\* Задание №1 \* Изучите словарь активной лексики по теме "Современное промышленное оборудование (машины и механизмы)"

1. Активная лексика по теме "Современное промышленное оборудование (машины и механизмы)"

1. branch - отрасль

2. mechanism - механизм

3. kinematic - кинематический

4. dynamic method - динамический метод

5. apply - применять

6. computation - применение , вычисление

7. jointly - совместно

8. strength of materials - сопротивление материалов

9. theory of Elasticity - теория упругости

10. Producing Engineering - технология производства

11. consider - рассматривать

12. productivity - производительность

13. manual labour - физический труд

14. device - механизм, прибор

15. carry out - выполнять

16. power machine - энергетическая машина

17. material working machine - технологическая машина

18. supervisory control machine - контрольно-управляющая машина

19. information machine - информационная машина

20. cybernetic machine - кибернетическая машина

21. conversion - превращение

22. property - свойство

23. location - размещение

24. inherent - присущий

25. animate nature - живая природа

26. automatic transfer line - автоматическая линия

27. automatic-machine device - машина-автомат

28. transmission - transmission

29. working machine - станок

30. machine unit - машинный агрегат

31. accuator - исполнительный механизм

32. converter - преобразователь

33. executive mechanism - исполнительный механизм

34. feeder - питатель, подающий механизм

35. gaseous body - газообразное тело

36. thermal physics - тепловая физика

37. liquid body - жидкое тело

38. deal with - иметь дело с чем-либо

39. geometrical - геометрический

40. interrelation - взаимоотношения

41. acting force - действующая сила

42. structural analyses - структурный анализ

43. dynamic analyses - динамический анализ

44. intend for - предназначаться

45. investigation method - метод исследования

**Classification of Mechanisms and Machines**

***Задание 1. Прочитайте текст. Переведите на русский язык. (1 балл)***

Mechanisms are widely used in all branches of modern technology. The same types of mechanisms having the same computation and design methods are used in machines of various branches.

The term "machine" covers a great number and variety of objects used by a man for labour and physiological functions. The following definition is common: “The machine is a device intended for transformation of energy, materials and information”.

The machines are means of production that use the forces nature of to facilitate work. From the point of view of functions, carried out by machines, it is possible to classify all machines into the following groups:

a)  Power machines;

b)  Material-working machines;

c)  Information (supervisory control) machines;

d)  Cybernetic.

The **power machine** is a machine intended for conversion of energy from one form to another (transforming any kind of energy into mechanical one – the machine-engine, and vice versa – machine-generator).

The **material-working machine** is a machine for conversion of materials. The working machines are subdivided into transport and technological ones.

The**transport machine** is a working machine, in which conversion of materials consists only in changes of their position in space.

The **technological machine** is a working machine, in which the conversion of a material consists in changes of the form, location or properties of a material or machined object.

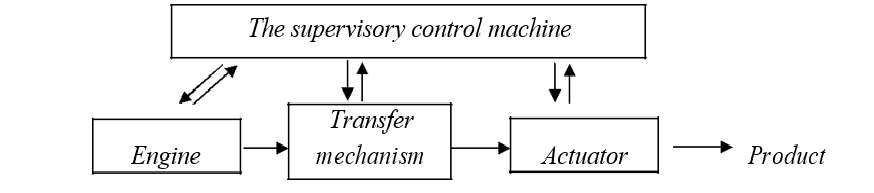
The **information machine** is a machine for conversion of information. These machines are subdivided into **supervisory control machines** and **computing**ones.

 The **cybernetic machine** is a machine replacing or simulating various mechanical, physiological or biological processes, inherent to a man and animate nature.

If the processes of energy or materials conversion are carried out without direct participation of man, the machines performing such operations are named **automatic-machine devices**.

The set of the automatic-machine devices connected with each other and intended for performance of certain technological processes, is called an **automatic transfer line**.

The set of the machine-engine, transmission, working machine and supervisory control machine is called a **machine unit**. It can be represented by the diagram:



**Mechanism**is a system of bodies intended for conversion of motion of one or several bodies into the required motion of other ones. By the functional purpose all mechanisms are subdivided into the following kinds:

1. Mechanisms of engines and converters.
2. Transmissions.
3. Executive mechanisms (actuators).
4. Mechanisms of control and regulation.
5. Feeders, transporters, sorters of machined objects.
6. Mechanisms of the automatic count, weighing and packing.

The mechanisms which are included in the structure of a machine can incorporate firm, liquid, gaseous bodies, electrical and magnetic devices, which work according to the basic principles of mechanics, thermal physics, electrical engineering and electronics.

***Задание 2. Прочитайте и переведите следующие однокоренные слова. (10 баллов)***

1. Act - action - active - activity – interaction
2. Different - difference - differentiate – indifference
3. Locate - located – location
4. Apply – application
5. Engine - engineering – engineer
6. Create - creation - creative – creativity
7. Performance - performing – perform
8. Similar - similarity – similarly
9. Technology - technological - technician – technique
10. Produce - production - productivity – productive

***Задание 3. Соотнесите слова и выражения с их значениями. (10 баллов)***

|  |  |
| --- | --- |
| A | B |
| 1. machine elements | 1. замещать |
| 1. branches of engineering | 1. средства |
| 1. automatic counts | 1. взаимоотношение |
| 1. converter | 1. автоматический приборный механизм |
| 1. transmission | 1. сортировочное устройство |
| 1. replace | 1. детали машин |
| 1. automatic-machine device | 1. отрасли инженерии |
| 1. sorter of machined objects | 1. коробка передач |
| 1. means | 1. автоматический подсчет |
| 1. interrelation | 1. преобразователь |

***Задание 4. Заполните пропуски подходящими по смыслу словами. (8 баллов)***

|  |
| --- |
| **a device energy material a working machine property**  **information an automatic transfer line a machine unit** |

1. The machine is [1] intended for transformation of energy, materials and information.
2. The power machine is a machine intended for conversion of [2] from one form to another.
3. The material-working machine is a machine for conversion of [3].
4. The transport machine is [4], in which conversion of materials consists only in changes of their position in space.
5. The technological machine is a working machine, in which the conversion of a material consists in changes of the form, location or [5] of a material or machined object.
6. The information machine is a machine for conversion of [6]
7. The set of the automatic-machine devices connected with each other and intended for performance of certain technological processes, is called [7]
8. The set of the machine-engine, transmission, working machine and supervisory control machine is called [8]

***Задание 5. Найдите в тексте и выпишите определения следующих слов. (2 балла)***

1. A machine
2. A mechanism

***Задание 6. Ответьте письменно (на английском языке) на следующие вопросы к тексту.***

1. What types of mechanisms are used in machines of various branches?
2. In what groups is it possible to classify all machines?
3. What are all mechanisms subdivided into?
4. What can the mechanisms which are included in the structure of a machine incorporate?

Мах=35 баллов