**Exercise 2**

1. Manufacture system designed to extend the capacity of machines is called automation.

2. Automated manufacture arose out of division of labor, power transfer and the mechanization of the factory.

3. The division of labor is, the reduction of a manufacturing or service process into its smallest independent steps.

4. Another step necessary in the development of automation was mechanization.

5. As a result of the development of power transfer specialized machines were motorized and their production efficiency was improved.

6. The development of power technology also gave rise to the factory system of production.

7. The transfer machine is a device used to move a work pieces from one specialized machine tool to another.

8. Industrial robots were originally designed only to perform simple tasks.

9. The goal of this assembly-line system was to make automobiles available to people who previously could not afford them.

**Exercise 3**

1. False
2.False
3.True. Automated control systems are used to perform various operations much faster or better than could be done by humans.
4. False
5.False
6.True. Mechanization was the next step necessary in the development of automation.

7. True. The development of power technology gave rise to the factory system of production.

8. False
9. True. In the 1920s the auto industry combined automation concepts into an integrated system of production.
10. False

**Exercise 4**

1. Автоматизированная производственная линия состоит из серии рабочих станций, соединенных системой перемещения для перемещения деталей между станциями.
2. Современные автоматизированные линии управляются программируемыми логическими контроллерами.
3. Автоматизированные производственные линии используются во многих отраслях промышленности, особенно в автомобильной.
4. Если деталь производится серийно, автоматическая линия часто является наиболее экономичным способом производства.
5. Линии передачи датируются примерно 1924 годом.
6. Работы по прессу включают резку и формование деталей из листового металла.
7. Автоматизированная система предназначена для выполнения некоторых полезных действий, и это действие требует энергии.

**Exercise 5**

1. Electricity is the most widely used energy source in modern automated systems.
2. Automated systems perform basically two types of operations: 1) processing; 2) moving and positioning.
3. Automation is a production system designed to increase the productivity of machines and mechanisms.
4. Communications, aviation, and space are the industries that make the most extensive use of automation.
5. The division of labor, power transfer and the mechanization of production has accelerated the development process of automation.
6. The next step required in the development of automation was mechanization.
7. The development of energy transfer technology has contributed to the development of automation.
8. Industrial robots were originally designed to perform simple tasks in dangerous environments.