation of the production stocks.

Indicators of turnover of the current assets of the enterprise are the turnover ratio of the current assets and the period (duration) of turnover of the current assets.

Turnover ratio of the current assets characterizes the number of turnovers that make the current assets for a certain period of time (usually a year).

Period (duration) of turnover of the current assets characterizes the time spent the current assets per full turnover.

4.3 Rationing of current assets of the enterprise

Rationing of the current assets of the enterprise is the determination of their size, necessary for the formation of minimum and at the same time sufficient production stocks for ensuring the continuity of production process.

Norms of the current assets show the need for them in natural or relative terms.

Standards of the current assets represent a cost expression of the established norms.

Rationing of the production stocks. Norms of the current assets in the production stocks include the time of finding the materials in such types of production stocks as current stock, insurance stock, transport stock and preparatory stock.

Rationing of the work-in-progress. Standard of the current assets in the work-in-progress is calculated as the ratio of the multiplication of total cost of production program, duration of production cycle, growth rate of costs and the number of calendar days per year.

Rationing of the prepaid expenses. Standard of the current assets in the prepaid expenses is calculated as the sum of prepaid expenses at the beginning of the year, adjusted for the planned replenishment and write-off of the prepaid expenses during the period.

4.4 Directions for improving the efficiency of using the current assets of the enterprise

The main directions of accelerating the turnover of the current assets of the enterprise are:

- *at the investment stage of circular flow of the current assets of the enterprise:* introduction of the economically justified norms of production stocks; approaching the suppliers to the enterprise; mechanization and automation of operations in the warehouses;
- *at the production stage of circular flow of the current assets of the enterprise:* introduction of advanced equipment and technology, robotic complexes; improvement of forms of organization of production and system of economic stimulation of rational using the raw materials, fuel and energy resources;
- *at the sale stage of circular flow of the current assets of the enterprise:* approaching the consumers to the enterprise; improving the system of settlements with counterparties; acceleration of document flow; compliance with contractual discipline; increasing the volume of sold products due to the production of products from saved materials; rationalization of the sale system.

Recommended videos

1. Video “*Materials management*”. Chanel “Educationleaves” on the YouTube.

Link: <https://www.youtube.com/watch?v=oSoU4msV2ss>

2. Video “*What is the material requirement planning (MRP)?*”. Chanel “Educationleaves” on the YouTube.

Link: <https://www.youtube.com/watch?v=u3P6YMI5Ah0>

3. Video “*MRP VS MRP II. Difference between Material requirement planning & Manufacturing resource planning*”. Chanel “Educationleaves” on the YouTube.

Link: <https://www.youtube.com/watch?v=v7l4hyeMd0E>

4. Video “*What is procurement? Procurement process*”. Chanel “Educationleaves” on the YouTube.

Link: <https://www.youtube.com/watch?v=4qMkxv840l0>

5. Video “*Procurement VS Purchasing*”. Chanel “Educationleaves” on the YouTube.

Link: <https://www.youtube.com/watch?v=Hsq-oqlLP0A>

6. Video “*What is inventory?*”. Chanel “Educationleaves” on the YouTube.

Link: <https://www.youtube.com/watch?v=trreap294A0>

7. Video “*Just in time or JIT*”. Chanel “Educationleaves” on the YouTube.

Link: <https://www.youtube.com/watch?v=9onMrDbDKaM>

8. Video “*What is KANBAN?*”. Chanel “Educationleaves” on the YouTube.

Link: https://www.youtube.com/watch?v=mH48_b9G4t4

9. Video “*What is supply chain management (SCM)?*”. Chanel “Educationleaves” on the YouTube.

Link: <https://www.youtube.com/watch?v=R8rYsCmAEEY>

Theoretical questions

1. What are “current assets of the enterprise”?
2. What are “current funds”?
3. List the components of the current funds.
4. What are “funds of circulation”?
5. List the components of the funds of circulation.
6. What are “production stocks”?
7. What is the purpose of formation the current stock?
8. What is the purpose of formation the insurance stock?
9. What is “maximum stock”?
10. What is the purpose of formation the transport stock?
11. What is the purpose of formation the preparatory stock?

12. What is “average stock”?
13. What is “warehouse stock”?
14. What is “work-in-progress”?
15. What are “prepaid expenses”?
16. What are “finished goods”?
17. What are “receivables”?
18. What is “circular flow of the current assets”?
19. Describe the stages of circular flow of the current assets of the enterprise.
20. What is “turnover ratio of the current assets”?
21. What is “period (duration) of turnover of the current assets”?
22. What is “rationing of the current assets of the enterprise”?
23. What are “norms of the current assets”?
24. What are “standards of the current assets”?
25. How are the production stocks rationing?
26. How is the work-in-progress rationing?
27. How are the prepaid expenses rationing?
28. Describe the directions for improving the efficiency of using the current assets of the enterprise at the investment stage of circular flow of the current assets.
29. Describe the directions for improving the efficiency of using the current assets of the enterprise at the production stage of circular flow of the current assets.
30. Describe the directions for improving the efficiency of using the current assets of the enterprise at the sale stage of circular flow of the current assets.

Test tasks

1. *Current assets of the enterprise are ...*
 - a) part of assets of the enterprise;
 - b) items of labor that participate in one production cycle, are fully consumed in it and included in the cost of products, services, works immediately and completely;
 - c) production stocks, work-in-progress, prepaid expenses, semi-finished products of own production, finished goods, receivables, cash in

the enterprise's cash register, money in the settlement documents and on the current account;

d) all answers are correct.

2. Current funds include:

a) production stocks;

b) prepaid expenses;

c) finished goods;

d) receivables.

3. Funds of circulation include:

a) work-in-progress;

b) semi-finished products of own production;

c) cash in the enterprise's cash register;

d) money in the settlement documents and on the current account.

4. Production stock for ensuring the continuity of production process between two supplies of materials is ...

a) current stock;

b) insurance stock;

c) transport stock;

d) preparatory stock.

5. Production stock for ensuring the continuity of production process in case of failure of the term of delivery of materials is ...

a) current stock;

b) insurance stock;

c) transport stock;

d) preparatory stock.

6. Production stock for ensuring the continuity of production process in the period from the date of payment of the supplier's invoice until the arrival of the materials at the warehouse of the enterprise is ...

a) current stock;

b) insurance stock;

c) transport stock;

d) preparatory stock.

7. Production stock for ensuring the continuity of production process in cases where a certain type of materials requires some preparations before using in the production process is ...

- a) current stock;
- b) insurance stock;
- c) transport stock;
- d) preparatory stock.

8. Sum of the current stock and the maximum possible amount of insurance stock (taken as half of the current stock) is ...

- a) maximum stock;
- b) average stock;
- c) warehouse stock;
- d) all answers are correct.

9. Sum of the current stock and the insurance stock is ...

- a) maximum stock;
- b) average stock;
- c) warehouse stock;
- d) all answers are correct.

10. Sum of the current stock and the preparatory stock is ...

- a) maximum stock;
- b) average stock;
- c) warehouse stock;
- d) all answers are correct.

11. Product that has not passed all the stages provided for the technological process, as well as incomplete or has not been tested and accepted is ...

- a) production stock;
- b) work-in-progress;
- c) finished good;
- d) cash in the enterprise's cash register.

12. Costs for the new equipment, research and innovation works, which will gradually be included in the cost of finished goods are ...

- a) production stocks;

- b) work-in-progress;
- c) prepaid expenses;
- d) receivables.

13. Manufactured products that have been tested and accepted, fully completed in accordance with contracts with customers and meet technical requirements are ...

- a) production stocks;
- b) finished goods;
- c) prepaid expenses;
- d) semi-finished products.

14. Debt of individuals or legal entities to the enterprise – ...

- a) prepaid expenses;
- b) receivables;
- c) cash in the enterprise's cash register;
- d) money in the settlement documents and on the current account.

15. Current assets in the form of cash are used for forming the production stocks at ...

- a) investment stage of circular flow of the current assets;
- b) production stage of circular flow of the current assets;
- c) sale stage of circular flow of the current assets;
- d) all answers are correct.

16. Production stocks are consumed in the production process, forming the work-in-progress and turning into finished goods at ...

- a) investment stage of circular flow of the current assets;
- b) production stage of circular flow of the current assets;
- c) sale stage of circular flow of the current assets;
- d) all answers are correct.

17. Finished goods are sold and, as a result, the enterprise receives cash for further formation of the production stocks at ...

- a) investment stage of circular flow of the current assets;
- b) production stage of circular flow of the current assets;
- c) sale stage of circular flow of the current assets;
- d) all answers are correct.

18. Norms of the current assets in the production stocks include the time of finding the materials in such types of production stocks as ...

- a) average stock;
- b) transport stock;
- c) preparatory stock;
- d) all answers are correct.

19. Directions of accelerating the turnover of the current assets of the enterprise at the investment stage of circular flow of the current assets are ...

- a) introduction of the economically justified norms of production stocks;
- b) introduction of advanced equipment and technology, robotic complexes;
- c) improving the system of settlements with counterparties;
- d) compliance with contractual discipline.

20. Directions of accelerating the turnover of the current assets of the enterprise at the production stage of circular flow of the current assets are ...

- a) mechanization and automation of operations in the warehouses;
- b) improvement of forms of organization of production;
- c) increasing the volume of sold products due to the production of products from saved materials;
- d) rationalization of the sale system.

Individual practical tasks

X – the second to last number of the individual plan of the student

Y – the last number of the individual plan of the student

Task 1. Determine the current stock, insurance stock, transport stock and preparatory stock, the standard of the current assets in the production stocks, if: total annual needs in material is $800-X+Y$ thousand kg; period between two deliveries of material – $20-X$ days; failure of the term of delivery of material – $3+Y$ days; period from the date of payment of the supplier's invoice until the arrival of the material at the warehouse

– $2+X$ days; period of preparation of the material for introduction into the production process – $1+Y$ day; market price of 1 kg of material – $28+X$ UAH.

Evaluation criteria for task 1

DMR – 1 point. CS – 1 point. IS – 1 point. TS – 1 point. PS – 1 point. SCA – 1 point. *Total 6 points for task 1.*

Task 2. Assess the change in the efficiency of using the current assets of the enterprise, if: income of the enterprise in the base year amounted to $1648+X-Y$ thousand UAH, in the reporting year it increased by $17+Y$ %; average balance of normalized current assets in the reporting year amounted to $445-X+Y$ thousand UAH, and in the base year it was less by $12+X$ %.

Evaluation criteria for task 2

TR_{CA} in the base year – 0.5 point. TR_{CA} in the reporting year – 0.5 point. ΔTR_{CA} – 0.5 point. DT_{CA} in the base year – 0.5 point. DT_{CA} in the reporting year – 0.5 point. ΔDT_{CA} – 0.5 point. Conclusion about the change in the efficiency of using the current assets of the enterprise – 1 point. *Total 4 points for task 2.*

Methodical guidelines for solving practical tasks

Methodical instructions for completing the task 1:

1. The current stock is calculated as follows:

$$CS = DMR \cdot T_{del},$$

where DMR – daily material requirement, thousand kg;

T_{del} – period between two deliveries of material, days.

2. The daily material requirement is determined as follows:

$$DMR = \frac{ANM}{365},$$

where ANM – total annual needs in material, thousand kg.

3. The insurance stock is calculated as follows:

$$IS = DMR \cdot T_{dis},$$

where T_{dis} – period of disruption of material supply, days.

4. The transport stock is calculated as follows:

$$TS = DMR \cdot T_{ar},$$

where T_{ar} – the period from the moment of payment of the supplier's invoice to the arrival of the cargo (material) at the enterprise's warehouse, days.

5. The preparatory stock is calculated according to the formula:

$$PS = DMR \cdot T_{pr},$$

where T_{pr} – the period of preparation of the material for introduction into the production process, days.

6. The standard of the current assets in the production stocks is determined as follows:

$$SCA = (CS + IS + TS + PS) \cdot P_{1kg},$$

where P_{1kg} – the price of 1 kg of material, UAH.

Methodical instructions for completing the task 2:

1. The turnover ratio of current assets is as follows:

$$TR_{CA} = \frac{I}{B_{CA.av}},$$

where I – income of the enterprise, UAH;

$B_{CA.av}$ – average balance of normalized current assets, UAH.

2. The duration of one turnover of current assets is calculated as follows:

$$DT_{CA} = \frac{N_{cd}}{TR_{CA}},$$

where N_{cd} – number of calendar days in a year, days.

Based on the results of the calculations, a conclusion should be drawn about the change (increase or decrease) in the efficiency of using the enterprise's current assets.

Examples of solutions to practical tasks

Example of solution to practical task 1:

Task 1. Determine the current stock, insurance stock, transport stock and preparatory stock, the standard of the current assets in the production stocks, if: total annual needs in material is 800 thousand kg; period between two deliveries of material – 20 days; failure of the term of delivery of material – 3 days; period from the date of payment of the supplier's invoice until the arrival of the material at the warehouse – 2 days; period of preparation of the material for introduction into the production process – 1 day; market price of 1 kg of material – 28 UAH.

1. The daily material requirement is:

$$DMR = 800 / 365 = 2.19 \text{ thousand kg}$$

2. The current stock is:

$$CS = 2.19 * 20 = 43.8 \text{ thousand kg}$$

3. The insurance stock is:

$$IS = 2.19 * 3 = 6.57 \text{ thousand kg}$$

4. The transport stock is:

$$TS = 2.19 * 2 = 4.38 \text{ thousand kg}$$

5. The preparatory stock is:

$$PS=2.19*1=2.19 \text{ thousand kg}$$

6. The standard of the current assets in the production stocks is:

$$SCA=(43.8+6.57+4.38+2.19)*28=1594.32 \text{ thousand UAH}$$

Example of solution to practical task 2:

Task 2. Assess the change in the efficiency of using the current assets of the enterprise, if: income of the enterprise in the base year amounted to 1648 thousand UAH, in the reporting year it increased by 17%; average balance of normalized current assets in the reporting year amounted to 445 thousand UAH, and in the base year it was less by 12%.

1. The turnover ratio of current assets is:

- in the base period:

$$TR_{CA1}=1648/(445*(1-12/100))=4.21$$

- in the reporting period:

$$TR_{CA2}=(1648*(1+17/100))/445=4.33$$

2. The change in the turnover ratio of current assets is:

$$\Delta TR_{CA}=4.33-4.21=0.12$$

3. The duration of one turnover of current assets is:

- in the base period:

$$DT_{CA1}=365/4.21=87 \text{ days}$$

- in the reporting period:

$$DT_{CA2}=365/4.33=85 \text{ days}$$

4. The change in the duration of one turnover of current assets is:

$$\Delta DT_{CA}=85-87=-2 \text{ days}$$

The efficiency of using current assets increased in the reporting period compared to the base period, as the turnover ratio of current assets is increased and the duration of one turnover of current assets is decreased.

SECTION 5

PERSONNEL OF THE ENTERPRISE AND LABOR PRODUCTIVITY

5.1 Essence, structure and characteristics of personnel of the enterprise

5.2 Planning the number of personnel of the enterprise

5.3 Labor productivity: essence, indicators and methods of planning

5.4 Motivation and stimulation of labor of the enterprise's personnel

5.1 Essence, structure and characteristics of personnel of the enterprise

Personnel of the enterprise – the permanent employees of the enterprise who have received the necessary professional training and/or have practical experience.

By the participation in the production process, the personnel of the enterprise is divided into 2 groups:

- production personnel;
- non-production personnel.

Depending on the performed functions the production personnel is divided into the following categories: workers; managers; specialists; office employees; junior service staff; trainees.

The ratio of categories of employees is a *structural characteristics* of personnel of the enterprise.

Qualitative characteristics of personnel of the enterprise involves the distribution of employees by professions, specialties and qualification.

For *quantitative characteristics* of personnel of the enterprise use indicators:

- accounting number of the personnel – number of employees hired in accordance with the concluded employment contracts;
- turnout number of the personnel – number of employees who came to work;

- average accounting number of the personnel – average number of the personnel taking into account the processes of hiring and firing of employees for a certain period;
- turnover rate of the personnel by hiring – ratio of the number of hired employees to the average accounting number of the personnel of the enterprise;
- turnover rate of the personnel by firing – ratio of the number of fired employees to the average accounting number of the personnel of the enterprise;
- coefficient of personnel fluidity – ratio of the number of employees, fired for the subjective reasons, to the average accounting number of the personnel of the enterprise.

5.2 Planning the number of personnel of the enterprise

The number of employees of the enterprise is planned depending on the functions they perform.

The *number of core workers* is planned based on the complexity of the production program, the planned number of working days, the duration of the work shift and the coefficient of the norms performance.

The *number of auxiliary workers engaged in the repair of equipment* is calculated based on the repair complexity of the equipment, the maintenance standards and the number of the work shifts.

The *number of auxiliary workers employed in other jobs* can be calculated as a percentage of the number of core workers or depending on the complexity of the jobs, the frequency and duration of their performance.

The *number of management staff* is calculated based on the scope and content of work, as well as the established standards.

5.3 Labor productivity: essence, indicators and methods of planning

Labor productivity characterizes the efficiency of production activity of the personnel.

Labor productivity is expressed by:

- the volume of products, services, works, made (sold) by one employee, per unit of time – *output*;
- the working time per unit of products, services, works – *labor intensity*.

For planning the labor productivity of the personnel of the enterprise such *methods* are used:

1) *method of calculating the labor productivity of the personnel according to the dynamics of previous years*, when the planned level of the labor productivity of personnel is set based on its dynamics in previous periods without taking into account the possible features of the planning period;

2) *method of the direct calculating the labor productivity of the personnel*, when the planned level of the labor productivity of personnel is set based on the planned change in the volume of production program;

3) *factorial method of calculating the labor productivity of the personnel*, when the planned level of the labor productivity of personnel is set based on the influence of each factor on the labor productivity of personnel in the specific conditions of the enterprise's activity.

5.4 Motivation and stimulation of labor of the enterprise's personnel

Motivation of labor of the personnel is a system of measures aimed at increasing the labor productivity of personnel through the formation of employees' motives for effective work.

Stimulation of labor of the personnel is a system of incentives used in the enterprise for the formation of employees' motives for effective work, thus the increasing the labor productivity of personnel.

There are the following *types of the stimulation of labor of the enterprise's personnel*: material stimulation; non-material stimulation; compensatory stimulation; mixed stimulation.

Material stimulation of labor of the personnel (maximization of wages; active use of the system of allowances, surcharges and bonuses; additional payments; participation in the enterprise's profit) is the most universal, effective in the short term, costly and risky for the enterprise.

Non-material stimulation of labor of the personnel (gratitude; public encouragement; honorary awards) is the most profitable for the enterprise in terms of minimizing the costs, but the effectiveness of this type of stimulation of labor of the enterprise's personnel is significantly limited by the time and by the individual characteristics of the employees.

Compensatory stimulation of labor of the personnel (payment of transport costs, communication services, housing, training; providing the long-term vacation, dormitory, office accommodation; presence of the dining room, kindergarten in the enterprise) is based on the compensation by the enterprise the part of costs of the employees and aimed at forming a "sense of commitment to the enterprise" in the employees.

Mixed stimulation of labor of the personnel (valuable gifts; special pension programs; medical insurance; entertainment trips) is based on providing the non-monetary benefits to the employees.

Compensatory stimulation and mixed stimulation occupy an intermediate place between material stimulation and non-material stimulation. The effectiveness of these types of the stimulation of labor of the enterprise's personnel depends on the individual characteristics of employees (gender, age, marital status, family composition, material well-being, etc.).

The system of motivation of labor of the enterprise's personnel can include several types of stimulation.

Recommended videos

1. *Video "What is productivity?"*. Chanel "Educationleaves" on the YouTube.

Link: https://www.youtube.com/watch?v=yzlW7QPX_bU

2. *Video "Factors affecting productivity"*. Chanel "Education leaves" on the YouTube.

Link: <https://www.youtube.com/watch?v=YSgaUOfICCo>

3. *Video "How to measure productivity in the workplace"*. Chanel "Educationleaves" on the YouTube.

Link: <https://www.youtube.com/watch?v=PFoY7bK2eLA>

Theoretical questions

1. What is “personnel of the enterprise”?
2. How the personnel of the enterprise is classified by the participation in the production process?
3. What categories of the production personnel of the enterprise do you know?
4. What is “structural characteristic of personnel of the enterprise”?
5. What is “qualitative characteristics of personnel of the enterprise”?
6. What is “quantitative characteristics of personnel of the enterprise”?
7. How the number of core workers is planning?
8. How the number of auxiliary workers is planning?
9. How the number of management staff is planning?
10. What is “labor productivity”?
11. What indicators are characterized the labor productivity of personnel of the enterprise?
12. What is “output”?
13. What is “labor intensity”?
14. What are the peculiarities of the method of calculating the labor productivity of the personnel of the enterprise according to the dynamics of previous years?
15. What are the peculiarities of the method of the direct calculating the labor productivity of the personnel of the enterprise?
16. What are the peculiarities of the factorial method of calculating the labor productivity of the personnel of the enterprise?
17. What is “motivation of labor of the personnel”?
18. What is “stimulation of labor of the personnel”?
19. What types of the stimulation of labor of the personnel do you know?
20. Give an example of the material stimulation of labor of the personnel of the enterprise.
21. Give an example of the non-material stimulation of labor of the personnel of the enterprise.

22. Give an example of the compensatory stimulation of labor of the personnel of the enterprise.

23. Give an example of the mixed stimulation of labor of the personnel of the enterprise.

24. What factors depend on the effectiveness of the stimulation of labor of the personnel of the enterprise?

25. How many types of the stimulation of labor of the personnel can be included in the system of motivation of labor of the enterprise's personnel?

Test tasks

1. Personnel of the enterprise – ...

- a) permanent employees of the enterprise who have received the necessary professional training and/or have practical experience;
- b) part of the country's population that is able to work in terms of physical development, mental abilities and knowledges;
- c) human characteristics that are formed as a result of investments;
- d) health, knowledges, skills, abilities, motivations, that are purposefully used in a particular branch.

2. Ratio of categories of employees is ...

- a) structural characteristics of personnel;
- b) qualitative characteristics of personnel;
- c) quantitative characteristics of personnel;
- d) all answers are correct.

3. Distribution of employees by professions, specialties and qualification is ...

- a) structural characteristic of personnel;
- b) qualitative characteristics of personnel;
- c) quantitative characteristics of personnel;
- d) all answers are correct.

4. Number of employees hired in accordance with the concluded employment contracts is ...

- a) accounting number of the personnel;

- b) turnout number of the personnel;
- c) average accounting number of the personnel;
- d) all answers are correct.

5. *Number of employees who came to work is ...*

- a) accounting number of the personnel;
- b) turnout number of the personnel;
- c) average accounting number of the personnel;
- d) all answers are correct.

6. *Average number of the personnel taking into account the processes of hiring and firing of employees for a certain period is ...*

- a) accounting number of the personnel;
- b) turnout number of the personnel;
- c) average accounting number of the personnel;
- d) all answers are correct.

7. *Ratio of the number of hired employees to the average accounting number of the personnel of the enterprise is ...*

- a) turnover rate of the personnel by hiring;
- b) turnover rate of the personnel by firing;
- c) coefficient of personnel fluidity;
- d) all answers are correct.

8. *Ratio of the number of fired employees to the average accounting number of the personnel of the enterprise is ...*

- a) turnover rate of the personnel by hiring;
- b) turnover rate of the personnel by firing;
- c) coefficient of personnel fluidity;
- d) all answers are correct.

9. *Ratio of the number of employees, fired for the subjective reasons, to the average accounting number of the personnel of the enterprise is ...*

- a) turnover rate of the personnel by hiring;
- b) turnover rate of the personnel by firing;
- c) coefficient of personnel fluidity;
- d) all answers are correct.

10. Following factors are taken into account when planning the number of core workers ...

- a) complexity of the production program;
- b) duration of the work shift;
- c) repair complexity of the equipment;
- d) all answers are correct.

11. Volume of products, services, works, made (sold) by one employee, per unit of time is ...

- a) labor productivity;
- b) output;
- c) labor intensity;
- d) all answers are correct.

12. Working time per unit of products, services, works is ...

- a) labor productivity;
- b) output;
- c) labor intensity;
- d) all answers are correct.

13. Identify the method for planning the labor productivity of the personnel of the enterprise. "Planned level of the labor productivity of personnel is set based on its dynamics in previous periods without taking into account the possible features of the planning period" – ...

- a) method of calculating the labor productivity of the personnel according to the dynamics of previous years;
- b) method of the direct calculating the labor productivity of the personnel;
- c) factorial method of calculating the labor productivity of the personnel;
- d) all answers are correct.

14. Identify the method for planning the labor productivity of the personnel of the enterprise. "Planned level of the labor productivity of personnel is set based on the planned change in the volume of production program" – ...

- a) method of calculating the labor productivity of the personnel according to the dynamics of previous years;
- b) method of the direct calculating the labor productivity of the personnel;
- c) factorial method of calculating the labor productivity of the personnel;
- d) all answers are correct.

15. Identify the method for planning the labor productivity of the personnel of the enterprise. "Planned level of the labor productivity of personnel is set based on the influence of each factor on the labor productivity of personnel of the enterprise" ...

- a) method of calculating the labor productivity of the personnel according to the dynamics of previous years;
- b) method of the direct calculating the labor productivity of the personnel;
- c) factorial method of calculating the labor productivity of the personnel;
- d) all answers are correct.

16. Motivation of labor of the personnel is ...

- a) complex indicator of the efficiency of production activity of the personnel;
- b) system of measures aimed at increasing the labor productivity of personnel through the formation of employees' motives for effective work;
- c) system of incentives used in the enterprise for the formation of employees' motives for effective work, thus the increasing the labor productivity of personnel;
- d) all answers are correct.

17. Stimulation of labor of the personnel is ...

- a) complex indicator of the efficiency of production activity of the personnel;
- b) system of measures aimed at increasing the labor productivity of personnel through the formation of employees' motives for effective work;

- c) system of incentives used in the enterprise for the formation of employees' motives for effective work, thus the increasing the labor productivity of personnel;
- d) all answers are correct.

18. Participation of employees in the enterprise's profit is a part of ...

- a) material stimulation;
- b) non-material stimulation;
- c) compensatory stimulation;
- d) mixed stimulation.

19. Payment of transport costs of the employees is a part of ...

- a) material stimulation;
- b) non-material stimulation;
- c) compensatory stimulation;
- d) mixed stimulation.

20. Medical insurance of the employees is a part of ...

- a) material stimulation;
- b) non-material stimulation;
- c) compensatory stimulation;
- d) mixed stimulation.

Individual practical tasks

X – the second to last number of the individual plan of the student

Y – the last number of the individual plan of the student

Task 1. Determine the planned number of core workers and auxiliary workers (repairmen and electricians), if: number of weekends per year – $54+X$; number of holidays in the year that do not coincide with the weekends – $9+Y$ days; operating mode – one work shift; duration of work shift – 8 hours; coefficient that takes into account the time of vacations and absence of employees to work due to the valid reasons – $0,07+0,0X$; coefficient of the norms performance by the core workers – $1,05+0,0Y$; production program – $200000+X+Y$ units; labor intensity (per

unit) – $1,5+0, X$ norm-hours; standards of service for the auxiliary workers: for repairmen – $20+Y$ workplaces, for electricians – $30-X$ workplaces.

Evaluation criteria for task 1

FWT_n – 1 point. FWT_r – 1 point. N_{cw} – 1 point. N_r – 1 point. N_e – 1 point. N_{aw} – 1 point. *Total 6 points for task 1.*

Task 2. Determine the change in output at the enterprise in the reporting period compared to the planned indicators, if:

– planned labor intensity (per unit) of: product A – $14+X$ norm-hours, product B – $15+Y$ norm-hours, product C – $13-X$ norm-hours, product D – $18-Y$ norm-hours;

– actual labor intensity (per unit) of: product A – $15+X$ norm-hours, product B – $14+Y$ norm-hours, product C – $12-X$ norm-hours, product D – $19-Y$ norm-hours.

Evaluation criteria for task 2

ΔLI_{A-D} – 2 points. ΔO_{A-D} – 2 points. *Total 4 points for task 2.*

Methodical guidelines for solving practical tasks

Methodical instructions for completing the task 1:

1. Nominal fund of working time of employees is determined according to the following formula:

$$FWT_n = (N_{cd} - N_w - N_h) \cdot D_{wsh} \cdot n,$$

where N_{cd} – number of calendar days in a year, days;

N_w – number of weekends per year, days;

N_h – number of holidays in the year that do not coincide with the weekends, days;

D_{wsh} – duration of work shift, hours;

n – number of work shifts per day, shifts.

2. Real fund of working time of employees is calculated as follows:

$$FWT_r = FWT_n \cdot (1 - \alpha),$$

where α – coefficient that takes into account the time of vacations and absence of employees to work due to the valid reasons.

3. The number of core workers is calculated according to the following formula:

$$N_{cw} = \frac{LI}{FWT_r \cdot C_{np}},$$

where LI – labor intensity of the production program, norm-hours. Defined as a multiplication of the volume of production program and labor intensity (per unit);

C_{np} – coefficient of the norms performance by the core workers.

4. The number of auxiliary workers is defined as follows:

$$N_{aw} = \frac{N_{cw}}{S_{aw}},$$

where S_{aw} – standard of service for the auxiliary workers, workplaces.

Methodical instructions for completing the task 2:

1. The change in output at the enterprise is determined as follows:

$$\Delta O = \frac{\Delta LI \cdot 100}{100 - \Delta LI},$$

where ΔLI – change in labor intensity (per unit), %.

Examples of solutions to practical tasks

Example of solution to practical task 1:

Task 1. Determine the planned number of core workers and auxiliary workers (repairmen and electricians), if: number of weekends per year – 54; number of holidays in the year that do not coincide with the weekends – 9 days; operating mode – one work shift; duration of work shift – 8 hours; coefficient that takes into account the time of vacations and absence of employees to work due to the valid reasons – 0.07; coefficient of the norms performance by the core workers – 1.05; production program – 200000 units; labor intensity (per unit) – 1.5 norm-hours; standards of service for the auxiliary workers: for repairmen – 20 workplaces, for electricians – 30 workplaces.

1. Nominal fund of working time of employees is:

$$FWT_n = (365 - 54 - 9) * 1 * 8 = 2416 \text{ hours}$$

2. Real fund of working time of employees is:

$$FWT_r = 2416 * (1 - 0.07) = 2247 \text{ hours}$$

3. The number of core workers is:

$$N_{cw} = (200000 * 1.5) / (2247 * 1.05) = 300000 / 2359 = 128 \text{ workers}$$

4. The number of auxiliary workers is:

- the number of repairmen:

$$N_r = 128 / 20 = 6.4 = 7 \text{ workers}$$

- the number of electricians:

$$N_e = 128 / 30 = 4.27 = 5 \text{ workers}$$

- the number of auxiliary workers:

$$N_{aw} = 7 + 5 = 12 \text{ workers}$$

Example of solution to practical task 2:

Task 2. Determine the change in output at the enterprise in the reporting period compared to the planned indicators, if:

– planned labor intensity (per unit) of: product A – 14 norm-hours, product B – 15 norm-hours, product C – 13 norm-hours, product D – 18 norm-hours;

– actual labor intensity (per unit) of: product A – 15 norm-hours, product B – 14 norm-hours, product C – 12 norm-hours, product D – 19 norm-hours.

1. The change in labor intensity is:

$$\Delta LI_A = (15-14)/14 * 100 = 7.14\%$$

$$\Delta LI_B = (14-15)/15 * 100 = -6.67\%$$

$$\Delta LI_C = (12-13)/13 * 100 = -7.69\%$$

$$\Delta LI_D = (19-18)/18 * 100 = 5.56\%$$

2. The change in output at the enterprise is:

$$\Delta O_A = (7.14 * 100) / (100 - 7.14) = 714 / 92.86 = 7.69\% \text{ (decrease)}$$

$$\Delta O_B = (6.67 * 100) / (100 - 6.67) = 667 / 93.33 = 7.15\% \text{ (growth)}$$

$$\Delta O_C = (7.69 * 100) / (100 - 7.69) = 769 / 92.37 = 8.33\% \text{ (growth)}$$

$$\Delta O_D = (5.56 * 100) / (100 - 5.56) = 556 / 94.44 = 5.89\% \text{ (decrease)}$$

“Cup of coffee” psychological test.

Which type of labor stimulation is the most effective for you?

Choose 1 cup of coffee and find out which type of labor stimulation is the most effective for you.



Results

№ 1. Leader, careerist, optimist, maximalist. The most effective is a material stimulation.

№ 2. Family man (woman). You depend on the opinion of others. The compensatory stimulation and non-material stimulation are effective for you.

№ 3. Erudite. All types of labor stimulation are effective.

№ 4. “Middle”. The compensatory stimulation and mixed stimulation are effective for you.

№ 5. Perfectionist. The material stimulation and non-material stimulation are effective for you.

SECTION 6

PAYMENT OF LABOR OF THE ENTERPRISE'S PERSONNEL

6.1 Essence, structure, functions and types of wages

6.2 Forms and systems of payment of labor of the enterprise's personnel

6.1 Essence, structure, functions and types of wages

Wages (salary, earnings) – the remuneration, usually calculated in cash, which the employer pays to the employee for the performed work.

The size of the employee's salary depends on:

- the complexity of work and the working conditions;
- the professional and qualification qualities of the employee;
- the results of the employee's work;
- the results of economic activity of the enterprise;
- the unemployment rate in the region or branch;
- the personnel policy of the enterprise.

The statutory amount of the *minimum wages* as a state social guarantee of wages also has a significant impact on the amount of salary.

Traditionally, there are *3 structural elements* in the salary:

- *basic salary* – the remuneration for work in accordance with the established labor standards;
- *additional salary* – the remuneration for work above the established labor standards, for the labor successes and ingenuity, for the special working conditions;
- *other incentive and compensation payments*. These include payments in the form of remuneration for the year, bonuses for special systems and regulations, compensation and other monetary and material payments that are not provided by current legislation or are made in excess of the standards established by these acts.

Basic salary and additional salary are the planned costs of the enterprise and are included in the cost of products, services, works.

Other incentives and compensation payments are reimbursed from the enterprise's net profit.

Wages perform the following *functions*:

- *reproductive function* – the level of wages should ensure the reproduction and development of labor potential;
- *motivational (stimulating) function* – the level of wages should motivate (stimulate) the employee to the best performance of duties;
- *status function* – the level of wages must ensure the social status of the employee, corresponding to the employment status;
- *regulatory function* – the level of wages should be adequate to the ratio of demand and supply in the labor market;
- *production-share function* – the level of wages characterizes the importance of labor as a factor of production through the analysis of the share of labor costs in the cost of products, services, works.

There are 2 types of wages: nominal wages and real wages.

Nominal wages – the amount of money received by an employee for work for the period.

Real wages – the quantity of goods and services that an employee can purchase for the nominal wages.

6.2 Forms and systems of payment of labor of the enterprise's personnel

In the modern conditions, enterprises use two *forms of payment of labor of the personnel: piecework form and time-based form*.

The fundamental difference between the piecework form and the time-based form of payment of labor of the enterprise's personnel is the base for accrual of remuneration:

- in case of use of the piecework form – the volume of products, services, works, made (sold) by the employee;
- in case of use of the time-based form – the amount of hours, worked by the employee.

Piecework form of payment of labor of the enterprise's personnel includes systems:

- *direct piecework system*, when the amount of salary is calculated as multiplication of the well-grounded piece rate and the actual volume of products, services, works, made (sold) by the employee;
- *piecework bonus system*, which provides for the accrual of bonuses for the achieved quantitative and qualitative indicators of

products, services, works in addition to the salary accrued at the direct piecework system;

- *piecework progressive system*, which provides for the payment of products, services, works, made (sold) by the employee within the established norms, at the basic piece rate, and the products, services, works, made (sold) by the employee in excess of the established norms – at the higher piece rate;

- *chord system*, when the amount of salary is set according to the current standards and the piece rate for the complex of products, services, works;

- *indirect piecework system*, when the amount of salary of some employees depend on the labor productivity of other employees due to the impossibility of the accurately estimating their labor contribution.

Time-based form of payment of labor of the enterprise's personnel includes systems:

- *simple time-based system*, when the amount of salary is calculated as multiplication of the well-grounded hourly tariff rate and the actual amount of hours, worked by the employee;

- *time-based bonus system*, which provides for the accrual of bonuses for the implementation of planned indicators in addition to the salary accrued at the simple time-based system;

- *framework system*, when the amount of salary of the employee is established and does not depend on the amount of hours, worked by the employee.

Recommended video

1. Video “*Difference between Salaries and Wages*”. Chanel “DifferenceHD” on the YouTube.

Link: <https://www.youtube.com/watch?v=Uo5aXrFPHPw>

Theoretical questions

1. What are “wages (salary, earnings)”?
2. What factors depend on the size of the employee's salary?
3. What are “minimum wages”?
4. What is the size of the minimum wages in Ukraine?

5. List and describe the structural elements of salary.
6. Which of the structural elements of salary are the planned costs of the enterprise?
7. Which of the structural elements of salary are included in the cost of products, services, works?
8. Which of the structural elements of salary are reimbursed from the enterprise's net profit?
9. List and describe the functions of wages.
10. What is the most important function of wages, in your opinion?
11. What types of wages do you know?
12. What are “nominal wages”?
13. What are “real wages”?
14. Name and describe the forms of payment of labor of the enterprise's personnel.
15. What is the difference between the piecework form and the time-based form of payment of labor of the enterprise's personnel?
16. List the systems of the piecework form of payment of labor of the enterprise's personnel.
17. What are the features of the estimation of wages using the direct piecework system?
18. What are the features of the estimation of wages using the piecework bonus system?
19. What are the features of the estimation of wages using the piecework progressive system?
20. What are the features of the estimation of wages using the chord system?
21. What are the features of the estimation of wages using the indirect piecework system?
22. List the systems of the time-based form of payment of labor of the enterprise's personnel.
23. What are the features of the estimation of wages using the simple time-based system?
24. What are the features of the estimation of wages using the time-based bonus system?
25. What are the features of the estimation of wages using the framework system?

Test tasks

1. *Wages are ...*

- a) economic category, which reflects the relationship between employer and employee regarding the distribution of newly created value of products, services, works;
- b) element of the labor market, which is formed as a result of the interaction of demand and supply and expresses the price of labor;
- c) remuneration, usually calculated in cash, which the employer pays to the employee for the performed work;
- d) all answers are correct.

2. *Size of the employee's salary depends on ...*

- a) working conditions;
- b) unemployment rate in the region or branch;
- c) size of minimum wages;
- d) all answers are correct.

3. *Size of the employee's salary depends on ...*

- a) personnel policy of the enterprise;
- b) results of the employee's work;
- c) results of economic activity of the enterprise;
- d) all answers are correct.

4. *In Ukraine the size of the minimum wages are set by the regulations of ...*

- a) Labor code of Ukraine;
- b) Law of Ukraine “On wages”;
- c) Law of Ukraine “On collection and accounting of a single contribution to the obligatory state social insurance”;
- d) Law of Ukraine “On the State budget of Ukraine”.

5. *Remuneration for work in accordance with the established labor standards ...*

- a) basic salary;
- b) additional salary;
- c) other incentive and compensation payments;

d) all answers are correct.

6. *Remuneration for work above the established labor standards, for the labor successes and ingenuity, for the special working conditions*

...

- a) basic salary;
- b) additional salary;
- c) other incentive and compensation payments;
- d) all answers are correct.

7. *Payments in the form of remuneration for the year, bonuses for special systems and regulations, compensation and other monetary and material payments that are not provided by current legislation or are made in excess of the norms established by these acts...*

- a) basic salary;
- b) additional salary;
- c) other incentive and compensation payments;
- d) all answers are correct.

8. *Planned costs of the enterprise are ...*

- a) basic salary;
- b) additional salary;
- c) other incentive and compensation payments;
- d) all answers are correct.

9. *Identify the function of wages. "Level of wages should be adequate to the ratio of demand and supply in the labor market" ...*

- a) reproductive function;
- b) status function;
- c) regulatory function;
- d) production-share function.

10. *Identify the function of wages. "Level of wages characterizes the importance of labor as a factor of production through the analysis of the share of labor costs in the cost of products, services, works" ...*

- a) reproductive function;
- b) status function;
- c) regulatory function;

d) production-share function.

11. State social guarantee of wages ...

- a) wages;
- b) minimum wages;
- c) nominal wages;
- d) real wages.

12. Quantity of goods and services that an employee can purchase for the nominal wages ...

- a) wages;
- b) minimum wages;
- c) nominal wages;
- d) real wages.

13. Amount of salary is calculated as multiplication of the well-grounded piece rate and the actual volume of products, services, works, made (sold) by the employee, in accordance with such system of payment of labor of the enterprise's personnel ...

- a) direct piecework system;
- b) chord system;
- c) simple time-based system;
- d) framework system.

14. Such system of payment of labor of the enterprise's personnel provides for the accrual of bonuses for the achieved quantitative and qualitative indicators of products, services, works in addition to the salary accrued at the direct piecework system ...

- a) piecework bonus system;
- b) piecework progressive system;
- c) indirect piecework system;
- d) time-based bonus system.

15. Such system of payment of labor of the enterprise's personnel provides for the payment of products, services, works, made (sold) by the employee within the established norms, at the basic piece rate, and the products, services, works, made (sold) by the employee in excess of the established norms – at the higher piece rate ...

- a) direct piecework system;
- b) piecework bonus system;
- c) piecework progressive system;
- d) indirect piecework system.

16. Amount of salary is set according to the current standards and the piece rate for the complex of products, services, works in accordance with such system of payment of labor of the enterprise's personnel ...

- a) direct piecework system;
- b) piecework progressive system;
- c) chord system;
- d) indirect piecework system.

17. Amount of salary of some employees depend on the labor productivity of other employees due to the impossibility of the accurately estimating their labor contribution in accordance with such system of payment of labor of the enterprise's personnel ...

- a) direct piecework system;
- b) piecework bonus system;
- c) piecework progressive system;
- d) indirect piecework system.

18. Amount of salary is calculated as multiplication of the well-grounded hourly tariff rate and the actual amount of hours, worked by the employee, in accordance with such system of payment of labor of the enterprise's personnel ...

- a) direct piecework system;
- b) chord system;
- c) simple time-based system;
- d) framework system.

19. Such system of payment of labor of the enterprise's personnel provides for the accrual of bonuses for the implementation of planned indicators in addition to the salary accrued at the simple time-based system ...

- a) piecework bonus system;
- b) chord system;
- c) time-based bonus system;

d) framework system.

20. Amount of salary of the employee is established and does not depend on the amount of hours, worked by the employee, in accordance with such system of payment of labor of the enterprise's personnel ...

- a) chord system;
- b) simple time-based system;
- c) time-based bonus system;
- d) framework system.

Individual practical task

X – the second to last number of the individual plan of the student
 Y – the last number of the individual plan of the student

Task 1. Using the tariff coefficients for the ranks of workers under normal working conditions (Tbl 6.1) and the scale of bonuses for workers for the implementation of the production task (Tbl 6.2), calculate the monthly salary of the worker on the direct piecework system, the piecework bonus system and the piecework progressive system under the following conditions: actual monthly volume of products manufactured by the worker was $100+X-Y$ units with a planned volume of $80-X+Y$ units; enterprise provides bonuses to workers for the implementation of the planned production task in the amount of $5+Y\%$ of the basic salary, as well as in the amount of $1,X\%$ of the basic salary for each percentage of overfulfillment of the planned production task; labor intensity of production per unit of output is $3,X$ norm-hours; rank of worker – V; hourly tariff rate of the worker of the I rank – $37,Y$ UAH/hour.

Table 6.1

Tariff coefficients for the ranks of workers

Working conditions	Tariff coefficients for the ranks of workers					
	I	II	III	IV	V	VI
Normal	1	1,09	1,2	1,33	1,5	1,72

Table 6.2

Scale of bonuses for the implementation of the production task

<i>Percentage of overfulfillment of the production task, %</i>	1-4,99	5 -9,99	10 - 4,99	15 -19,99	20-24,99	25 -29,99	30 -39,99	40 and more
<i>Percentage of increase of the piece rate, %</i>	12,5	25,0	37,5	50,0	62,5	75,0	87,5	100,0

Evaluation criteria for task 1

HTR_V – 1 point. PR – 1 point. S_{dps} – 1 point. P_{ov} – 1 point. B – 1 point. S_{pbs} – 1 point. PR' – 1 point. S_{pps} – 1 point. *Total 8 points for task 1.*

Methodical guidelines for solving practical task

1. When using the direct piecework system, the employee's salary is calculated as follows:

$$S_{dps} = Q_{act} \cdot PR,$$

where Q_{act} – actual volume of products manufactured by the worker, units;

PR – piece rate per unit of output, UAH:

$$PR = LI_{un} \cdot HTR_V,$$

where LI_{un} – labor intensity of production per unit of output, norm-hours;

HTR_V – hourly tariff rate of the worker of the V rank, UAH:

$$HTR_V = HTR_I \cdot TC_V,$$

where HTR_I – hourly tariff rate of the worker of the I rank, UAH;

TC_V – tariff coefficients for the worker of the V rank.

2. When using the piecework bonus system, the employee's salary is calculated as follows:

$$S_{pbs} = S_{dps} + B,$$

where B – bonuses, UAH:

$$B = S_{dps} \cdot \frac{B_{imp} + B_{ov} \cdot P_{ov}}{100},$$

where B_{imp} – bonus provided for the implementation of the planned production task by the worker, %;

B_{ov} – bonus provided for the overfulfillment of the planned production task by the worker, %;

P_{ov} – percentage of overfulfillment of the planned production task by the worker, %:

$$P_{ov} = \frac{Q_{act} - Q_{pl}}{Q_{pl}} \cdot 100,$$

where Q_{pl} – planned volume of products manufactured by the worker, units.

3. When using the piecework progressive system, the employee's salary is calculated as follows:

$$S_{pps} = Q_{pl} \cdot PR + (Q_{act} - Q_{pl}) \cdot PR',$$

where PR' – higher piece rate per unit of output, UAH:

$$PR' = PR \cdot \left(1 + \frac{P_{inc}}{100}\right),$$

where P_{inc} – percentage of increase of the piece rate when the production task is over-executed, %.

Based on the results of the calculations, the amounts of the employee's monthly salary, calculated according to different systems of piecework form of payment, are compared.

Example of solution to practical task

Task 1. Using the tariff coefficients for the ranks of workers under normal working conditions (Tbl 6.1) and the scale of bonuses for workers for the implementation of the production task (Tbl 6.2), calculate the monthly salary of the worker on the direct piecework system, the piecework bonus system and the piecework progressive system under the following conditions: actual monthly volume of products manufactured by the worker was 100 units with a planned volume of 80 units; enterprise provides bonuses to workers for the implementation of the planned production task in the amount of 5% of the basic salary, as well as in the amount of 1% of the basic salary for each percentage of overfulfillment of the planned production task; labor intensity of production per unit of output is 3 norm-hours; rank of worker – V; hourly tariff rate of the worker of the I rank – 37 UAH/hour.

1. The hourly tariff rate of the worker of the V rank is:

$$HTR_V = 37 * 1.5 = 55.5 \text{ UAH}$$

2. The piece rate per unit of output is:

$$PR = 3 * 55.5 = 166.5 \text{ UAH}$$

3. When using the direct piecework system, the employee's salary is:

$$S_{dps} = 100 * 166.5 = 16650 \text{ UAH}$$

4. The percentage of overfulfillment of the planned production task by the worker is:

$$P_{ov} = (100 - 80) / 80 * 100 = 25\%$$

5. The bonuses are:

$$B = 16650 * ((5 + 1 * 25) / 100) = 4995 \text{ UAH}$$

6. When using the piecework bonus system, the employee's salary is:

$$S_{pbs} = 16650 + 4995 = 21645 \text{ UAH}$$

7. The higher piece rate per unit of output is:

$$PR' = 166.5 * (1 + 75 / 100) = 291.38 \text{ UAH}$$

8. When using the piecework progressive system, the employee's salary is:

$$S_{pps}=80*166.5+(100-80)*291.38=13320+5827.6=19147.6 \text{ UAH}$$

The most profitable for the enterprise is the use of a direct piecework system, as it minimizes the costs of personnel wages. The most profitable for the employee is the use of the piecework bonus system, as it maximizes the employee's income. The piecework progressive system in this context is a compromise between the desire of the enterprise to minimize costs and the desire of the employee to maximize income.

PART III

ECONOMIC RESULTS OF THE ENTERPRISE

SECTION 7

COSTS OF THE ENTERPRISE AND COST OF PRODUCTS, SERVICES, WORKS

7.1 Essence and types of costs of the enterprise

7.2 Essence, functions, types and methods of calculating the cost of products, services, works

7.3 Directions for reducing the cost of products, services, works

7.1 Essence and types of costs of the enterprise

Costs are the monetary expression of spent production factors for the enterprise to carry out activities.

The costs of the enterprise are classified:

- by the type of activity;
- in relation to the volume of production;
- by the costing method;
- by the economic content.

By the type of activity the costs of the enterprise are classified as:

- *costs of the operating activity* – costs necessary for production of products, services, works;

- *costs of the investment activity* – costs incurred by the enterprise in investing capital;

- *costs of the financial activity* – costs incurred by the enterprise in repaying financial liabilities.

In relation to the volume of production the costs are divided into variable costs and fixed costs.

Variable costs are costs, the absolute value of which changes with the change in the volume of production of products, services, works (costs of raw materials, components, fuel, electricity, wages of workers (with deductions), marketing costs).

Fixed costs are costs, the absolute value of which does not change with the change in the volume of production of products, services, works

(rent, salaries of administrative and management staff (with deductions), maintenance costs of fixed assets for non-production purposes).

The dynamics of changes in volume of variable costs and fixed costs when changing the volume of production of products, services, works are presented in Tbl 7.1.

Table 7.1

Changes in volume of variable costs and fixed costs when changing the volume of production of products, services, works

<i>Volume of production</i>	<i>Variable costs</i>		<i>Fixed costs</i>	
	<i>Total</i>	<i>Per unit</i>	<i>Total</i>	<i>Per unit</i>
increases	increase	not change	not change	decrease
decreases	decrease	not change	not change	increase

The sum of fixed costs and variable costs is the *total costs of the enterprise*.

By the costing method the costs are divided into direct costs and indirect costs.

Direct costs include costs that can be directly included in the cost of products, services, works, as directly related to their production.

Indirect costs include costs that are not directly related to the production of products, services, works, however, are included in their cost.

By the economic content the costs are classified by: economic elements; calculation items.

Economic elements are economically homogeneous costs, namely: material costs; salary costs; deductions for social events; depreciation of fixed assets; other operating costs.

The grouping of costs *by calculation items* is designed to organize of the analytical cost accounting and calculating the certain types of products, services, works.

7.2 Essence, functions, types and methods of calculating the cost of products, services, works

Cost is a monetary expression of everything that an enterprise needs for the production and sale of products, services, works.

Cost functions: accounting and control of all costs; base for formation of the wholesale price, planning of the profit and profitability; economic justification for expediency of investment in reconstruction, technical re-equipment and expansion of the enterprise; economic justification for making any management decisions.

According to the amount of costs taken into account, there are three types of cost:

- *workshop cost*, which includes costs within the workshop, in particular, direct material costs, depreciation of workshop equipment, salary fund of production personnel, social contribution, costs of maintenance and operation of equipment, general workshop costs;
- *production cost*, which in addition to the workshop cost of products, services, works, includes overhead costs (administrative costs and general expenses) and ancillary production costs;
- *total cost* is an indicator that combines the production cost of products, services, works and costs of sale (commercial costs, non-production costs).

There are also *planned cost* and *actual cost*.

Planned cost is determined at the beginning of the planning year, based on the planned cost norms and other planned indicators for this period.

Actual cost is determined at the end of the reporting period on the basis of accounting data.

Calculating is the process of determining the cost of a particular cost object.

Depending on the character of production activity, there are two main calculating systems:

- calculating by the orders;
- calculating by the processes.

Calculating by the orders is a calculating system based on taking into account the cost of each individual product or separate party products.

Calculating by the processes is a calculating system based on the grouping of costs within individual processes or stages of production.

Also allocate the *calculating of total costs* and the *calculating of variable costs*.

Calculating of total costs is a method of calculating, which involves the inclusion in the cost of total (variable and fixed) costs.

Calculating of variable costs is a method of calculating, which involves the inclusion in the cost of only variable costs. In this case, fixed costs are offset by net profit.

7.3 Directions for reducing the cost of products, services, works

The main directions for reducing the cost of products, services, works are:

- *scientific and technological progress*: introduction of new equipment; complex mechanization and automation of production and service processes; improvement of technology; introduction of the progressive types of materials;

- *expansion of specialization and cooperation*. In organizations specializing in the mass production, the cost of production is lower than in organizations that produce the same products in small quantities (there is an “economies of scale”);

- *increasing the productivity of the enterprise’s personnel*. With the growth of the productivity of the enterprise’s personnel, the labor costs per unit reduce and the share of wages in the cost of products, services, works decreases;

- *compliance with the economy regime*. Consistent implementation of the economy regime in organizations is manifested, first of all, in reducing the cost of material resources per unit, reducing the cost of maintenance of production and management, the elimination of losses from defects and other unproductive costs.

Recommended videos

1. *Video “What is standard costing?”*. Chanel “Educationleaves” on the YouTube.

Link: <https://www.youtube.com/watch?v=6S4N08BmRMs>

2. *Video “Elements of cost”*. Chanel “Educationleaves” on the YouTube.

Link: <https://www.youtube.com/watch?v=UFBaj6AHjHQ>

3. Video “*Prime cost, Overhead, Factory cost and Total cost*”. Chanel “Educationleaves” on the YouTube.

Link: <https://www.youtube.com/watch?v=8ydjXs6Fe4o>

4. Video “*Cost control*”. Chanel “Educationleaves” on the YouTube.

Link: <https://www.youtube.com/watch?v=yMg3gJx48Fg>

Theoretical questions

1. What are “costs”?
2. How are the costs of the enterprise classified by the type of activity?
3. How are the costs of the enterprise classified in relation to the volume of production?
4. What are “variable costs”?
5. Give an example of variable costs of the enterprise.
6. What are “fixed costs”?
7. Give an example of fixed costs of the enterprise.
8. What are “total costs”?
9. Describe the changes in volume of variable costs (total and per unit) when the volume of production of products, services, works increases.
10. Describe the changes in volume of fixed costs (total and per unit) when the volume of production of products, services, works increases.
11. Describe the changes in volume of variable costs (total and per unit) when the volume of production of products, services, works decreases.
12. Describe the changes in volume of fixed costs (total and per unit) when the volume of production of products, services, works decreases.
13. How are the costs of the enterprise classified by the costing method?
14. What are “direct costs”?
15. Give an example of direct costs of the enterprise.
16. What are “indirect costs”?
17. Give an example of indirect costs of the enterprise.

18. How are the costs of the enterprise classified by the economic content?
19. What are “economic elements”?
20. Give an example of “economic elements”.
21. What are “calculation items”?
22. What is “cost”?
23. Name and describe the cost functions.
24. What types of cost are allocated depending on the amount of costs taken into account?
25. What are the calculation items of workshop cost of products, services, works?
26. What are the calculation items of production cost of products, services, works?
27. What are the calculation items of total cost of products, services, works?
28. What is “planned cost”?
29. What is “actual cost”?
30. What calculating systems do you know?
31. What calculating methods do you know?
32. Describe “scientific and technological progress” as the direction for reducing the cost of products, services, works.
33. Describe “expansion of specialization and cooperation” as the direction for reducing the cost of products, services, works.
34. Describe “increasing the productivity of the enterprise’s personnel” as the direction for reducing the cost of products, services, works.
35. Describe “compliance with the economy regime” as the direction for reducing the cost of products, services, works.

Test tasks

1. *Costs necessary for production of products, services, works are ...*
 - a) costs of the operating activity;
 - b) costs of the investment activity;
 - c) costs of the financial activity;
 - d) all answers are correct.

2. *Costs incurred by the enterprise in investing capital are ...*

- a) costs of the operating activity;
- b) costs of the investment activity;
- c) costs of the financial activity;
- d) all answers are correct.

3. *Costs incurred by the enterprise in repaying financial liabilities are ...*

- a) costs of the operating activity;
- b) costs of the investment activity;
- c) costs of the financial activity;
- d) all answers are correct.

4. *Costs, the absolute value of which changes with the change in the volume of production of products, services, works, are ...*

- a) variable costs;
- b) fixed costs;
- c) direct costs;
- d) indirect costs.

5. *Costs, the absolute value of which does not change with the change in the volume of production of products, services, works, are ...*

- a) variable costs;
- b) fixed costs;
- c) direct costs;
- d) indirect costs.

6. *When the volume of production of products, services, works is increasing, the variable costs ...*

- a) per volume of production – decrease, per unit – remain unchanged;
- b) per volume of production – increase, per unit – remain unchanged;
- c) per volume of production – remain unchanged, per unit – decrease;
- d) per volume of production – remain unchanged, per unit – increase.

7. *When the volume of production of products, services, works is decreasing, the variable costs ...*

a) per volume of production – decrease, per unit – remain unchanged;

b) per volume of production – increase, per unit – remain unchanged;

c) per volume of production – remain unchanged, per unit – decrease;

d) per volume of production – remain unchanged, per unit – increase.

8. *When the volume of production of products, services, works is increasing, the fixed costs ...*

a) per volume of production – decrease, per unit – remain unchanged;

b) per volume of production – increase, per unit – remain unchanged;

c) per volume of production – remain unchanged, per unit – decrease;

d) per volume of production – remain unchanged, per unit – increase.

9. *When the volume of production of products, services, works is decreasing, the fixed costs ...*

a) per volume of production – decrease, per unit – remain unchanged;

b) per volume of production – increase, per unit – remain unchanged;

c) per volume of production – remain unchanged, per unit – decrease;

d) per volume of production – remain unchanged, per unit – increase.

10. *Direct material costs are taken into account in ...*

a) workshop cost;

b) production cost;

- c) total cost;
- d) there is no correct answer.

11. Overhead costs are taken into account in ...

- a) workshop cost;
- b) production cost;
- c) total cost;
- d) there is no correct answer.

12. Costs of sale are taken into account in ...

- a) workshop cost;
- b) production cost;
- c) total cost;
- d) there is no correct answer.

13. Calculating system based on taking into account the cost of each individual product or separate party products is ...

- a) calculating by the orders;
- b) calculating by the processes;
- c) calculating of total costs;
- d) calculating of variable costs.

14. Calculating system based on the grouping of costs within individual processes or stages of production is ...

- a) calculating by the orders;
- b) calculating by the processes;
- c) calculating of total costs;
- d) calculating of variable costs.

15. Method of calculating, which involves the inclusion in the cost of total (variable and fixed) costs, is ...

- a) calculating by the orders;
- b) calculating by the processes;
- c) calculating of total costs;
- d) calculating of variable costs.

16. Method of calculating, which involves the inclusion in the cost of only variable costs, is ...

- a) calculating by the orders;
- b) calculating by the processes;
- c) calculating of total costs;
- d) calculating of variable costs.

17. Complex mechanization and automation of production and service processes belong to such direction for reducing the cost of products, services, works ...

- a) scientific and technological progress;
- b) expansion of specialization and cooperation;
- c) increasing the productivity of the enterprise's personnel;
- d) compliance with the economy regime.

18. "Economies of scale" belongs to such direction for reducing the cost of products, services, works ...

- a) scientific and technological progress;
- b) expansion of specialization and cooperation;
- c) increasing the productivity of the enterprise's personnel;
- d) compliance with the economy regime.

19. Reducing of the labor costs achieves due to implementation of such direction for reducing the cost of products, services, works ...

- a) scientific and technological progress;
- b) expansion of specialization and cooperation;
- c) increasing the productivity of the enterprise's personnel;
- d) compliance with the economy regime.

20. Reducing of the unproductive costs achieves due to implementation of such direction for reducing the cost of products, services, works ...

- a) scientific and technological progress;
- b) expansion of specialization and cooperation;
- c) increasing the productivity of the enterprise's personnel;
- d) compliance with the economy regime.

Individual practical task

X – the second to last number of the individual plan of the student

Y – the last number of the individual plan of the student

Task 1. Calculate the cost of products (total and per unit) under the following conditions: production program of the enterprise is $3000+X$ units; material costs per unit are $15-Y$ UAH; salary fund of the production personnel is $1XY000$ UAH; social contribution is set in the amount provided by the current legislation; depreciation of fixed assets of the workshop is $1X0000$ UAH; overhead costs are $20+Y$ % of the workshop cost of products; costs of sale are $10+X$ % of the production cost of products. The results of the calculations are presented in the form of calculation of cost of products (Tbl 7.2).

Table 7.2

Calculation of cost of products

Calculation items	Amount of costs, UAH	
	Total	Per unit
1. Material costs		
2. Wages of personnel, including:		
salary fund of the production personnel		
social contribution		
3. Depreciation of fixed assets		
4. Workshop cost		
5. Overhead costs		
6. Production cost		
7. Costs of sale		
8. Total cost		

Evaluation criteria for task 1

MC – 1 point. SC – 1 point. WP – 1 point. WC – 1 point. OC – 1 point. PC – 1 point. CS – 1 point. TC – 1 point. Completed calculation table – 4 points. *Total 12 points for task 1.*

Methodical guidelines for solving practical task

1. The workshop cost of products is calculated as follows:

$$WC = MC + WP + D_{FA},$$

where MC – material costs for the production program, UAH:

$$MC = MC_{un} \cdot Q,$$

where MC_{un} – material costs per unit, UAH;

Q – production program of the enterprise, units;

WP – wages of personnel, UAH:

$$WP = SF_{pp} + SC,$$

where SF_{pp} – salary fund of the production personnel, UAH;

SC – social contribution, UAH;

D_{FA} – depreciation of fixed assets, UAH.

2. The production cost of products is calculated as follows:

$$PC = WC + OC,$$

where OC – overhead costs, UAH.

3. The total cost of products is determined by the formula:

$$TC = PC + CS,$$

where CS – costs of sale, UAH.

Example of solution to practical task

Task 1. Calculate the cost of products (total and per unit) under the following conditions: production program of the enterprise is 3000 units; material costs per unit are 15 UAH; salary fund of the production personnel is 165000 UAH; social contribution is set in the amount provided by the current legislation; depreciation of fixed assets of the workshop is 140000 UAH; overhead costs are 20% of the workshop cost of products; costs of sale are 10% of the production cost of products.

1. The material costs for the production program are:

$$MC = 15 \times 3000 = 45000 \text{ UAH}$$

2. The social contribution is:

$$SC = 165000 \times 0.22 = 36300 \text{ UAH}$$

3. The wages of personnel is:

$$WP = 165000 + 36300 = 201300 \text{ UAH}$$

4. The workshop cost of products is:

$$WC = 45000 + 201300 + 140000 = 386300 \text{ UAH}$$

5. The overhead costs are:

$$OC = 0.2 \times 386300 = 77260 \text{ UAH}$$

6. The production cost of products is:

$$PC = 386300 + 77260 = 463560 \text{ UAH}$$

7. The costs of sale are:

$$CS = 0.1 \times 463560 = 46356 \text{ UAH}$$

8. The total cost of products is:

$$TC = 463560 + 46356 = 509916 \text{ UAH}$$

The results of the calculations are presented in the form of calculation of cost of products (Tbl 7.3).

Table 7.3

Calculation of cost of products

<i>Calculation items</i>	<i>Amount of costs, UAH</i>	
	<i>Total</i>	<i>Per unit</i>
1. Material costs	45000	15.0
2. Wages of personnel, including:	201300	67.1
salary fund of the production personnel	165000	55.0
social contribution	36300	12.1
3. Depreciation of fixed assets	140000	46.7
4. Workshop cost	386300	128.8
5. Overhead costs	77260	25.8
6. Production cost	463560	154.5
7. Costs of sale	46356	15.5
8. Total cost	509916	170.0

SECTION 8

PRICING AND FINANCIAL RESULT OF THE ENTERPRISE

8.1 Essence, functions and types of prices

8.2 Pricing process at the enterprise

8.3 Pricing strategy of the enterprise

8.4 Procedure for forming the financial result of the enterprise

8.1 Essence and functions of prices

In modern business conditions the financial results and, accordingly, the economic efficiency of the enterprise depend on the *approach to pricing*:

- market approach;
- production (cost) approach.

Within the *market approach* price is a monetary form of expression of the value of goods, which is manifested in the process of their exchange. In this case, the determining factor in price formation is market conditions – the ratio of supply and demand.

In the *production (cost) approach* the basis for the formation of prices are production costs with the addition of profit and value added tax. Therefore, the *price* means as the monetary expression of the goods value.

Prices perform a number of *functions*, namely:

- *accounting* – prices allow to compare different goods that are not comparable in terms of consumer characteristics;
- *redistribution* – prices contribute to the redistribution of the created products between economic sectors, economic units, regions and population groups;
- *stimulating* – incentive and deterrent effect of prices on various areas of reproduction;
- *balancing demand and supply* – balancing demand and supply can be achieved by finding an equilibrium price.

Prices used in economic practice can be classified on various features, the most common of which are:

- 1) classification by the economic mechanism of price formation;
- 2) classification by the type of economic activity.

Depending on the *economic mechanism of price formation*, the classification of prices takes into account the different degree of influence of central and local governments, according to which all prices can be grouped into 3 main groups:

1) *free prices* are formed exclusively under the influence of supply and demand, and the authorities can have only an indirect effect on the level of prices;

2) *regulated prices* take place when the government limits the cost and/or profit of the supplier (seller) by establishing appropriate rules and regulations;

3) *fixed prices* are formed on the basis of the normative approach which assumes not only blocking of the prices, but also fixing of the price (costs and profit) which is carried out in branches and/or regions.

By the type of economic activity there are main types of prices (Tbl 8.1).

Table 8.1

Types of prices by the type of economic activity

<i>Type of economic activity</i>	<i>Type of price</i>	<i>Price determination</i>
Industry	Sale (wholesale) price	Price at which the products of an industrial enterprise are sold and purchased
Trade	Retail price	Price at which goods are sold in the retail network
Agriculture	Purchase price	Price at which agricultural products are purchased from farmers
Construction	Estimated price	Price of a complete list of all works, considered according to the norms and standards
	List price	Price per unit of work
	Negotiable (contract) price	Price by agreement of the parties to the contract
Transport	Tariff	Price for transportation of passengers or freight
Communication	Tariff	Price for communication services (post, telephone, Internet etc.)

8.2 Pricing process at the enterprise

The pricing process includes the following stages:

1) *setting goals for pricing policy.* As a rule, there are three main goals of pricing policy: ensuring the survival of the enterprise; profit maximization; market retention;

2) *determination of demand;*

3) *cost analysis and accounting;*

4) *taking into account the prices of competitors;*

5) *choice of pricing method.* The most common methods of pricing are: method based on production costs; method of return on capital – based on adding the interest on invested capital to the cost per unit of output; method of determining prices with a focus on demand; method based on current prices;

6) *determination of the final price.*

8.3 Pricing strategy of the enterprise

The pricing strategy of enterprise is a well-grounded choice of several price options aimed at maximizing its profits within the planned period.

In practice, the following *pricing strategies* are used:

1. *Skimming pricing strategy.* It suggests setting prices which are significantly higher than the production cost during the initial stage, with their consequent gradual decrease.

The main disadvantage of the pricing strategy is that a high price attracts competitors – potential producers of similar products. The strategy of price-skimming is most effective with using some limitation of competition. Another necessary condition for success is sufficient demand.

2. *Penetration pricing strategy* implies setting a much lower price for an enterprise's product than that for similar products of competitors. This gives the enterprise an opportunity to attract the maximum number of consumers and contributes to its conquering the market. However, this strategy is used only when large volumes of production allow the enterprise to cover its loss associated with a certain product with the total profit gained.

The implementation of the strategy requires large material costs, which small and medium-sized enterprises cannot afford, since they do not have the capacity to quickly expand their production. The strategy is effective in case of elastic demand or if a growth in the enterprise's output provides a reduction in costs.

3. *Psychological pricing strategy (odd-even pricing)* is based on the establishment of a price which takes into account the psychology of buyers, especially their price perception. Typically, the price is set at the level just under a round number, thus creating the impression of a very precise calculation of the production cost, impossibility of fraud, low price, discount, and advantage for a buyer. The psychological moment that buyers like to get their change is also taken into account.

4. *Cost leadership strategy* in an industry or in the market suggests that the price for a product is determined based on that offered by the main competitor, the enterprise leading in the industry or dominant in the market.

5. *Neutral pricing strategy* implies setting the price for new products based on the actual cost of their production, including the average rate of return on the market or in the industry.

6. *Differential pricing strategy* manifests itself in setting prices with consideration for all sorts of discounts and increments to the average price level for different markets, their segments, and buyers.

7. *Uniform pricing strategy*. When using the uniform pricing strategy, an enterprise sets the same price for all consumers who would like to purchase a product or service under similar conditions. The price may vary depending on the level of service, quantity of goods purchased or provision of a loan, but it is uniform for all consumers at the same combination of goods and services.

Once an enterprise starts implementing the chosen pricing strategy, it needs to constantly adjust it, taking into account costs, competition, demand, terms of purchase of goods, etc. The price can be adapted by using rectification (discount, increment) and trade-in allowance.

All entrepreneurs who strive for expanding their business should pay special attention to the system of discounts:

- discounts create in a buyer's mind the idea that the selling company makes a concession exclusively for him/her, which, of course, emphasizes the importance of the buyer in his own eyes;

- buyers start perceiving the selling company as a respectable and sustainable organization which can afford some price reduction. The true benefit of the use of discounts is obtained by the selling company, since due to them it increases its sales volume.

There are the following types of discounts:

- discount for cash payment;
- quantity discount, which implies lower prices for purchasing a large batch of goods;
- dealer discount. It is provided by manufacturers to a dealer or intermediary for services related to the promotion of their goods to the end user which otherwise must be performed by the manufacturers themselves;
- special (personal) discount, which is provided to individual buyers the sellers are interested in;
- seasonal discount, which is given to a buyer for the purchase of a non-seasonal product or during the period of seasonal sales;
- bonus discount, which is provided to regular buyers if they buy a pre-determined quantity of goods for a certain period;
- closed discount, which is granted on products created in closed economic formations;
- “hidden” discount, which is the form of additional free services rendered by sellers to buyers.

Under market conditions, a commercial organization which is self-organized into a socially-oriented system operates in a tough competitive environment and enjoys full economic independence.

8.4 Procedure for forming the financial result of the enterprise

The source of information about the financial result of the enterprise is the Profit and loss account.

The financial result of the enterprise includes the following indicators:

- gross income;
- operating income;
- net income;
- gross profit/loss;

- financial result (profit/loss) from operating activities;
- financial result (profit/loss) before tax;
- net financial result (profit/loss).

Gross income is the total amount of income of the enterprise from all activities, including: income from the sale of goods, services, works (operating activities); income from financial activities; income from investment activities.

Operating income is an income received by the enterprise from the sale of goods, services, works.

Net income represents the difference between operating income and value added tax.

Gross profit/loss is the difference between net income and cost of sold goods, services, works, excluding administrative costs, marketing costs and other operating costs.

Financial result (profit/loss) from operating activities includes gross profit/loss, income from other operating activities less administrative costs, marketing costs and other operating costs.

Financial result (profit/loss) before tax includes the financial result from operating activities and the difference between income and expenses from financial activities, investment activities and other activities.

Net financial result (profit/loss) is the difference between the financial result before tax and the tax on profit.

Recommended videos

1. Video “*Product life cycle. 4 stages of product life cycle*”. Chanel “Educationleaves” on the YouTube.

Link: https://www.youtube.com/watch?v=Vp_Ndyq_p2g

2. Video “*Law of Demand and Supply*”. Chanel “Educationleaves” on the YouTube.

Link: <https://www.youtube.com/watch?v=TvCYq3RGsNo>

3. Video “*Sales management*”. Chanel “Educationleaves” on the YouTube.

Link: <https://www.youtube.com/watch?v=6tDfPoEOOoE>

4. Video “*What is marketing research?*”. Chanel “Education leaves” on the YouTube.

Link: <https://www.youtube.com/watch?v=V5kGgU7bVuU>

5. Video “What is demand forecasting?”. Chanel “Education leaves” on the YouTube.

Link: <https://www.youtube.com/watch?v=KgmNg2d8XDk>

6. Video “What is sales forecasting?”. Chanel “Educationleaves” on the YouTube.

Link: <https://www.youtube.com/watch?v=S-mJ5yY5nSg>

7. Video “Break-even analysis”. Chanel “Educationleaves” on the YouTube.

Link: <https://www.youtube.com/watch?v=XZ0riJeipw4>

8. Video “Key financial statements”. Chanel “Deric Business Class” on the YouTube.

Link: <https://www.youtube.com/watch?v=4gIOULBRRyk>

9. Video “What is financial management?”. Chanel “Education leaves” on the YouTube.

Link: https://www.youtube.com/watch?v=WNm_ez1h7Tc

Theoretical questions

1. What is “price”?
2. Describe and compare approaches to the formation of prices for goods, services, works.
3. What is the purpose of the price’s function “accounting”?
4. What is the purpose of the price’s function “redistribution”?
5. What is the purpose of the price’s function “stimulating”?
6. What is the purpose of the price’s function “balancing supply and demand”?
7. How prices are classified by the economic mechanism of price formation?
8. How prices are classified by the type of economic activity?
9. Describe the stages of pricing process at the enterprise.
10. What is “pricing strategy”?
11. Name the types of pricing strategies of enterprises.
12. What does the skimming pricing strategy mean?
13. What does the penetration pricing strategy involve?
14. What does the cost leadership strategy imply?
15. What does the neutral pricing strategy suggest?

16. What is the differential pricing strategy?
17. What does the uniform pricing strategy imply?
18. What is “discount”?
19. Name the main types of discounts.
20. What is “gross income”?
21. What is “net income”?
22. What is “gross profit/loss”?
23. What is “operating profit/loss”?
24. What is “profit/loss before tax”?
25. What is “net profit/loss”?

Test tasks

1. According to the market approach the determining factors in price formation are:

- a) ratio of supply and demand;
- b) production costs;
- c) profit;
- d) value added tax.

2. According to the production (cost) approach the determining factors in price formation are:

- a) ratio of supply and demand;
- b) production costs;
- c) profit;
- d) value added tax.

3. Pricing factors are:

- a) market conditions;
- b) stage of the life cycle of goods, services, works;
- c) state price regulation;
- d) marketing strategy of the enterprise.

4. Sales-oriented pricing goals are:

- a) profit maximization;
- b) income maximization;
- c) price stabilization;

d) increasing market share.

5. *Competition-oriented pricing goals are:*

- a) profit maximization;
- b) income maximization;
- c) price stabilization;
- d) increasing market share.

6. *Profit-oriented pricing goals are:*

- a) profit maximization;
- b) income maximization;
- c) price stabilization;
- d) increasing market share.

7. *Identify the function of prices. “Prices allow to compare different goods that are not comparable in terms of consumer characteristics” – ...*

- a) accounting;
- b) redistribution;
- c) stimulating;
- d) balancing demand and supply.

8. *Identify the function of prices. “Prices contribute to the redistribution of the created products between economic sectors, economic units, regions and population groups” – ...*

- a) accounting;
- b) redistribution;
- c) stimulating;
- d) balancing demand and supply.

9. *Formed under the influence of supply and demand, and the authorities can have only an indirect effect on the level of prices ...*

- a) free prices;
- b) regulated prices;
- c) fixed prices;
- d) all answers are correct.

10. Take place when the government limits the cost and/or profit of the supplier (seller) by establishing appropriate rules and regulations ...

- a) free prices;
- b) regulated prices;
- c) fixed prices;
- d) all answers are correct.

11. Formed on the basis of the normative approach which assumes not only blocking of the prices, but also fixing of the price (costs and profit) which is carried out in branches and/or regions ...

- a) free prices;
- b) regulated prices;
- c) fixed prices;
- d) all answers are correct.

12. Price at which the products of an industrial enterprise are sold and purchased is ...

- a) wholesale price;
- b) retail price;
- c) purchase price;
- d) estimated price.

13. Setting prices which are significantly higher than the production cost is ...

- a) skimming pricing strategy;
- b) penetration pricing strategy;
- c) neutral pricing strategy;
- d) differential pricing strategy.

14. Setting a much lower price for an enterprise's product than that for similar products of competitors is...

- a) skimming pricing strategy;
- b) penetration pricing strategy;
- c) neutral pricing strategy;
- d) differential pricing strategy.

15. Setting the price for new products based on the actual cost of their production, including the average rate of return on the market or in the industry is ...

- a) skimming pricing strategy;
- b) penetration pricing strategy;
- c) neutral pricing strategy;
- d) differential pricing strategy.

16. Setting prices with consideration for all sorts of discounts and increments to the average price level for different markets, their segments, and buyers is ...

- a) skimming pricing strategy;
- b) penetration pricing strategy;
- c) neutral pricing strategy;
- d) differential pricing strategy.

17. Total amount of income of the enterprise from all activities is ...

- a) gross income;
- b) net income;
- c) gross profit/loss;
- d) net profit/loss.

18. Difference between operating income and value added tax is ...

- a) gross income;
- b) net income;
- c) gross profit/loss;
- d) net profit/loss.

19. Difference between net income and cost of sold goods, services, works, excluding administrative costs, marketing costs and other operating costs is ...

- a) gross income;
- b) net income;
- c) gross profit/loss;
- d) net profit/loss.

20. *Difference between the financial result before tax and the tax on profit is ...*

- a) gross income;
- b) net income;
- c) gross profit/loss;
- d) net profit/loss.

Individual practical tasks

X – the second to last number of the individual plan of the student

Y – the last number of the individual plan of the student

Task 1. Calculate the wholesale price, selling price and retail price of the product unit under the following conditions:

- total cost of product unit is $20+X$ UAH;
- profitability of product sales is planned at the level $15+Y\%$;
- product is not excisable good;
- allowance for compliance of product quality with international quality standards is $5+X\%$ of the wholesale price of product unit;
- value added tax (VAT) is established in accordance with current tax legislation;
- trade allowance is $10+Y\%$ of the selling price of product unit.

Evaluation criteria for task 1

P_{un} – 1 point. WP – 1 point. A_q – 1 point. VAT_{un} – 1 point. SP – 1 point. TA_{un} – 1 point. RP – 1 point. *Total 7 points for task 1.*

Task 2. Determine the net financial result of the enterprise under the following conditions: gross income – $18XY0$ thousand UAH; total cost of sold goods, services, works – $9YX2$ thousand UAH; other operating income – $1520+X$ thousand UAH; administrative costs – $910+Y$ thousand UAH; sales (marketing) costs – $430-X$ thousand UAH; other operating costs – $85-Y$ thousand UAH; income from financial activities – $2730+X-Y$ thousand UAH; financial expenses – $1740+Y-X$ thousand UAH; income from investment activities – $3170+X+Y$ thousand UAH; investment expenses – $1960-X-Y$ thousand UAH; other income – $420+X$ thousand UAH; other expenses – $290-Y$ thousand UAH.

Evaluation criteria for task 2

NI – 1 point. GP – 1 point. FROA – 1 point. FR_{bt} – 1 point. NFR – 1 point. *Total 5 points for task 2.*

Methodical guidelines for solving practical tasks

Methodical instructions for completing the task 1:

1. The wholesale price of the product is calculated as follows:

$$WP = TC_{un} + P_{un},$$

where TC_{un} – total cost of product unit, UAH;

P_{un} – profit of the manufacturing enterprise from the sale of a unit of product, UAH:

$$P_{un} = TC_{un} \cdot \frac{PP}{100},$$

where PP – planned profitability of the sale of a unit of product, %.

2. The selling price of a product unit is calculated according to the following formula:

$$SP = WP + A_q + ET_{un} + VAT_{un},$$

where A_q – allowance for compliance of product quality with international quality standards, UAH;

ET_{un} – excise tax per unit of product, UAH;

VAT_{un} – value added tax per unit of product, UAH.

3. The retail price of a product unit is determined as follows:

$$RP = SP + TA_{un},$$

where TA_{un} – trade allowance of product unit, UAH.

Methodical instructions for completing the task 2:

1. Net income from product sales is determined as follows:

$$NI = GI - VAT ,$$

where GI – gross income, thousand UAH.

2. Gross profit/loss is calculated according to the following formula:

$$GP = NI - TC .$$

3. Financial result (profit/loss) from operating activities is calculated by the formula:

$$FR_{OA} = GP + OOI - AC - SC - OOC ,$$

where OOI – other operating income, thousand UAH;
AC – administrative costs, thousand UAH;
SC – sales (marketing) costs, thousand UAH;
OOC – other operating costs, thousand UAH.

4. Financial result (profit/loss) before tax is defined as:

$$FR_{bt} = FR_{OA} + I_{FA} - FE + I_{IA} - IE + OI - OE ,$$

where I_{FA} – income from financial activities, thousand UAH;
FE – financial expenses, thousand UAH;
 I_{IA} – income from investment activities, thousand UAH;
IE – investment expenses, thousand UAH;
OI – other income, thousand UAH;
OE – other expenses, thousand UAH.

5. Net financial result of the enterprise is calculated as follows:

$$NFR = FR_{bt} - CIT,$$

where CIT – corporate income tax, thousand UAH.

Examples of solutions to practical tasks

Example of solution to practical task 1:

Task 1. Calculate the wholesale price, selling price and retail price of the product unit under the following conditions:

- total cost of product unit is 20 UAH;
- profitability of product sales is planned at the level 15%;
- product is not excisable good;
- allowance for compliance of product quality with international quality standards is 5% of the wholesale price of product unit;
- value added tax (VAT) is established in accordance with current tax legislation;
- trade allowance is 10% of the selling price of product unit.

1. The profit of the manufacturing enterprise from the sale of a unit of product is:

$$P_{un} = 20 * 15 / 100 = 3 \text{ UAH}$$

2. The wholesale price of the product is:

$$WP = 20 + 3 = 23 \text{ UAH}$$

3. The allowance for compliance of product quality with international quality standards is:

$$A_q = 23 * 5 / 100 = 1.15 \text{ UAH}$$

4. The value added tax per unit of product is:

$$VAT_{un} = 23 * 20 / 100 = 4.6 \text{ UAH}$$

5. The selling price of a product unit is:

$$SP = 23 + 1.15 + 4.6 = 28.75 \text{ UAH}$$

6. The trade allowance of product unit is:

$$TA_{un} = 28.75 * 10 / 100 = 2.88 \text{ UAH}$$

7. The retail price of a product unit is:

$$RP = 28.75 + 2.88 = 31.63 \text{ UAH}$$

Example of solution to practical task 2:

Task 2. Determine the net financial result of the enterprise under the following conditions: gross income – 18720 thousand UAH; total cost of sold goods, services, works – 9782 thousand UAH; other operating income – 1520 thousand UAH; administrative costs – 910 thousand UAH; sales (marketing) costs – 430 thousand UAH; other operating costs – 85 thousand UAH; income from financial activities – 2730 thousand UAH; financial expenses – 1740 thousand UAH; income from investment activities – 3170 thousand UAH; investment expenses – 1960 thousand UAH; other income – 420 thousand UAH; other expenses – 290 thousand UAH.

1. Net income from product sales is:

$$NI = 18720 - (18720 \cdot 20 / 100) = 14976 \text{ thousand UAH}$$

2. Gross profit/loss is:

$$GP = 14976 - 9782 = 5194 \text{ thousand UAH}$$

3. Financial result (profit/loss) from operating activities is:

$$FR_{OA} = 5194 + 1520 - 910 - 430 - 85 = 5289 \text{ thousand UAH}$$

4. Financial result (profit/loss) before tax is:

$$FR_{bt} = 5289 + 2730 - 1740 + 3170 - 1960 + 420 - 290 = 7619 \text{ thousand UAH}$$

5. Net financial result of the enterprise is:

$$NFR = 7619 - (7619 \cdot 18 / 100) = 6247.58 \text{ thousand UAH}$$

The enterprise received a net profit in the amount of 6247.58 thousand UAH.

SECTION 9

INVESTMENT ACTIVITY OF THE ENTERPRISE

9.1 Essence and types of investments

9.2 Stages of the investment process at the enterprise

9.3 Indicators of the investment project efficiency

9.1 Essence and types of investments

Investments are investing the capital in business and other activities for profit or other effect.

There are types of investments by classification of:

1. the period of capital investment:

1.1 long-term (over 3 years);

1.2 medium-term (1-3 years);

1.3 short-term (up to 1 year).

2. the territorial feature:

2.1 internal (within the country);

2.2 external (investments abroad).

3. the form of ownership of the investor:

3.1 private;

3.2 public;

3.3 foreign;

3.4 mixed.

4. the object of investment:

4.1 *real* – investments in tangible and intangible assets;

4.2 *financial* – purchase of shares for the purpose of partial participation in the management of the enterprise (*direct investments*) or purchase of securities in order to obtain passive income in the form of a part of the company's profits (*portfolio investments*).

5. the level of risk:

5.1 *aggressive investments* – investments that are characterized by a high level of risk, high profitability and low liquidity;

5.2 *moderate investments* – investments that are characterized by a medium level of risk, sufficient profitability and liquidity;

5.3 *conservative investments* – investments that are characterized by a low level of risk, low profitability and high liquidity.

6. *the stages of financing:*

6.1 *net investments (initial investments)* – investments that are made at the start of the project;

6.2 *extensive investments* – investments that are aimed at increasing the production potential of the project;

6.3 *reinvestments* – investment in the project the additional capital received from the implementation of this project in the previous stages of its life cycle;

6.4 *gross investments* – the amount of net investments and reinvestments.

9.2 Stages of the investment process at the enterprise

Investment process is sequence of stages, procedures and actions for the investment activities of the enterprise.

Investment activity is the activity of the enterprise to invest funds and other values in investment projects in order to obtain economic benefits and/or social effect.

The investment process includes 3 stages:

1. *Preliminary stage (investment decision stage)* consists of three phases:

1.1 the objectives of investment are determined at the first phase;

1.2 the direction of investment is determined at the second phase;

1.3 the specific object of investment is determined at the third phase. Also in the third phase of the previous stage an *investment agreement* is prepared and concluded.

2. *The second stage of the investment process is the realization of investments*, that are the concrete actions to implement the investments through different types of contracts (on the transfer of property, performance of works or services, permits and other civil contracts). The second stage is completed by the creation of the object of investment activity.

3. *The third stage (operational)*. During the operational stage investment costs are reimbursed, there is a return on investment, the social effect.

9.3 Indicators of the investment project efficiency

Indicators of economic efficiency of investment projects are:

- Net Present Value;
- Profitability Index;
- Payback Period;
- Internal Return Rate.

Net Present Value (NPV) is: net discounted value of the project; the difference between the discounted expected benefits and the amount of the initial investments and the discounted subsequent investments of the project. The project is effective if the NPV is greater than 0.

Discounting is bringing the value of future payments to their current value.

Compounding is bringing the value of current payments to their future value.

Profitability Index (PI) is the ratio of the amount of discounted economic effects to the amount of investments. The project is effective if the PI is greater than 1.

Payback Period (PP) is an indicator that characterizes the number of years required to recoup investment costs from the net project benefits. The project is the better, the smaller the period of his return. PP usually determined by the graphical method (Fig. 9.1).

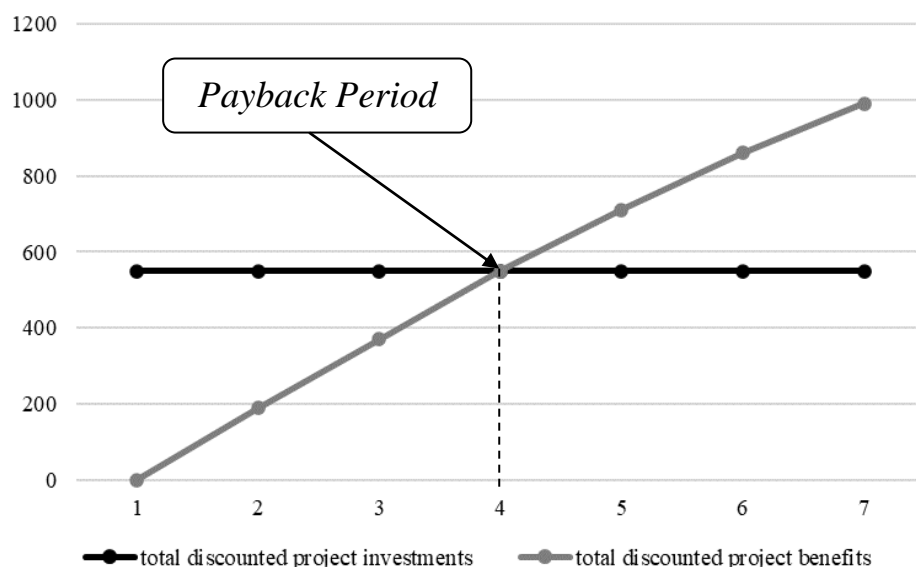


Figure 9.1. Determining the PP of the project by the graphical method

Internal Return Rate (IRR) is the discount rate at which the total discounted benefits are equal to the total discounted costs, that is the NPV of the project is zero. When evaluating several alternative projects, preference is given to the more efficient project with the highest IRR.

The calculation of the IRR is performed by the method of successive approximations of the value of NPV to zero at different discount rates. In modern automated computer systems there are functions for determining the IRR: for example, the option “Parameter selection” in Microsoft Excel and IRR function in OpenOffice.org.Calc.

Recommended videos

1. *Video “Investment environment”*. Chanel “Deric Business Class” on the YouTube.

Link: <https://www.youtube.com/watch?v=vqKAtiGjOk4>

2. *Video “Time value of money: basic concept”*. Chanel “Deric Business Class” on the YouTube.

Link: <https://www.youtube.com/watch?v=guJ3wBoUNMQ>

3. *Video “Project management organizational structures”*. Chanel “Educationleaves” on the YouTube.

Link: <https://www.youtube.com/watch?v=Ocm4kvLx6d4>

Theoretical questions

1. What are “investments”?
2. Describe the types of investments by the period of capital investment.
3. Describe the types of investments by the territorial feature.
4. Describe the types of investments by the form of ownership of the investor.
5. Describe the types of investments by the object of investment.
6. Describe the types of investments by the level of risk.
7. Describe the types of investments by the stages of financing.
8. What is “investment process”?
9. What is “investment activity of the enterprise”?
10. Describe the stages of the investment process at the enterprise.

11. What are the indicators of the investment project efficiency?
12. What is “Net Present Value”?
13. What is “Profitability Index”?
14. What is “Payback Period”?
15. What is “Internal Return Rate”?

Test tasks

1. Investments are ...

- a) all types of assets invested in economic activities for income;
- b) expenditures on the creation, expansion, reconstruction and technical re-equipment of fixed capital, related changes in working capital;
- c) business transactions that involve the acquisition of fixed assets, intangible assets, corporate rights and securities in exchange for funds or property;
- d) set of property and intellectual values invested in projects for profit and/or social effect.

2. By the object of investment the following types of investments are allocated:

- a) real;
- b) financial;
- c) internal;
- d) external.

3. By the period of capital investment the following types of investments are allocated:

- a) direct;
- b) portfolio;
- c) long-term;
- d) short-term.

4. By the form of ownership of the investor the following types of investments are allocated:

- a) private;
- b) public;
- c) foreign;

d) mixed.

5. *By the level of risk the following types of investments are allocated:*

- a) aggressive;
- b) moderate;
- c) conservative;
- d) compromise.

6. *Investments in tangible and intangible assets are ...*

- a) real;
- b) financial;
- c) direct;
- d) portfolio.

7. *Investments in securities are ...*

- a) real;
- b) financial;
- c) direct;
- d) portfolio.

8. *Investments with a term of more than 1 year are ...*

- a) long-term;
- b) medium-term;
- c) short-term;
- d) operative.

9. *Investments with a term of less than 1 year are ...*

- a) long-term;
- b) medium-term;
- c) short-term;
- d) operative.

10. *Investments that are characterized by a high level of risk, high profitability and low liquidity are ...*

- a) aggressive;
- b) moderate;

- c) conservative;
- d) compromise.

11. Investments that are characterized by a medium level of risk, sufficient profitability and liquidity are ...

- a) aggressive;
- b) moderate;
- c) conservative;
- d) compromise.

12. Investments that are characterized by a low level of risk, low profitability and high liquidity are ...

- a) aggressive;
- b) moderate;
- c) conservative;
- d) compromise.

13. Investment in the project the additional capital received from the implementation of this project in the previous stages of its life cycle are...

- a) net investments;
- b) extensive investments;
- c) reinvestments;
- d) gross investments.

14. Investments that are aimed at increasing the production potential of the project are...

- a) net investments;
- b) extensive investments;
- c) reinvestments;
- d) gross investments.

15. Net discounted value of the project is ...

- a) Net Present Value;
- b) Profitability Index;
- c) Payback Period;
- d) Internal Return Rate.

16. *The ratio of the amount of discounted economic effects to the amount of investments is ...*

- a) Net Present Value;
- b) Profitability Index;
- c) Payback Period;
- d) Internal Return Rate.

17. *Indicator that characterizes the number of years required to recoup investment costs from net project benefits is ...*

- a) Net Present Value;
- b) Profitability Index;
- c) Payback Period;
- d) Internal Return Rate.

18. *The discount rate at which the total discounted benefits are equal to the total discounted costs is...*

- a) Net Present Value;
- b) Profitability Index;
- c) Payback Period;
- d) Internal Return Rate.

19. *The investment project should be approved if...*

- a) $NPV > 0$, $PI < 1$;
- b) $NPV < 0$, $PI < 1$;
- c) $NPV > 0$, $PI > 1$;
- d) $NPV < 0$, $PI > 1$.

20. *The investment project should be approved if ...*

- a) $PP \rightarrow \min$, $IRR \rightarrow \min$;
- b) $PP \rightarrow \min$, $IRR \rightarrow \max$;
- c) $PP \rightarrow \max$, $IRR \rightarrow \min$;
- d) $PP \rightarrow \max$, $IRR \rightarrow \max$.

Individual practical task

X – the second to last number of the individual plan of the student

Y – the last number of the individual plan of the student

Task 1. Three enterprises (№ 1, 2, 3) were offered a choice of three investment projects – A, B, C (Tbl 9.1-9.3). Enterprise № 1 is a large enterprise with significant financial resources and aimed at profit maximizing when making an investment decision. Enterprise № 2 is a medium-sized enterprise, its ability to dispose of funds for a long period is somewhat limited, so when making an investment decision, the company is guided by the criterion of profit maximization in the short term (for example, for the first half of the project period). Enterprise № 3 is a small enterprise with a very limited ability to dispose of funds for a long period, so the main criterion for making an investment decision is to make a profit in the maximum short term. Based on the results of the evaluation of the effectiveness of projects A, B, C to substantiate the investment decisions of enterprises № 1, 2, 3 according to the criteria NPV and PI.

Table 9.1

Indicators of project A

Investment costs (1st year), UAH	4XY000
Income by years of project implementation, UAH:	
1st year	0
2nd year	10X000
3rd year	13Y000
4th year	17X000
5th year	18Y000
6th year	25X000
7th year	35Y000
Discount rate, %	10

Table 9.2

Indicators of project B

Investment costs (1st year), UAH	3YX000
Income by years of project implementation, UAH:	
1st year	0
2nd year	19Y000
3rd year	18X000
4th year	15Y000
5th year	7X000
6th year	5Y000
Discount rate, %	10

Table 9.3

Indicators of project C

Investment costs (1st year), UAH	2XY000
Income by years of project implementation, UAH:	
1st year	0
2nd year	17X000
3rd year	15Y000
4th year	8X000
5th year	6Y000
Discount rate, %	10

Evaluation criteria for task 1

DI₁₋₇ for project A – 2 points. ΣDI for project A – 1 point. NPV for project A – 1 point. DI₁₋₆ for project B – 2 points. ΣDI for project B – 1 point. NPV for project B – 1 point. DI₁₋₅ for project C – 2 points. ΣDI for project C – 1 point. NPV for project C – 1 point. PI for project A – 1 point. PI for project B – 1 point. PI for project C – 1 point. Justification of investment decisions of enterprises № 1, 2, 3 – 3 points. *Total 18 points for task 1.*

Methodical guidelines for solving practical task

1. The Net Present Value (NPV) is calculated as follows:

$$NPV = \sum \frac{I}{\left(1 + \frac{r}{100}\right)^t} - \sum IC \cdot \frac{1}{\left(1 + \frac{r}{100}\right)^t},$$

where I – income, UAH;

IC – investment costs, UAH;

r – discount rate, %;

t – calculation period, year.

The project is efficient if the $NPV > 0$. An investment project characterized by a larger NPV is more efficient.

2. The profitability index is the ratio of discounted income and discounted costs for all years of implementation of the investment project:

$$PI = \sum \frac{I}{(1 + \frac{r}{100})^t} \div \sum IC \cdot \frac{1}{(1 + \frac{r}{100})^t}.$$

The project is efficient if the $PI > 1$. An investment project characterized by a larger PI is more efficient.

Example of solution to practical task

Task 1. Three enterprises (№ 1, 2, 3) were offered a choice of three investment projects – A, B, C (Tbl 9.4-9.6). Enterprise № 1 is a large enterprise with significant financial resources and aimed at profit maximizing when making an investment decision. Enterprise № 2 is a medium-sized enterprise, its ability to dispose of funds for a long period is somewhat limited, so when making an investment decision, the company is guided by the criterion of profit maximization in the short term (for example, for the first half of the project period). Enterprise № 3 is a small enterprise with a very limited ability to dispose of funds for a long period, so the main criterion for making an investment decision is to make a profit in the maximum short term. Based on the results of the evaluation of the effectiveness of projects A, B, C to substantiate the investment decisions of enterprises № 1, 2, 3 according to the criteria NPV and PI.

Table 9.4

Indicators of project A

Investment costs (1st year), UAH	428000
Income by years of project implementation, UAH:	
1st year	0
2nd year	102000
3rd year	131000
4th year	175000
5th year	183000
6th year	259000
7th year	358000
Discount rate, %	10

Table 9.5

Indicators of project B

Investment costs (1st year), UAH	315000
Income by years of project implementation, UAH:	
1st year	0
2nd year	194000
3rd year	182000
4th year	151000
5th year	73000
6th year	59000
Discount rate, %	10

Table 9.6

Indicators of project C

Investment costs (1st year), UAH	213000
Income by years of project implementation, UAH:	
1st year	0
2nd year	176000
3rd year	157000
4th year	82000
5th year	63000
Discount rate, %	10

1. Discounted income for the project A is:

$$DI_1=0 \text{ UAH}$$

$$DI_2=102000/(1+10/100)^2=102000/1.21=84297.52 \text{ UAH}$$

$$DI_3=131000/(1+10/100)^3=131000/1.33=98496.24 \text{ UAH}$$

$$DI_4=175000/(1+10/100)^4=175000/1.46=119863.01 \text{ UAH}$$

$$DI_5=183000/(1+10/100)^5=183000/1.61=113664.60 \text{ UAH}$$

$$DI_6=259000/(1+10/100)^6=259000/1.77=146327.68 \text{ UAH}$$

$$DI_7=358000/(1+10/100)^7=358000/1.95=183589.74 \text{ UAH}$$

$$\Sigma DI=84297.52+98496.24+119863.01+113664.6+146327.68+183589.74=746238.79 \text{ UAH}$$

2. Net Present Value for the project A is:

$$NPV=746238.79-428000=318238.79 \text{ UAH}$$

$NPV > 0$, project A is effective.

3. Discounted income for the project B is:

$$DI_1=0 \text{ UAH}$$

$$\begin{aligned}
DI_2 &= 194000 / (1 + 10/100)^2 = 194000 / 1.21 = 160330.58 \text{ UAH} \\
DI_3 &= 182000 / (1 + 10/100)^3 = 182000 / 1.33 = 136842.11 \text{ UAH} \\
DI_4 &= 151000 / (1 + 10/100)^4 = 151000 / 1.46 = 103424.66 \text{ UAH} \\
DI_5 &= 73000 / (1 + 10/100)^5 = 73000 / 1.61 = 45341.62 \text{ UAH} \\
DI_6 &= 59000 / (1 + 10/100)^6 = 59000 / 1.77 = 33333.33 \text{ UAH} \\
\Sigma DI &= 160330.58 + 136842.11 + 103424.66 + 45341.62 + 33333.33 = \\
&= 479272.3 \text{ UAH}
\end{aligned}$$

4. Net Present Value for the project B is:

$$NPV = 479272.3 - 315000 = 164272.3 \text{ UAH}$$

$NPV > 0$, project B is effective.

5. Discounted income for the project C is:

$$DI_1 = 0 \text{ UAH}$$

$$DI_2 = 176000 / (1 + 10/100)^2 = 176000 / 1.21 = 145454.55 \text{ UAH}$$

$$DI_3 = 157000 / (1 + 10/100)^3 = 157000 / 1.33 = 118045.11 \text{ UAH}$$

$$DI_4 = 82000 / (1 + 10/100)^4 = 82000 / 1.46 = 56164.38 \text{ UAH}$$

$$DI_5 = 63000 / (1 + 10/100)^5 = 63000 / 1.61 = 39130.44 \text{ UAH}$$

$$\Sigma DI = 145454.55 + 118045.11 + 56164.38 + 39130.44 = 358794.48 \text{ UAH}$$

6. Net Present Value for the project C is:

$$NPV = 358794.48 - 213000 = 145794.48 \text{ UAH}$$

$NPV > 0$, project C is effective.

7. Profitability index for the project A is:

$$PI = 746238.79 / 428000 = 1.74$$

$PI > 1$, project A is effective.

8. Profitability index for the project B is:

$$PI = 479272.3 / 315000 = 1.52$$

$PI > 1$, project B is effective.

9. Profitability index for the project C is:

$$PI = 358794.48 / 213000 = 1.68$$

$PI > 1$, project C is effective.

10. Let's substantiate the investment decisions of enterprises № 1, 2, 3 according to the criteria NPV and PI.

Project A is the most profitable. At the same time, this project is also the longest and most expensive. Therefore, it is recommended for enterprise № 1.

Let's compare projects B and C according to the criteria of the profit maximization in the short term (for example, for the first half of the project period). Let's choose three years as a calculation period.

Project B

$$DI_{1-3}=160330.58+136842.11=297172.69 \text{ UAH}$$

Project C

$$DI_{1-3}=145454.55+118045.11=263499.66 \text{ UAH}$$

According to the criterion of the profit maximization in the short term (3 years) project B is more efficient. Therefore, it is recommended for enterprise № 2.

The main criterion for making an investment decision by enterprise № 3 is making a profit in the maximum short term. The most short-term project is project C. Therefore, it is recommended for enterprise № 3.

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