**21. SCIENCE AND TECHNOLOGY**

1. What is the most important thing a man has ever invented? Explain.

2. Which branch of science would you like to work in? Why?

3. Which character and personality traits are needed to become a good scientist?

4. What are the advantages/disadvantages of the Internet? Explain.

5. Should hacking be seriously punished?

6. The idea of flying and space flight has always fascinated mankind. Why?

7.What are the advantages/disadvantages of using robots in industrial production?

8. Can robots replace people in every branch of history?

9. Which 20th-century medical discovery was the most important? Explain.

10.What are the modern appliances used for?

11. Name some important discoveries and inventions in mankind´s history.

**Topic – Science and Technology**

1. Tell us something about some discoveries and inventions of the 15th up to 20th century.

2.Speak about three inventions of science and technology without which you can´t imagine your life and life of your family.

3. Mobile phones are fashion accessories and are not really necessary. Give your opinion.

**Simulation 1.**

Have you ever wondered how a company knows that its shampoo will not burn your eyes? Or that its soap will not give you a rash? These products and many medicines are tested on animals. Each year American researchers use millions of mice, monkeys, rabbits and other animals in scientific tests. These tests help to make sure that products are safe. They also help researchers to find cures for diseases. Should animals be used to test new products? What is your point of view?

**Simulation 2.**

Christmas is coming. Your parents ask you what you want as a Christmas present. You are sure that a new computer is a thing you really need. Your parents are against it. Try to persuade them using all reasonable arguments you can.

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**Mankind** has come **a long way** during its existence. In **pre-historic times**, people´s lives and their needs were simple. Everything needed for life was at hand. People hunted for food, made tools from stones and simple clothes to protect them from the cold. The **only tool** was **the human hand** - it was an excellent tool.

Step by step, people started changing the world. They tried to make their lives easier and more comfortable. They invented **the wheel,** started transporting goods. They learnt how to use **water for energy** and built water mills. Later, windmills were built to use **wind energy.**Important discoveries and inventions came in the **15th and 16th centuries**. It was e.g. the discovery and exploration by Europeans **of new continents,** such as America, Asia, Africa:, the invention of the printing press. There were also developments in the true sciences like **astronomy, philosophy, medicine and biology**. All this resulted in new thinking.

For the **18th and 19th centuries** is typical the **industrial revolution** that completely changed the world. It brought important inventions:**the steam engine** /J.Watt/, **the electriclight bulb** /T.A.Edison/, **the electric motor** /Michael Faraday/, **the first petrol-driven car** /G.Daimler, K. Benz/.Thanks to these inventions, small manufacturing businesses changed into large factories. **Hand-madegoods** were replaced by **machine-made products.** Mass production started. Traditional materials /wool, stone, horns, steel, silver, gold, copper/ were still used. Later new and cheaper materials were introduced, e.g. rubber, glass, paper and plastics.

The development of science and technology went on rapidly and **the 20th century** brought such inventions as**theairplane, the television, the computer, the mobile phone, the Internet** and **the videophone.Research in medicine** brought new drugs and vaccines that prolong people´s lives.New medical equipment, like the lasers used in surgery, is more efficient and shortens the time a person has to spend in hospital after having an operation.**Research in chemistry** brought pesticides and fertilizers that enable us to plant more crops for growing population of Earth.

**Nowadays** science and technology have a deep influence on our lives. They influence **communication**- we can talk to our friends or relatives in any part of the world using phones, satellites or computers. We can take part in online discussions, teleconferences and even do our shopping from home by mail order. These are the advantages of new technologies. The disadvatage is that we spend less time with our families and friends.

New technologies have improved working conditions. Hard work is done by machines- **robots**- and directed by computers. But new technologies bring an increase in the number of unemployed people.

**The food industry** has also been influenced by genetic engineering It is used to produce more and better grains, fruits and vegetables. Some people refuse to buy genetically modified food, because they are afraid of its side effects.

New technologies areeverywhere, even surrounding us at home. Our households are equipped with modern household appliances, such as **refrigarators and freezers, vacuumcleaners, washing machines, dishwashers, microwave ovens, computers, TV sets, stereos and DVD and video players**.All these appliances have made our lives much easier and more comfortable than the lives of our great grandparents.

The word  **ROBOT** first appeared in 1920 in a play by Karel Čapek. In Čapek´s play, robots were metal beings designed to free humans from labour.

**THE INTERNET**  is a series of computer routines enabling one computer to talk to another through telephone lines, modems and servers. You can send messages, browse and copy files to and from any other computer on the network. The Internet is a medium which allows for international communication.

Anyone with a PC and a telephone line could surf on the World Wide Web. You can read journals, articles, news, you can find work, you can write your friends at home or abroad, you can order goods, find accommodation, check airline scheduldes, and even find love. E-mail can be also used in distance learning. You can set up your own website and show yourself to the world.

1. **Name the most important discoveries, inventions, scientific explorations from pre-historic times up to the 16th century.**

In pre-historic times, people lives and their needs were simple every thing what they needed was at hand. They hunted for food, made tools from stones and clothes to protect them form the cold. Step by step people trying to make their lives easier and more comfortable. They invited wheel and started transporting goods. They learnt how to use water and wind for energy. They built mills. In the 15 and 16th century people invited printing press and developed sciences like astronomy, medicine, biology.

1. **Talk about inventions of the industrial revolution and explain how they influenced the life of mankind.**

Industrial revolution completely changed the world. It brought inventions: the electric light bulb, electric motor, petrol-driven car. These inventions changed small manufacturing businesses into large factories and hand-made goods were replaced by machine-made products.

It started that all sorts of goods were cheaper and more available. Wood, stone, steel, silver, copper were replaced by cheaper materials like rubber, glass, plastic.

1. **Give a list of scientific and technologies inventions of the 20th century and explain their pros and cons.**

20th century brought a lot of inventions liker airplane, television, computer, mobile phone, internet. At the beginning 3rd millennium, new inventions had deep influence on our life. E.g. communication=we can talk to other people who are in any part of world by phones on computers. We can do our shopping from home by mail order. But con is that we spend less time with our families and friends because se talk to computer not to people.

Hard work is done by machines, and it is easier for people. But many people because of this fact become unemployed.

Some transactions are easier. We don’t need paper money and coins. Now we use credit cards or phone cards which are comfortable.

Many people don’t like there cards because the think that information can get wrong people and be misused.

1. **Explain how hew technologies are used in medicine.**

New medical discoveries enable doctors repaire the smallest parts of body. This technique is called microsurgery and use microscope is tiny tools. Research in medicine brought new vaccines and drugs which prolong people lives.

1. **What modern appliances are now used in households and how do they make our lives easier?**

In our households are a lot of modern appliances e.g. fridge, freezers, vacuum cleaners, dishwasher, microwave ovens, computers, stereos and DVD…

All these appliances and entertainment equipment make our live easier and comfortable than lives our great grandparents.