Учреждение образования
«Минский инновационный университет»

Факультет — коммуникаций и права
(название факультета)

Кафедра — кафедра юридической психологии
(название кафедры, обеспечивающей преподавание учебной дисциплины)

УТВЕРЖДЕНО
Решение Научно-методического совета
2016 (протокол № 3)

УТВЕРЖДЕНО
Регистрационный № ЭУМК 12 АРМ 138

АНГЛИЙСКИЙ ЯЗЫК ДЛЯ МАГИСТРАНТОВ
(название электронного учебно-методического комплекса)

ЭЛЕКТРОННЫЙ УЧЕБНО-МЕТОДИЧЕСКИЙ КОМПЛЕКС
Специальность (направление специальности) 1-21 80 03 Германские языки, 1-23 80 03 Психология, 1-24 80 01 Юриспруденция, 1-25 80 02 Мировая экономика, 1-25 80 03 Финансы, денежное обращение и кредит, 1-25 80 04 Экономика и управление народным хозяйством, 1-25 80 05 Бухгалтерский учет, статистика, 1-26 80 01 Управление в социальных и экономических системах, 1-40 80 02 Системный анализ, управление и обработка информации (по отраслям)
(код и наименование специальности (направления специальности))

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СОГЛАСОВАНО
Заведующий кафедрой
Komkova E.I. / (инициалы, фамилия) 2016

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1. Read the first part of the text and get ready to speak about the methods of teaching in Kiev-Mogilyan college:

SIMEON OF POLOTSK:
one of the greatest scientists in the field of pedagogy
(1629 – 1680)
(part I)

It is known that Samuel Yemelianovich Petrovskiy-Sitianovich was born in 1629 in Polotsk. In 1656 he became a monk named Simeon of Polotsk. He was a teacher, a writer, a poet and a preacher. His life may be divided into three periods: his service in Bogoyavlenkyskyi Cloister in Polotsk (from 1656 till 1663); his work as a teacher of the tsar’s children in Moscow (from 1664 till 1667) and his enlightening activity after proclamation of Fiodor as a tsar (from 1667 till 1680). Simeon promoted the creation of higher educational establishments in Russia.

He got his education in Kiev-Mogilyan college. He had a great interest in his studies and was one of the best students. He liked his teachers very much and was closely connected with them. At that time the head of the college was Innokenty Gazel who had a great influence on Simeon. Gazel taught philosophy and psychology. He based his lectures on Composition of the Whole Philosophy and The Treatise About Soul. Simeon attended all Gazel’s lectures with great pleasure and considered that the knowledge of psychology he had received in the college helped him in his work with his pupils.

There was a school theatre in the college. It was based on the principle of using games in the process of studying. That school theatre was considered one of the main elements of upbringing. The teachers thought that reclamation developed memory and imagination, public speech helped to master oratory which was necessary for an educated man. Simeon of Polotsk highly appreciated the school theatre and its role in the process of education and upbringing.

Notes:
Bogoyavlenkyskyi Cloister – Богоявленский монастырь;
Kiev-Mogilyan college – Киево-Могилянская коллегия;
Composition of the Whole Philosophy – «Сочинение всей философии»;
The Treatise About Soul – «Трактат о душе».

2. Answer the following questions:
1. What was the real name of Simeon of Polotsk? 2. When and where was he born? 3. Why did he take the name Simeon? 3. What was he? 4. What periods can we divide his life in? 5. Where did he get his education? 6. Was he a bright student? 7. Who had a great influence on him at that time? 8. What did Gazel teach? 9. What did Gazel base his lectures on? 10. What helped Simeon in his work with his pupils? 11. What was there in the college? 12. What principles was the theatre based on? 13. Why did the teachers of this college pay great attention to the theatre?

3. Fill in the table with the events of Simeon of Polotsk’s life:

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
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<tbody>
<tr>
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<td>1667-1680</td>
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</tbody>
</table>

4. Prove that:
- Simeon’s life may be divided into some periods;
- Simeon of Polotsk had a great interest in his studies in Kiev-Mogilyan college.

5. Comment on:
- the influence of Gazel on Simeon of Polotsk;
- the role of the school theatre in the college.

6. Express your own point of view on the necessity of such theatre at modern school.

7. Comprehension check. Choose the best alternative according to the text:
1. Samuel Yemeliavich was born ... .
a) in a very rich family;
b) in 1629 in Polotsk;
c) in a small village near Polotsk in 1628.

2. He took monastic vows ...
   a) and was named Simeon;
b) because his father wanted to marry him off;
c) because he wanted to become a teacher.

3. Simeon of Polotsk got his education in ...
   a) Kiev-Pecherskiy Monastery;
b) Kiev-Mogilyan college;
c) Bogoyavlenskiy Cloister in Polotsk.

4. He was interested in his studies and ...
   a) his answers were always the best at the lessons;
b) studied from the morning till night;
c) was one of the best students.

5. The head of the college ...
   a) taught rhetoric;
b) never punished his students;
c) had a great influence on Simeon.

6. Simeon underlined that knowledge in ...
   a) psychology he received at the college was very useful;
b) psychology he received at the college was of no very use;
c) psychiatry he received at the college was very useful.

7. The school theatre ...
   a) introduced the elements of game in the process of studying;
b) was of no importance for the students of the college;
c) was organized by the students of the college.

8. One of the main elements of upbringing at the college was ...
   a) punishment because of misbehavior of all the pupils;
b) the school theatre;
c) a sincere talk with students.

8. Analyze the methods of teaching in Kiev-Mogilyan college and give your pros and cons.
UNIT II

1. Read the text and get ready to speak about the main point of Simeon’s theory:

SIMEON OF POLOTSK:  
one of the greatest scientists in the field of pedagogy 
(1629 – 1680)  
(part II)

When Simeon of Polotsk studied at the Jesuit’s Academy in Vilno (1650–1654) he wrote one of the first plays in the Polish language. He never missed a chance to use the school theatre in his teaching activities. In Polotsk he staged his short play *The Herdsmen’s Talks*. He always tried to involve all his pupils, including the tsar’s children, in his performances. At that time Simeon wrote many plays. He wanted his plays to be “lessons” not only for children but for their parents as well. No wonder, the characters of his plays were young people.

He arrived to Moscow in 1663 when he was 33. He was a very talented teacher and everyone admitted it. At first, in 1664, Simeon began to teach some pupils using the text book of Latin grammar written by the Jesuit Alvaretza from Portugal. In 1665 he worked in one of the first Greek-Latin schools in Moscow. He didn’t know Greek well, but he knew Latin perfectly well, that’s why he taught the Latin language, grammar, logic, philosophy, rhetoric. In 1887 Simeon was invited as a teacher to the tsar’s son Alexey and then Feodor became his pupil. Later on Simeon supervised the studies of the tsar’s Sophia and brother Peter (his main teacher was Nikita Zonov). Simeon was an experiences teacher that’s why Alexey knew the Latin language very well and Feodor was good at writing poems.

Simeon of Polotsk also wrote some text books and books for reading. In 1679 he wrote *The Bukvar (The Alphabet)* for the seventh birthday of Peter Alexeyevich. The first lines of *The Bukvar*, which were in the form of a verse, he addressed to young people who wanted to study. That verse was a real hymn to reading. Simeon considered a book as a mirror of the soul.

In 1678 Simeon opened a printing-house which was called Verkhny Moscow’s printing-house. He employed a lot of talented people such as
the artist Simon Ushakhov, the engraver Afanasiy Turkhamenskiy, the writer Silvester Medvedev and others. He published *The Multicoloured Vertograd* and *Sincere Supper*.

Simeon paid a great attention to home education and upbringing. He didn’t agree with the Jesuits’ principle that pupils were parted from their parents and were deprived of their influence. It is common knowledge that Simeon of Polots approved of physical punishment. He considered “a stick to be an important means of upbringing”.

Simeon of Polotsk died in 1680.

Notes:

- Jesuit’s Academy – Иезуитская Академия;
- The Herdsmen’s Talks – «Беседы пастушеские»;
- a punishment – наказание;
- an engraver – гравер;
- The Multicoloured Vertograd – «Ветроград многоцветный»;
- Sincere Supper – «Вечеря душевная».

2. **Answer the following questions:**


3. **Fill in the table with the events of Simeon of Polotsk’s life:**

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>1650-1654</td>
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<td>1665</td>
<td></td>
</tr>
<tr>
<td>1667</td>
<td></td>
</tr>
</tbody>
</table>
4. Prove that:
   – Simeon never missed a chance to use the school theatre in his teaching activity;
   – Simeon of Polotsk was against the Jesuits’ principles of upbringing.

5. Comment on:
   – the books written by Simeon of Polotsk;
   – Simeon’s work with tsar’s children.

6. Express your own point of view on Simeon’s utterance: “a stick to be an important means of upbringing”.

7. Comprehension check. Choose the best alternative according to the text:
   1. When Simeon studied at the Jesuit’s Academy in Vilno he wrote ...
      a) his first verse in the Latin language;
      b) one of his first plays in the Polish language;
      c) one of his first poems in the Polish language.
   2. During his teaching activity Simeon ...
      a) read a lot of books in Latin and Greek;
      b) wrote many plays;
      c) wrote and staged short plays.
   3. The main characters of Simeon’s plays were ...
      a) his close friends;
      b) young people;
      c) children and their parents.
   4. In Moscow Simeon ...
      a) began to teach some pupils;
      b) began to read lectures in the university;
      c) entered the university.
   5. It was noted by the historians that Simeon ...
      a) knew many foreign languages;
      b) didn’t know Greek well;
c) was not good at languages.

6. As Simeon was a good teacher he was ...
   a) invited to educate the tsar’s children;
   b) awarded the gold medal;
   c) sent abroad to study.

7. When Simeon worked as a teacher of the tsar’s children he wrote
   a) his first book of verse;
   b) his first historical novel;
   c) some textbooks and books for reading.

8. When Simeon opened his printing house he ...
   a) invited many talented people to work at it;
   b) began to illustrate his own books;
   c) began to publish only his own books.

9. Simeon of Polotsk paid a great attention to ...
   a) the problems of inclusive education;
   b) home education and upbringing;
   c) higher education.

10. He considered that punishment ...
    a) hampered the process of upbringing;
    b) an out-dated method of upbringing;
    c) was useful in the process of upbringing.

8. Read the dialogue “Simeon of Polotsk’ Contribution to Science” and then role-play it with your partner on analogy:

   Simeon of Polotsk’ Contribution to Science
   
   A. I’d like to know if the information given in the text about Simeon of Polotsk is new for you?
   
   B. I think, yes. I have heard about him but frankly speaking I know only him by name.
   
   A. So do I. But I think that his contribution to science is great.
   
   B. Of course I can agree with you on this point. But I don’t like that Simeon of Polotsk was for physical punishment at school.
   
   A. Right you are. I also don’t like this. His method can’t be used nowadays. His theatre at school was very interesting. As far as I know this method is not used in modern school.
   
   B. It is an arguing question. I don’t know our school system perfectly well because I am not a specialist in this branch. But it is useful for us to
know the opinion of different scientists whose work was closely connected with the problems of upbringing.

A. For sure. It is very pity that we have not enough information about our Belarusian scientists to analyze it. The aspect of upbringing is very important for every educated man.

B. It is a good chance for us to go to the library to have some new knowledge about our Belarusian scientists.

A. Right you are. See you soon in the library.

9. Answer the questions:

10. Express your opinion about Simeon of Polotsk’s contribution to science.

11. Analyze Simeon of Polotsk’s pedagogical methods of upbringing and give your cons and pros.

UNIT III

1. Read the first part of text about Ignacy Dameyka and get ready to speak about his the contribution to science:

IGNACY DAMEYKA: OUR FAMOUS COUNTRYMAN
(1802 – 1889)
(part I)

It is a well-known fact that in the 19th century a lot of outstanding people of Belarus had to leave their native land. As known from the historical investigations it was because of the political situation in the country. One of them was Ignacy Dameyka, who was a member of the philomat’s secret society and a participant of the revolt of 1830. This son of Belarusian land made a great contribution to different branches of human knowledge: mineralogy, physics, chemistry, metallurgy, geography, bot-
any, geology, pedagogics, ethnography and zoology. Adam Maltis wrote about him: “Take a map and look at Chile. By the Pacific Ocean there is Dameyka town. In the north there is a mountain-range named after Dameyka. Geologists can name Dameyka’s mineral, botanists – Dameyka’s violet, zoologists – Dameyka’s small fish”. Rich deposits of silver and cooper discovered by Dameyka are known to every scientist working in this field. Speaking of Dameyka we shouldn’t forget that he wrote 130 scientific works which were translated into French, Russian, German, English and other languages. It’s a pity but they were not translated into Belarusian.

UNESCO announced 2002 the year of Ignacy Dameyka.

It is fact that Ignacy Dameyka was born in 1802 in Medvedka village not far from Mir (now it is Korelichsky region). In 1816 graduated from Schuchin College he entered the University of Vilno. Here he made friends with Yan Chechot, Tomash Zanam and Adam Mitskevich. Adam Mitskevich was his best friend. In his poem “Dzyady” A. Mitskevich depicted his friend Ignacy Dameyka in the image of Zhegota. The members of the philamat’s secret society commemorated Medvedka (which they visited very often) in their poem “Pan Tadeush”. It was Ignacy Dameyka who introduced his sister Mariya Vereshchaka to Adam Mitskevich. The poet fell in love with her. Mariya became his muse and unhappy love.

We must face the fact that they took an active part in the revolt of 1830 but when it was put down Adam Mitskevich and Ignacy Dameyka had to go to Paris.

Notes:

revolt – восстание;
philamat – филамат (тот, кто стремится к знаниям);
the Pacific Ocean – Тихий океан;
a mountain-range – горный хребет;
a violet – фиалка;
deposits – залежи;
wild tribes – дикие племена;
to commemorate – увековечить;
Schuchin College – Щучинская колледжия;
“Dzyady” – “Дзяды” (пoэма Адама Мицкевича);
Pan Tadeush – Пан Тадеуш (эпопея филоматов);
2. **Answer the following questions:**

1. Why had a lot of outstanding people of Belarus to leave their native land? 2. Who was among them? 3. What society was he in? 4. What is known about Dameyka’s contribution to different branches of human knowledge? 5. How many scientific works were written by Dameyka? 6. What languages were they translated? 7. Were they translated into Belarusian? 8. What year was announced by UNESCO the year of Ignacy Dameyka? 9. When Ignacy Dameyka was born? 10. Where was he born? 11. Did he enter Belarusian State University? 12. Who were his friends? 13. What did A. Mitskevich write to commemorate Dameyka? 14. What place was commemorated by the members of philamat’s secret society and why? 15. Who took an active part in the revolt of 1830? 16. Why did A. Mitskevich and Ignacy Dameyka go to Paris?

3. **Fill in the table with the events of Ignacy Dameyka’s life:**

<table>
<thead>
<tr>
<th>19th century</th>
<th></th>
</tr>
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<tbody>
<tr>
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<td>1830</td>
<td></td>
</tr>
<tr>
<td>2002</td>
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</tbody>
</table>

4. **Prove that:**

– Dameyka was a great friend of Adam Mitskevich;
– Dameyka’s friends commemorated him in their works.

5. **Comment on:**

– political situation in the 19th century in Belarus;
– Dameyka’s youth.

6. **Express your own point of view on the fact that Dameyka’s scientific works were not translated into Belarusian.**

7. **Comprehension check. Choose the best alternative according to the text:**

1. *In the 19th century a lot of outstanding people of Belarus ... .*
   a) struggled against the Polish invaders;
   b) had to immigrate on political ground;
c) were members of the philamat’s secret society.

2. Ignacy Dameyka was ...
   a) a very rich and remarkable man;
   b) a member of the philamat’s secret society;
   c) a participant of the Great October Socialist Revolution.

3. This son of Belarusian land ...
   a) contributed much to literature, methodology and pedagogics;
   b) contributed much to different branches of human knowledge;
   c) went abroad to struggle for independence of Chilean people.

4. Adam Maltis wrote about ...
   a) places and things named after Dameyka;
   b) Dameyka’s contribution to the governmental system of Chile;
   c) Dameyka’s contribution to different branches of science.

5. The books written by Ignacy Dameyka ...
   a) were published only in Chile;
   b) were of great scientific value for Belarusian people;
   c) were translated into many languages except Belarus.

6. Ignacy Dameyka’s friends ...
   a) never visited his native village;
   b) often visited his native village;
   c) visited his native village only once.

7. When Ignacy Dameyka studied at the University of Vilno he ...
   a) made friends with many famous people;
   b) was a slow student and missed a lot of lectures;
   c) fell in love but his beloved betrayed him.

8. Adam Mitskevich, Dameyka’s best friend ...
   a) took him as a prototype in one of the poems;
   b) helped him to organize his expeditions;
   c) introduced him to his parents.

9. Marylya Vereshchaka was Dameyka’s sister and ...
   a) his best friend;
   b) Adam Mitskevich’s wife;
   c) Adam Mitskevich’s muse and unhappy love.

10. Adam Mitskevich and Ignacy Dameyka went to Paris because ...
    a) they wanted to study;
    b) the revolt had been suppressed;
    c) they were asked to leave the country.
UNIT IV

1. Read the second part of text about Ignacy Dameyka and get ready to speak about his work abroad:

IGNACY DAMEYKA: OUR FAMOUS COUNTRYMAN
(1802 – 1889)
(part II)

When finished Gon’s school in 1836 Ignacy Domeyka was invited to Chile to teach chemistry and mineralogy in Kikimba. Later on he became a professor at the University of Chile and in 1863-1883 he was appointed the rector of the University. Dameyka was the first to organize expeditions to the Andes, Chile-Argentina Andes, Atakama desert and Arakanie (it is common knowledge that the wild tribes of Indians lived here). He described his experiences in his book “Arakania and Its Inhabitants”.

While travelling Dameyka visited some mines and was indignant with unbearable conditions of miners’ work. They took out the ore they gained on their backs moving along the narrow vertical corridors. Dameyka sent a letter to the government with the demands to improve the working conditions of the miners. The government took into consideration his opinion and the working conditions were improved.

The government of Chile asked Dameyka to work out the school reform. Due to his efforts education in Chile became more democratic and accessible.

Ignacy Domeyka was the founder of mineralogy in Chile. He introduced the metric system of measuring, wrote a textbook on physics and mineralogy, and opened a local museum of ethnography. He had lived in Chile for 46 years. He missed his Motherland greatly and only in 1884 Domeyka had a chance to visit his native land.

Ignacy Domeyka died in 1889 in Santiago.

Dameyka was declared a national hero by the government of Chile. They also instituted a medal in his honour. In Santiago you can see Domeyka’s museum. One of the libraries in Buenos-Aires was named
after him. There is a memorial board with his name on one of the walls of Vilnius University. There are expositions devoted to Ignacy Dameyka at school museums in Korelichsky and Lidsky regions. And a new museum has been opened in Zapoliye village in Lidsky region recently. Belarusian people are proud of their famous countryman.

Notes:
Gon’s school – Гонная школа (во Франции);
Kikimba – Кикимба (город в Чили);
Atakama desert – пустыня Атакама (в Чили);
“Araukania and Its Inhabitants” – “Араукиания и ее жители” (книга Игнатия Дамейки);
a miner – шахтер;
ore – руда;
to miss – скучать;
to institute – (зд.)утвердить.

2. Answer the following questions:

3. Fill in the table with the events of Ignacy Dameyka’s life:

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
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<tbody>
<tr>
<td>1836</td>
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<td>1884</td>
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<tr>
<td>1889</td>
<td></td>
</tr>
</tbody>
</table>

4. Prove that:
– Ignacy Dameyka was a highly educated man;
- Dameyka is greatly respected in many countries.

5. Comment on:
- Dameyka’s life abroad;
- his reaction to the working conditions in mines.

6. Express your own point of view to the personality of Ignacy Dameyka.

7. Comprehension check. Choose the best alternative according to the text:

1. Having finished his education in France Ignacy Dameyka ... .
   a) was invited to Chile to teach chemistry and mineralogy in Kikimba;
   b) decided to visit Chile because it was an exotic country;
   c) went to Chile because he had a friend in Kikimba.

2. In Chile Dameyka ... .
   a) taught chemistry and physics at school;
   b) struggled for independence of Belarusian people;
   c) became a professor at the University of Chile.

3. When he worked at the university Ignacy Dameyka ... .
   a) travelled a lot and wrote books;
   b) organized the philamat’s secret society;
   c) opened some new faculties there.

4. While travelling Ignacy Dameyka ... .
   a) met a wild tribe of Indians and helped them to improve their living;
   b) discovered rich deposits of silver, gold and some rare minerals;
   c) paid attention to bad conditions of miners’ work.

5. Dameyka sent a letter to the government of Chile and ... .
   a) he was dismissed from the university;
   b) his point of view was taken into consideration;
   c) he was imprisoned for 5 years and then deported from the country.

6. The government of Chile asked Dameyka ... .
   a) to improve the sphere of education;
   b) to leave their country for ever;
   c) not to interfere in their life.

7. Ignacy Dameyka had lived in Chile for 16 years ... .
   a) and was very happy there;
   b) because he didn’t want to return to Belarus;
c) but he suffered from nostalgia.

8. Only in 1884 Dameyka ... .
a) wrote his last book;
b) left Chile forever;
c) had a chance to visit his native land.

9. Dameyka was declared ... .
a) a hero of the revolt by the government of Belarus;
b) a national hero by the government of Chile;
c) a national hero by the government of Belarus.

10. The government of Chile instituted ... .
a) a medal for Dameyka’s contribution to science;
b) a holiday in Dameyka’s honour.
c) a medal in Dameyka’s honour.

11. There is a memorial board with his name ... .
a) on the wall of Belarusian State University in Minsk;
b) on one of the walls of Vilnius University;
c) on the house where he was born.

12. There are expositions devoted to Ignacy Dameyka ... .
a) at school museums in Korelichsky and Lidsky regions;
b) at the private museum in Zapoliye village;
c) at his native house.

8. Analyze Dameyka’s scientific activity.

9. Answer the questions:
1. Do you think that science is very important in our life? 2. What problems are scientists faced with? 3. What problems do scientists direct their attention to? 4. Are these problems called for industrial needs? 5. Is the role of a scientist great from this point of view?

10. Discuss with your partner the topic: “The leading role of a scientist in the world”.

Belarusian science was actually started in 1922 as the Institute of Belarusian Culture was set up. At present the National Academy of Sciences of Belarus (NASB) is in charge of organizing, conducting and coordinating the fundamental and applied scientific research and development. The Academy of Sciences was founded in 1929 and incorporated the Institutes of Philosophy, Economics, History, Constitution and Law, Linguistics, Literature and Art, Chemistry, Biological Sciences, Agricultural, Physico-Engineering Institutes and others. It was awarded the status “National” in 1997, and now comprises 94 Full Members (Academicians), 130 Corresponding Members, 3 Honorary and 16 Foreign Members of the NASB. The NASB comprises over 130 organizations and enterprises including 70 research institutes, divisions and centers. It employs 17 thousand people.

In 2002, the Academy of Sciences comprised Departments of Physics, Mathematics and Informatics; Department of Physical and Engineering Sciences; Department of Chemical Sciences and Earth Sciences; Department of Biological Sciences; Department of Medical and Biological Sciences, Department of Agrarian Sciences; Department of Humanitarian Sciences and Arts, It is planned to establish the Department of Economics and Management.

The Academy of Sciences is headed by the NASB President who is the member of the Council of Ministers of the Republic of Belarus and is appointed by the President of the Republic of Belarus.

The NASB is in charge of conducting and coordinating research and development in the most important spheres of natural, engineering, humanitarian, social sciences and arts.
Over the last 10 years, nearly 6 thousand patents for inventions, useful models and designs, over 12 thousand trademarks, 1,140 licensing agreements have been registered.

Over the same period the academic degree of Doctor of Sciences was awarded to 652 and that of Candidate of Sciences to 3,333 candidates the title of Professor and Assistant Professor was awarded to 450 and 1,896 scientists and specialists, respectively.

Today science in Belarus has a number of problems. After the breakup of the Soviet Union and disruption of economic and scientific relations some branches of Belarusian industry have been left without any scientific basis. A lack of funds has affected the state of some branches of science. There was also a tendency of brain drain from the science sector which emerged in the 1990s. However, the country's scientific and technical basis hasn’t been destroyed.

Several branches of the scientific and technical sphere can be brought to the level of competitiveness in the world market. This mainly holds true for laser and plasma technologies, chemical synthesis of substances, biotechnologies and information processes – the areas with a high scientific and technical potential. The outstanding scientists in these fields of science are Fyodor Korshunov, Sergei Gaponenko, Ivan Bodnar, Igor Troyanchuk, Victor Borisenko, Vyacheslav Yarmolik, Rauf Sadykhov, Sergei Ablameyko, Nikolai Kazak and others.

2. **Answer the following questions:**

1. What do you know about the history of science in Belarus? 2. When was the Academy of Sciences founded? 3. When was it awarded the status “National”? 4. What departments did the Academy of Sciences comprise of in 2002? 5. Who is at the head of the Academy of Sciences? 6. Do you know his name? 7. What is the function of the Academy of Sciences? 8. What are the main problems of Belarusian science? 9. What is the number of Doctors and Candidates of Sciences in our country? 10. What branches of science are highly developed now? 10. What are the most famous scientists in Belarus?

3. **Fill in the table with the events in science in Belarus:**

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>1922</td>
<td></td>
</tr>
<tr>
<td>1929</td>
<td></td>
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</tbody>
</table>
4. Prove that:
- the NASB is in charge of conducting and coordinating research and development in the most important spheres of natural, engineering, humanitarian, social sciences and arts;
- there are a lot of scientists work in Belarus.

5. Comment on:
- work of the Academy of Sciences in our country;
- problems in Belarusian science.

6. Express your own point of view on a tendency of brain drain from the science sector which emerged in the 1990s.

7. Comprehension check. Choose the best alternative according to the text:
1. Belarusian science was ...
   a) famous all over the world;
   b) actually started in 1922;
   c) in the process of development in 1922.
2. At present the National Academy of Sciences of Belarus is ...
   a) the main scientific center in our country;
   b) a place where every scientist can present his scientific work;
   c) in charge of organizing, conducting and coordinating the fundamental and applied scientific research and development.
3. The Academy of Sciences was ...
   a) founded in 1928;
   b) founded in 1929;
   c) founded in 1927.
4. The Academy of Sciences is headed by ...
   a) the NASB President;
   b) the director of the NASB;
   c) one of the Corresponding Members of NASB.
5. The head of the Academy of Sciences is ...

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a) elected by all Full Members (Academicians);
b) the most famous scientist in our country;
c) appointed by the President of the Republic of Belarus.

6. After the breakup of the Soviet Union.

a) some branches of Belarusian industry have been left without any scientific basis;
b) Belarusian science was in very difficult position;
c) Belarusian science began to develop quickly.

7. One of the problems at that time was.

a) a lack of scientists in the country;
b) a lack of desire to be engaged in science;
c) a lack of funds which has affected the state of some branches of science.

8. There was also a tendency of.

a) small salaries for scientific staff;
b) brain drain from the science sector which emerged in the 1990s;
c) closing scientific centers and institutes.

9. Such areas as have a high scientific and technical potential.

a) laser and plasma technologies, chemical synthesis of substances;
b) Belarusian literature and arts;
c) history, philosophy, sociology.

8. Analyze the level of science in Belarus.

UNIT VI

1. Read the second part of the text and get ready to speak about possibilities to publish the results of scientific investigations:

SCIENCE IN BELARUS
(part II)

Achievements of scientific schools in the sphere of mathematics, theoretical physics, spectroscopy and luminescence, electronics, automation, thermophysics, material science, machine building, geology, bioorganic chemistry, physiology, genetics, selection, soil science, cardiology, surgery, linguistics, etc. are known worldwide and have been highly ap-
praised in Belarus and enjoyed the international recognition. Findings of some researchers have the highest rank of significance and are registered as scientific discoveries.

The NASB Central Scientific Library, Republican Scientific and Technical Library of Belarus, Republican Scientific Medical, Pedagogical and Agricultural libraries, University libraries and others provide Belarusian researchers and specialists with the needed scientific literature. Scientific papers, periodicals, collections, popular-scientific and reference literature relating to an extensive range of science and engineering sectors are published by the specialized NASB Publishing House “Belaruskaya Navuka”, publishing centers of scientific institutes and institutions of higher education. A number of scientific journals, including international, are published in Belarus. Among them, “Computational Methods in Applied Mathematics”, “Doklady of the National Academy of Sciences of Belarus”, “Proceedings of the National Academy of Sciences of Belarus” (7 thematic series), “Journal of Applied Spectroscopy”, “Journal of Engineering Physics and Thermodynamics”, etc. Part of them is published in English or is translated, reissued and distributed all over the world by prestigious scientific publishers “Kluwer Academic/Plenum Publishers” and “Allerton Press”.

2. Answer the following questions:

3. Prove that:
   – there are certain achievements of scientific schools in some spheres;
   – there are a lot of different scientific magazines to publish the results of scientific investigations.

4. Comment on:
   – the international recognition of Belarusian science.
5. Express your own point of view on possibilities to publish your results of investigation abroad.

6. Comprehension check. Choose the best alternative according to the text:
   1. Achievements of Belarusian scientific schools are ...
      a) known only in our country;
      b) widely spread all over the world;
      c) highly appreciated by Russia.
   2. Findings of some researchers ...
      a) can be used in different spheres of life;
      b) were made in the National Academy of Sciences;
      c) are registered as scientific discoveries.
   3. A lot of scientific libraries in Belarus ...
      a) provide researchers and specialists with the needed scientific literature;
      c) were built for young scientists;
      d) have very rare scientific literature.
   4. The specialized NASB Publishing House “Belaruskaya Navuka” ...
      a) is well known center for every educated man in Belarus;
      b) publishes scientific papers of our scientists;
      c) was founded many years ago.
   5. A number of scientific journals, including international, are ...
      a) published in Belarusian language;
      b) published in Belarus;
      c) in open sale in Belarus.
   6. Part of the scientific journals ...
      a) is published in English;
      b) can be brought from England;
      c) can be sent to England.
   7. Some Belarusian scientific journals ...
      a) is difficult to find in regional libraries;
      b) are of great use abroad;
      c) are translated, reissued and distributed all over the world by prestigious scientific publishers.

7. Analyze the level of scientific publications in Belarus.
8. Answer the questions;
1. What are the latest achievements of Belarusian science? 2. Enumerate the problems our science is facing at present. 3. What are the ways to overcome these problems? 4. What problem do you meet with while doing your investigation? 5. Do you have any scientific publications? 6. Where is it possible for you to be published?

9. Discuss with your partner the topic: “Several branches of the scientific and technical sphere can be brought to the level of the competitiveness in the world market”

UNIT VII

1. Read the text and get ready to speak about scientific cooperation of Belarus with other countries:

SCIENTIFIC COOPERATION OF BELARUS WITH OTHER COUNTRIES

It is hard to imagine peaceful coexistence of nations without all-round scientific and engineering cooperation among the states. Besides, there are fields which cannot be developed effectively only on a national scale, such for instance, as environmental protection, space exploration, development of nuclear and solar energy, rational use of the ocean's resources, etc.

The policy of our state with regard to scientific and technological cooperation with other countries rests on respect for sovereignty, equality and mutual advantage. International contacts in science and technology are regarded as a means of speeding up socio-economic progress of all the countries.

An integral part of the national scientific and technical policy of the Republic of Belarus is the international scientific cooperation within the framework of which Belarusian scientists and specialists conduct research and development jointly with foreign counterparts, and establish strong relations with international academic organizations. The international intergovernmental treaties and agreements serve as a legal basis for such cooperation. The Republic of Belarus concluded and executes
over 30 bilateral and more than 10 multilateral (within the CIS) agreements on scientific and engineering cooperation. The collaboration is being intensified with the International Association for Promotion of Cooperation with Scientists from the New Independent States of the Former Soviet Union, International Science and Technology Center (ISTC), International Center for Scientific and Technical Information (ICSTI), Joint Institute of Nuclear Research (JINR), European Center for Nuclear Research, NATO Science Committee, etc. The Belarusian scientists participated in implementation of over 300 research projects through annually held open contests. The UNESCO, IAEA and other organizations’ projects are also being implemented. The scientific and engineering cooperation with CIS countries and Russian Federation within the framework of the Belarus-Russia union state is prioritized.

Bilateral scientific and technical cooperation of Belarus with the Ukraine, Kazakhstan, Armenia, Azerbaijan, Georgia, Moldova is growing. Belarus seeks cooperation with many countries, which is indicative of its multi-vector foreign policy.

Belarus signed the long-term agreements on cooperation in science and engineering with Bulgaria, Great Britain and Northern Ireland, Hungary, Germany, Egypt, India, Iran, Cyprus, China, Poland, Rumania, Slovakia, the USA, Turkey, Japan, the United Arab Emirates.

Belarus is a host as well as a participant of a great number of international conferences and symposia such as ‘Tibo’, ‘Prospective Technologies and Systems’, ‘Alternative Sources of Energy’, ‘Prevention of Natural Disasters’, to name only some of them.

Notes:
Commonwealth of Independent States (CIS) – Содружество независимых государств;
International Atomic Energy Agency (IAEA) – Международное агентство по атомной энергии (МАГАТЭ);
United National Educational Scientific and Cultural Organization (UNESCO) – Организация объединенных наций по вопросам образования, науки и культуры.

2. Answer the following questions:
1. Is it possible to imagine peaceful coexistence of nations without all-round scientific and engineering cooperation among the states? 2. Are there fields which cannot be developed effectively only on a national

3. Fill in the table with the full names of the given abbreviations:

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Name</th>
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<tbody>
<tr>
<td>ISTC</td>
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<tr>
<td>ICSTI</td>
<td></td>
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<tr>
<td>JINR</td>
<td></td>
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<tr>
<td>IAEA</td>
<td></td>
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<tr>
<td>NATO</td>
<td></td>
</tr>
<tr>
<td>UNESCO</td>
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</table>

4. Prove that:
- scientific and engineering cooperation among the states are very important for every country;
- there are a lot of countries take part in the international scientific cooperation with Belarus.

5. Comment on:
- scientific activity of Belarus in the field of cooperation.

6. Give your reasons which of our neighbour states can be regarded as the best partners in scientific cooperation.

7. Comprehension check. Choose the best alternative according to the text:
1. It is hard to imagine peaceful coexistence of nations without...
   a) interchange of their scientific innovations;
   b) all-round cooperation in the field of political information;
c) all-round scientific and engineering cooperation among the states.

2. There are some scientific fields which ...
   a) cannot be developed effectively only on a national scale;
   b) are very important for national economy;
   c) are similar in all the countries.

3. The policy of our state ...
   a) are well known all over the world;
   b) stands for peaceful coexistence with all the countries;
   c) rests on respect for sovereignty, equality and mutual advantage.

4. International contacts in science and technology are ...
   a) very important for our country;
   b) regarded as a means of speeding up socio-economic progress of all the countries;
   c) the source of presenting our investigations to the scientists abroad.

5. An integral part of the national scientific and technical policy is ...
   a) the international scientific cooperation within the framework;
   b) the interchange of scientific investigations;
   c) the joint work in the field of science.

6. Belarusian scientists and specialists ...
   a) establish strong relations with international academic organizations;
   b) present their achievements on different international conferences;
   c) work with great enthusiasm with scientists from other countries.

7. The international intergovernmental treaties and agreements ...
   a) are very important for our country in the field of science;
   b) help all the countries to cooperate in the right way;
   c) serve as a legal basis for such cooperation.

8. The Republic of Belarus concluded and executes ...
   a) only bilateral agreements within CIS;
   b) many bilateral and multilateral agreements on scientific and engineering cooperation;
   c) multilateral agreement with European countries.

9. The Belarusian scientists participated in ...
   a) implementation of different research projects;
   b) all scientific actions in the world;
   c) all sorts of scientific international conferences.

10. The main place within the framework ...
    a) was suggested to some foreign countries;
b) is given to JINR;
c) is given to the Belarus-Russia union state.

11. Belarus seeks cooperation with many countries...
   a) which is very important for scientists of every country;
   b) which is indicative of its multi-vector foreign policy;
   c) and have already found many contacts.

12. Belarus takes an active part in...
   a) a great number of international conferences and symposia;
   b) organization of all sorts of international conferences;
   c) jointed publications with scientists from foreign countries.

8. Analyze how Belarus can contribute to the solution of the problems of environmental protection; medical service and public health; development of supercomputers; industrial automation; creating new kinds of materials, etc. Give the examples of Belarus’ contribution into these areas.

9. Read the dialogue “International Scientific Communication” and then role-play a dialogue with your partner on analogy:

   **International Scientific Communication**

   **A.** You know much attention is being given now to the development of international contacts.

   **B.** Yes, you are right. The idea of conducting researches on an international scale is being widely discussed at different scientific meetings now.

   **A.** Naturally. For scientific research communication is essential and science is to be characterized as public knowledge.

   **B.** In other words the aim of the scientist is to create, to criticize, or contribute to a rational consensus of ideas and information.

   **A.** If you accept this as general notion, you will agree that the results of research only become completely scientific when they are published or presented to public.

   **B.** So, if you are to succeed in with your research you must take part in different scientific meetings, “round tables” talks, conferences, symposia.

   **A.** Quite right, the exchange of ideas is most stimulating.

   **B.** Moreover, you must do it if you don’t want to be isolated.
UNIT VIII

THE IMPORTANCE OF SCIENCE

1. Read the text and get ready to speak about meaning of science in our life:

SCIENCE IN OUR LIFE
(part I)

Science surrounds us. From an early age, we interact with our environment, asking questions and seeking answers. This question-and-answer process lies at the heart of knowing and doing science. It is a way of knowing and thinking about the natural and physical components of the world in which we live.

The importance of science in our daily life may not be obvious, yet we make science-based choices every day. Science is involved when we choose what to eat, or choose products with the least impact on the environment or make informed decisions about our health-care. Science is the foundation of an innovative culture and at the core of significant political decisions.

Let’s talk about science as a learning platform to provide programs and services that develop an understanding of science and the role and impact it has in our lives.

Active, hands-on/minds-on experiences, as well as research and problem-solving opportunities, build an understanding of what it means to know science. Doing science develops our ability to ask questions, collect information, organize and test our ideas, problem-solve and apply what we learn. Even more, science is a platform for building confidence, developing communication skills, and making sense of the world around us.

Science is a part of our daily life: all day, every day, everywhere we go. Our personal life is real world context for learning science and understanding the impact of science on our life. Everyone can become engaged in science by way of linking daily personal experiences to science, regardless of where they live, how they live or what language they speak. Our knowledge of science comes from the contributions of many different cultures and people. Access to science education develops confidence
and positive self-image for all learners, regardless of culture, gender, race, social class or religious beliefs.

Notes:

- hands-on experience – практический опыт;
- an access – доступ.

2. Answer the following questions:

3. Prove that:
   - science surrounds us;
   - science as a learning platform to provide programs.

4. Comment on:
   - the importance of science in our daily life.

5. Give your reasons about the importance of science in your life.

6. Comprehension check. Choose the best alternative according to the text:
   1. From an early age, we interact with our environment, ... .
      a) asking questions and seeking answers;
      b) with the aim to understand it better;
      c) it is natural for everybody.
   2. This question-and-answer process ... .
      a) is typical for every person;
      b) develops us as human beings;
      c) lies at the heart of knowing and doing science.
   3. It is a way of knowing and thinking about ... .
      a) the natural and physical components of the world in which we live;
      b) our future and future of other people of the world;
c) some serious problems which are important for us.
4. *The importance of science in our daily life may not be obvious,* ...
   a) but nevertheless we are interested in it greatly;
   b) yet we make science-based choices every day;
   c) that’s why some people ignore it.
5. *Science is involved when we* ...
   a) make choice of something convenient for us;
   b) choose products with the least impact on the environment;
   c) write articles for scientific magazines.
6. *Science is the foundation of* ...
   a) our personal thinking;
   b) everything around us;
   c) an innovative culture and at the core of significant political decisions.
7. *Active hands-on/minds-on experiences build* ...
   a) an understanding of what it means to know science;
   b) our imagination about different natural phenomenon;
   c) our skills and habits in doing scientific investigation.
8. *Doing science develops our ability* ...
   a) in different aspects of study;
   b) to ask questions, collect information, etc.;
   c) and critical thinking.
9. *Science is a platform for* ...
   a) getting good education;
   b) receiving a scientific degree;
   c) building confidence and making sense of the world around us.
10. *Our personal life is real world context for* ...
    a) being engaged in science;
    b) learning science and understanding the impact of science on our life;
    c) making science-based choices every day.
11. *Everyone can become engaged in science by way of* ...
    a) linking daily personal experiences to science;
    b) reading a lot and doing all sorts of experiments;
    c) working in scientific laboratory.
12. *Our knowledge of science comes from* ...
    a) the contributions of many different cultures and people;
    b) all sorts of scientific literature;
c) our own experience.

13. *Access to science education develops* us in different fields;
   b) our professional abilities;
   c) confidence and positive self-image for all learners.

7. **Analyze what is necessary to do to be a real scientist.**

**UNIT IX**

1. *Read the text and get ready to speak about science integration into all subjects:*

**SCIENCE IN OUR LIFE**

(*part II*)

The world is not fragmented into discrete subjects and science is not isolated from everything else in our lives – it crosses into all subjects. Not only do different types of science interact (such as the concept of light energy, which links biology, chemistry and physics), but science can be found in subjects like history, geography, philosophy and all sorts of subject areas. For example, understanding time periods in history and societies includes learning about scientific innovations and technology used during those periods. Science is even dance and music – it allows us to understand how we hear music, how we move our bodies to dance and how our eyes see art.

Learning opportunities linking science to other subjects provide a rich context for integrating science, technology, mathematics, and language concepts and skills. Integrated programs help learners to understand concepts across different subjects and make connections within a particular subject area. Integration of different sciences can help learners to connect concepts to concepts, topics to topics and explicitly link different disciplines of science.

It is necessary to admit that science develops literacy skills. Language and literacy skills are integral to knowing and doing science. Reading, writing and speaking are all essential to comprehending and communicating scientific issues and ideas. Active hands-on/minds-on science
programs provide valuable context for young scientists to develop literacy skills through reading and writing informational and non-fiction text. But literacy in science is more than just reading and writing: understanding the impact of science in our world provides opportunity to debate issues through written, oral, or visual presentations. This gives people opportunities to read, write, defend and communicate their findings in meaningful ways.

Notes:
- to be fragmented – быть разделенным;
- explicitly – детально, подробно;
- literacy – грамотность.

2. **Answer the following questions:**

3. **Prove that:**
- science crosses into all subjects;
- science develops literacy skills.

4. **Comment on:**
- learning opportunities linking science to other subjects.

5. **Give your reasons on the point of developing literacy skills with the help of science.**

6. **Comprehension check. Choose the best alternative according to the text:**
1. Science is not isolated from everything in our lives, ...
   a) it connected with the most important events;
b) it is impossible to live without science;
c) it crosses into all subjects.

2. Science can be found in ...
   a) all sorts of subject areas;
   b) all spheres of our life;
   c) everywhere around us.

3. Understanding time periods in history and societies includes ...
   a) reading some special literature about these periods;
   b) advanced study of those periods;
   c) learning about scientific innovations and technology used during those periods.

4. Science allows us to understand ...
   a) some unknown things for us;
   b) how we move our bodies to dance and how our eyes see art;
   c) different foreign languages.

5. Integrated programs help learners ...
   a) to study successfully;
   b) to understand concepts across different subjects;
   c) to achieve good results in their investigations.

6. Language and literacy skills are ...
   a) integral to knowing and doing science;
   b) necessary for everybody;
   c) important for every person.

7. Reading, writing and speaking are all essential ...
   a) to understanding some scientific phenomena;
   b) for every educated man;
   c) to comprehending and communicating scientific issues and ideas.

8. Active hands-on/minds-on science programs provide valuable context for young scientists ...
   a) to receive an opportunity to do their investigations abroad;
   b) to develop literacy skills through reading and writing informational and non-fiction text;
   c) to occupy their place in the scientific world.

9. Literacy in science is ...
   a) more than just reading and writing;
   b) important for young scientists;
   c) the main element of our life.

10. Understanding the impact of science in our world provides ...

a) possibility to open something new and important;
b) probability to achieve economic effect for our industry;
c) opportunity to debate issues through written, oral, or visual presentations.

7. Analyze the subject of your investigation.

UNIT X

1. Read the text and get ready to speak about the skills which are necessary to have for a scientist:

   **SCIENCE IN OUR LIFE**
   (part III)

   Numeracy, like language and literacy, is integral to doing science. The skills of sorting and classifying, estimating and counting, measuring, graphing, collecting data and analyzing are frequently used when doing science. Science investigations provide rich context and authentic opportunities to learn and use numeracy skills within the context of science. For instance, understanding and predicting how forces act on a structure involves science, mathematics and design technology through data collection, measurement, presentation and interpretation skills.

   Science also develops general and technical skills. Science is a way of knowing and thinking about the natural and physical world. Observing, measuring, inferring, classifying, predicting and communicating are some of the skills fundamental to science. Not only are they integral to science investigations, solving problems, and making decisions, they contribute to science as a body of knowledge and a ‘way of knowing’.

   Conducting science investigations and explorations involves use of inquiry skills. Inquiry is a circular process: the conclusions can take the learner back to the original question and lead to more questions, involving learners in the process of learning. By formulating their own questions, planning, and conducting investigations, learners build new meanings, understanding and knowledge. This helps to develop their critical thinking, reasoning, and decision-making skills.
Science also requires using technical skills, important to procedures used in various disciplines of science, such as doing a titration in chemistry or using a spring scale in physics. Part of learning these technical skills is developing an understanding of the safety considerations involved when handling materials and equipment and performing experiments.

Notes:

- numeracy – способность к количественному мышлению;
- inquiry skills – исследовательские умения;
- titration – титриметрический анализ;
- spring scale – масштаб для измерения давления пружины.

2. Answer the following questions:

3. Prove that:
- numeracy is integral to doing science;
- science develops general and technical skills.

4. Comment on:
- inquiry skills.

5. Give your reasons on the point of skills necessary for doing science.

6. Comprehension check. Choose the best alternative according to the text:
   1. Numeracy, like language and literacy, is ... .
      a) necessary for every scientist;
b) integral to doing science;
c) important to doing investigation.

2. The skills of sorting, classifying, collecting data, analyzing are... .
a) frequently used when doing science;
b) the most important while doing science;
c) given to a man from his birth.

3. Science investigations provide rich context ... .
a) to use numeracy skills within the context of science;
b) for many fundamental discoveries;
c) to use your knowledge.

4. Science is a way of knowing and thinking about ... .
a) new discoveries;
b) the natural and physical world;
c) effective investigation.

5. Some of the skills fundamental to science are ... .
a) reading, writing, translating;
b) drawing, modeling, designing;
c) measuring, inferring, classifying, predicting and communicating.

6. These skills contribute to science as ... .
a) the general to the particular;
b) the integral part of scientific investigation;
c) a body of knowledge and a ‘way of knowing’.

7. Inquiry is a circular process which ... .
a) is important for investigation;
b) involves learners in the process of learning;
c) is based on inquiry skills.

8. Learners build new meanings, understanding and knowledge by ... .
a) reading a lot of scientific literature;
b) formulating their own questions, planning, and conducting investigations;
c) doing experiments in laboratories.

9. This helps to develop their ... .
a) critical thinking, reasoning, and decision-making skills;
b) skills of sorting and classifying, estimating and counting;
c) numeracy and linguistic skills.

10. Technical skills are important ... .
a) to procedures used in various disciplines of science;
b) in doing measurements and data collection;
c) in the process of counting and analyzing results.

11. The use of technical skills is required while ...
   a) preparing instruments for different experiments;
   b) working in all sorts of laboratories;
   c) doing a titration in chemistry or using a spring scale in physics.

7. Analyze the skills which are necessary to have for your investigation.

8. Answer the following questions and then try to speak about the main tendencies in modern science:
   1. What are the tendencies in the science development at present? 2. What scientific discovery of recent years seems most challenging to you? 3. What important scientific discoveries may we face in the near future? 4. We are apt to believe that research has always been the springboard of progress. But do you think the unusually swift development of science may have any harmful consequences? 5. Do you think there should be “taboo” areas in scientific research as far as morality is concerned? Whatever your answer is, give your reasons. 6. Do you think there can be valid reasons for suspending research into a particular subject even if it has been going on successfully? If so, what might they be? 7. Do you think that scientific work of any kind can itself be a means of developing the moral qualities of the individual concerned?

UNIT XI

RESEARCH IN SCIENCE

1. Read the text and get ready to speak about recent development in the scientific fields:

RECENT DEVELOPMENT IN THE SCIENCE

Recent developments in the fields of communications and information technology are indeed revolutionary in nature. Information and knowledge are expanding in quantity and accessibility. In many fields future decision-makers will be presented with unprecedented new tools
for development. In such fields as agriculture, health, education, human resources and environmental management, or transport and business development, the consequences really could be revolutionary. Communications and information technology have enormous potential, especially for developing countries, and in furthering sustainable development.

There is a consensus that the transition to the 21st century will witness a quantum leap in the development and exploitation of information technologies, with corresponding ramifications for social and economic organization, the environment, culture and the development of a global information infrastructure. The key issues of concern to policy-makers and international organizations are the extent to which this major transformation has benefited all aspects of society and the ways and means of achieving a truly global information infrastructure.

Notes:
- accessibility – доступность;
- a quantum leap – резкое увеличение;
- a ramification – ответвление;
- an extent – пространство.

2. Answer the following questions:
1. What is revolutionary in nature? 2. In what way are information and knowledge expanding? 3. Who will be presented with unprecedented new tools for development? 4. In what fields could the consequences be really revolutionary? 5. What have enormous potential, especially for developing countries? 6. What will witness the transition to the 21st century? 7. Where is it planned the corresponding ramifications? 8. What are the key issues of concern to policy-makers and international organizations?

3. Prove that:
– information and knowledge are expanding in quantity and accessibility.

4. Comment on:
– the ways to achieve a truly global information infrastructure.

5. Give your reasons on the point of recent development in science.
6. Comprehension check. Choose the best alternative according to the text:

1. Recent developments in the fields of communications and information technology ...
   a) are of great importance for our country;
   b) are indeed revolutionary in nature;
   c) can give a great economic effect for the country.

2. Information and knowledge are ...
   a) of great importance for everybody;
   b) expanding in quantity and accessibility;
   c) playing and important role in everyday life.

3. In many fields future decision-makers will be ...
   a) presented with unprecedented new tools for development;
   b) given all necessary information from Internet;
   c) shown some new methods of investigation.

4. Communications and information technology ...
   a) are introduced to all educational establishments;
   b) occupy the first place in the world;
   c) have enormous potential.

5. The transition to the 21st century will witness ...
   a) a quantum leap in the development and exploitation of information technologies;
   b) great innovations in science;
   c) a lot of new scientific discoveries.

Recent developments in the fields of communications and information technology are indeed revolutionary in nature. Information and knowledge are expanding in quantity and accessibility. In many fields future decision-makers will be presented with unprecedented new tools for development. In such fields as agriculture, health, education, human resources and environmental management, or transport and business development, the consequences really could be revolutionary. Communications and information technology have enormous potential, especially for developing countries, and in furthering sustainable development.

There is a consensus that the transition to the 21st century will witness a quantum leap in the development and exploitation of information tech-
nologies, with corresponding ramifications for social and economic organization, the environment, culture and the development of a global information infrastructure. The key issues of concern to policy-makers and international organizations are the extent to which this major transformation has benefited all aspects of society and the ways and means of achieving a truly global information infrastructure.

с соответствующими последствиями для социальной и экономической организации, окружающей среды, культуры и развития глобальной информационной инфраструктуры.

**UNIT XII**

1. Read the text and get ready to speak about the problems of research work:

**RESEARCH WORK**

(part I)

Higher education is becoming an extremely important element in the organization of modern society. New dimensions of economic and technological competition at the regional and global levels have led to new demands on education in the areas of research. In order to become a top-level specialist one must learn to be a researcher. Research is a process that includes thinking up interesting projects to work on and discovering ways of finding answers to questions. Research is hard work but challenging, interesting, creative and sometimes frustrating.

In fact many people are confused about research. They have fantastic ideas and crazy notions about what research is and who conducts it. When many of us think of research, images of scientists or of chemists in labs or of physicists with gigantic particle accelerators, probably pop into our minds. Is that really so?

Let us suggest that research covers a much wider sphere of activity than you might at first imagine. The term “research” comes from the French word “rechercher”, which means to investigate something thoroughly, to search for information, to try to find out about something that is of interest. Research is also, to the extent possible, objective, carefully
done, and conducted using methods that can be repeated.

Some of the basic questions we ask when we do research are the “who” question, the “why” question, the “how” question, the “what” question, the “when” question, the “which” question, the “where” question and a researcher must be able to figure out how to estimate the weight to be given to “why” and “how” and “when” and “which” elements.

In research there is always a task, there are rules, and there is need for imagination and creativity. Research involves curiosity, accuracy, honesty and ingenuity. Research is a process, an activity that includes thinking up interesting projects to work on and discovering ways of finding answers to questions.

2. Answer the following questions:

3. Prove that:
   - higher education is an important element for those who want to deal with scientific work;
   - research involves curiosity, thinking, creativity, etc.

4. Comment on:
   - on the origin of the term “research”;
   - on the questions you put while doing research.

5. Express your own point of view on the problem of research.

6. Comprehension check. Choose the best alternative according to the text:
   1. Higher education is becoming an extremely important element...
1. In the organization of modern society;
   a) in the life of every man;
   b) if you want to connect your life with science.
2. In order to become a top-level specialist ...
   a) it is necessary to have good education;
   b) one must learn hard at University;
   c) one must learn to be a researcher.
3. Research is a process that includes ...
   a) thinking up interesting projects to work on;
   b) investigation on a very important problem;
   c) work with scientific literature and all sorts of experiments.
4. Research is hard work but ...
   a) well paid afterwards;
   b) challenging, interesting, creative and sometimes frustrating;
   c) attractive from the point of view of one’s development.
5. Many people have fantastic ideas and crazy notions about ...
   a) the process of research and its results;
   b) what research is and who conducts it;
   c) the conducting of research.
6. When many of us think of research we imagine ...
   a) scientists or chemists in labs or physicists with gigantic particle accelerators;
   b) ourselves to be great scientists;
   c) big perspectives in our life.
7. The term “research” means ...
   a) to read a lot of scientific literature;
   b) to have new ideas and to embody them to reality;
   c) to investigate something thoroughly, to try to find out about something that is of interest.
8. Research should be ...
   a) important not only for a researcher but for the state as well;
   b) carefully done and conducted using methods that can be repeated;
   c) done correctly and explained competently.
9. While doing a research we should ...
   a) find answers to some definite questions;
   b) work in good conditions;
   c) consult with other scientists all the time.
10. In research there is always a task, there are rules, and ...

a) a lot of problems which is necessary to solve;  
b) there is need for imagination and creativity;  
c) the presence of a good supervisor.

7. Answer the questions to the topic:
   1. What is your field of research? 2. What are the current issues in your field of research? 3. Have new areas of research appeared in recent years? 4. What is your particular area of research? 5. What are the latest achievements in your field of research? 6. Have many fundamental discoveries been made in your field of research? 7. Can you name some outstanding researchers in your field of research? 8. What contribution have they made? 9. Do achievements in your branch of research influence everyday life? 10. In what way, if are there any? 11. What further developments can you predict in your field of research?

8. Analyze your first steps in science.

UNIT XIII

1. Read the text and get ready to speak about research work:

   **Research Work**  
   (part II)

   When we characterize the main peculiarities of the research we must mention observation first, it's a key factor, and correct observation involves, among other things, knowing what to look for, what to focus attention on, and what to ignore.

   Researches also use concept – ideas that help humans organize and make sense of things. Concepts do several things. They help us to see relationship between and among elements that may have previously escaped us, and they lead us to insights.

   We must be aware of the fact that in conducting research we are concerned with the typicality or atypicality of whatever it is we are studying. Is what we are investigating unique and unusual or is it part of normal, everyday life? At the same time we must interpret our findings correctly and try to derive some kind of conclusion or generalization that is logical.
and reasonable.

When somebody is engaged in any researches he is usually expected to present her/his findings and to discuss the results of the research. The purpose of the research report is to offer a clear and unambiguous statement of what was done, how it was done, and what was found. There is a standard format for research papers; this includes an introduction and sections on methods, findings, and discussion.

2. **Answer the following questions:**

1. What is a key factor in the research?
2. What is concept?
3. How many things do concepts do?
4. What is their function?
5. What is it necessary to understand while doing research?
6. In what way must we interpret our findings?
7. How must we get up our conclusion?
8. What is expected from the results of research?
9. What is the purpose of the research report?
10. Is there a standard format for research papers?

3. **Prove that:**

   – observation is a key factor to characterize a research;
   – it is necessary to interpret all the findings correctly.

4. **Comment on:**

   – functions of concept;
   – necessity of discussion in research.

5. **Express your own point of view on the problem which is discussed in the text.**

6. **Comprehension check. Choose the best alternative according to the text:**

   1. *When we characterize the main peculiarities of the research ...*. 
      a) it is necessary to speak about the economic effect of this research;
      b) we must mention observation first;
      c) we hope to achieve good results.

   2. *Correct observation involves, among other things, ...*. 
      a) many necessary things to do;
      b) special knowledge of scientific literature;
      c) knowing what to look for, what to focus attention on, and what to ignore.
3. Concepts in researches are as follows: ...
   a) definite rules which is necessary to observe;
   b) ideas that help humans organize and make sense of things;
   c) special programs which is desirable to work out.
4. Concepts help us to see relationship ...
   a) between and among elements which lead us to insights;
   b) in all spheres of our research;
   c) between the beginning and the end of our research.
5. We must be aware of the fact that in conducting research ...
   a) it is necessary to be very attentive with the results;
   b) it is obligatory to have consultations with the supervisor;
   c) we are concerned with the typicality or atypicality of whatever it is we are studying.
6. We must interpret our findings correctly and try ...
   a) to derive some kind of conclusion or generalization that is logical and reasonable;
   b) to declare everything at the scientific conferences;
   c) to publish our results in some scientific magazines.
7. When somebody is engaged in any researches ...
   a) he always works very hard in libraries and in laboratories;
   b) he is usually expected to present his findings and to discuss the results of the research;
   c) he wants to achieve necessary results.
8. There is a standard format for research papers: ...
   a) it is necessary to give introduction and your own point of view on the problem;
   b) at first the plan is given, then annotation and key words, and then the main part of the research;
   c) this includes an introduction and sections on methods, findings, and discussion.

7. Answer the questions to the topic:
   1. What is your research problem? 2. What is of special interest in the problem of your research? 3. What is the subject of your research? 4. Why has the interest in this problem increased considerably in recent years? 5. Do you follow/stick to any theory/hypothesis/concept? What is it? 6. What concept is your research based on? 7. How does your research differ from other studies of the same problem? 8. Is there much
8. Analyze the importance of doing research work.

UNIT XIV

1. Read the text and get ready to speak about the necessity of forecasts in science:

FORECASTS IN SCIENCE: ARE THEY WORTH MAKING?

To speculate about the future is one of the most basic qualities of a man. It involves two aspects: one is to forecast what the future development will be and the other is to determine in what approximate period of time it is going to take place. To make such a prognosis means to learn from the past experience and to extrapolate the knowledge into the future. Recently, however, the rate of change has been so great as to make it difficult to learn from experience, at least as far as the time factor is concerned. To take but one example, a prediction of man’s possible landing on the Moon around the turn of the century was made as late as 1961, only 8 years before the actual event! So, to be on the safe side, we had better leave time to take care of ourselves, and concentrate our attention on what the future may be like.

There is yet another problem involved: are we to accept submissively any possible course of events, or are we to work for a future most suited for most people? The choice is to be made, at different levels, by every individual and by every society.

Notes:
a speculation – теория, догадка, умозрительное построение.

2. Answer the following questions:
it difficult to learn from experience? 8. When was made a prediction of
man’s possible landing on the Moon? 9. What is necessary to remember
to be on the safe side? 10. What is another problem involved? 11. What
way is to make the choice?

3. **Prove that:**
- speculation about the future involves two aspects.

4. **Comment on:**
- forecast in science.

5. **Express your own point of view on the problem of forecast in sci-
ence.**

6. **Comprehension check. Choose the best alternative according to the
text:**

1. *One of the most basic qualities of a man is ... .*
   a) to be engaged in science;
   b) to speculate about the future;
   c) to read a lot of scientific literature.

2. *One of the main aspects in speculation is ... .*
   a) to forecast what the future development will be;
   b) to find the core in the research;
   c) to analyze the past experience.

3. *The second main aspect is ... .*
   a) to consult with some specialists in this sphere;
   b) to determine in what approximate period of time it is going to take
place;
   c) to fond and analyze a lot of necessary literature.

4. *To make such a prognosis means ... .*
   a) to have all necessary apparatus for fruitful work;
   b) to report the results of investigation at different conferences;
   c) to learn from the past experience and to extrapolate the knowledge
into the future.

5. *The rate of change has been so great ... .*
   a) as to make it difficult to learn from experience;
   b) that it is impossible to learn from experience;
   c) that it takes a lot of money.
6. ... was made as late as 1961.
   a) a prediction of man’s possible landing on the Mars around the turn of the century;
   b) a prediction of man’s possible flight into space;
   c) a prediction of man’s possible landing on the Moon around the turn of the century.
7. This prediction was made ...
   a) only 8 years before the actual event;
   b) with the help of some scientists from other countries;
   c) by scientists from Russia.
8. The choice for prediction is to be made ...
   a) simultaneously with the development of science;
   b) at different levels, by every individual and by every society
   c) on the state level.

7. Read the dialogue “Forecasts in Science” and then role-play a dialogue with your partner on analogy:

Forecast in Science
A. Do you think these forecasts in science are worth making?
B. Yes, I certainly do.
A. But the question is: what is a period of time over which it is useful to make them.
B. Well, I admit that short-range forecasts for periods up to, say 5 or 10 years ahead, have often proved to be correct.
A. However mistakes are not uncommon either.
B. You are quite right and there is an example. The discovery of the structure of protein was expected to take 10 years to be solved.
A. As far as I know in fact, it took only 5 years.
B. Yet it is certainly not to be concluded from this that things always happen more rapidly than they are expected to.
A. Some took longer than predicted.
B. Moreover, quite a lot of discoveries happen quite unexpectedly. To cite but one example, remember the prediction of a positive electron by Dirac.
A. As for long-range forecasts, they don’t seem to be worth making at all.
B. Well, I am of two minds about them. After all what we try to do is
to foretell a general tendency rather than a particular development.
A. But no doubt, such forecasts may sometimes prove quite wrong.

8. Read, answer and analyze the following questions:
1. What is the usual period of time over which it is useful to make forecasts? 2. Have short-range forecasts always proved to be correct? 3. What is the final point made about discoveries? 4. What is your opinion about long-range forecasts?

9. Speak about the historical background of your research problem:
1. In recent years ... has greatly increased. 2. Over the past few years the interest in the problem has been due to the fact that... . 3. During the last 20 years interest in ... has considerably... . 4. X. was the first to ... the problem of... . 5. The first studies/observations/experiments... . 6. At present, research is concentrated on ... . 7. Many aspects of the problem still remain ... . 9. It is difficult to point out... and ... of the problem.

UNIT XV

POSTGRADUATE EDUCATION

1. Read the text and get ready to speak about academic degrees:

ACADEMIC DEGREES

An academic degree is a title awarded by a college or university for successfully completing a course of study, or for a particular attainment. Earned degrees are bestowed for completion of courses of study; honorary degrees recognize a certain attainment, not necessarily connected with an educational institution.

Degrees of various types and levels are currently conferred by almost 2,500 institutions of higher education in the United States, as well as by the principal universities in foreign countries. During the first two centuries of higher education in the United States (since 1642) few academic degrees were used, but during the last century, and particularly since 1900, they have multiplied along with the expansion of university curricula and specialized fields.
Academic degrees have been in use for about 800 years; the first one recorded was the Doctor of Civil Law conferred by the University of Bologna (Italy) in the middle of the 12th century. This was followed by the Doctor of Canon Law and Doctor of Divinity and, in the 13th century, by doctorates in medicine, grammar, logic, and philosophy. The use of degrees spread from Bologna to the other European Universities. Originally the doctor’s (from Latin doctor, ‘teacher,’ from docere, ‘to teach’) and master’s degrees were used interchangeably, each indicating that the holders were qualified to teach, and the titles of Master, Doctor, and Professor were synonymous. On the other hand, the bachelor’s or baccalaureate degree (from Latin baccalaureus, a bachelor of arts) was used to indicate the entrance upon a course of study preparatory to the doctorate or mastership, and not achievement. Gradually, however, it came to mean successful completion of one level of study preparatory to a higher degree.

The use of academic degrees spread to British Universities from the Continent and was extensively developed, especially at Oxford and Cambridge Universities. It is necessary to mention that Oxford and Cambridge Universities are the most famous and prestigious universities in the world. Students from many countries try to have opportunity to study there because the diplomas are highly qualified everywhere. Even students from our country study in these universities.

Notes:
- an attainment – достижение;
- Doctor of Canon Law – Доктор церковного права;
- Doctor of Divinity – Доктор богословия (высшая ученая степень доктора наук);
- a doctorate – докторская степень;
- a completion – завершение.

2. Answer the following questions:
1. What is an academic degree? 2. What are earned degrees bestowed for? 3. What do honorary degrees recognize? 4. Where was the first degree conferred? 5. How many degrees were used since 1642 in the United States? 6. When have the degrees multiplied along? 7. For how many years academic degrees have been in use? 8. What was the first degree conferred by the University of Bologna (Italy)? 9. When was it conferred? 10. What was this followed by? 11. Where did the use of degrees
spread from to? 12. What is the origin of the word ‘doctor’? 13. Were the doctor’s and master’s degrees used interchangeably? 14. What titles were synonymous at that time? 15. What was the bachelor’s or baccalaureate degree used to? 16. Where were academic degrees widely used? 17. What universities are the most famous and prestigious universities in the world? 18. Why do students from many countries try to have opportunity to study there? 19. Do students from our country study in these universities?

3. Prove that:
– academic degrees were known from the old times.

4. Comment on:
– the bachelor’s or baccalaureate degree.

5. Express your own point of view on the problem of necessity to have academic degrees.

6. Comprehension check. Choose the best alternative according to the text:
1. An academic degree is a title awarded by ... .
   a) the rector of a university at the end of the study;
   b) a college or university for successfully completing a course of study;
   c) Minister of education for every university leaver.
2. Honorary degrees recognize a certain attainment, ... .
   a) in the scientific sphere;
   b) not necessarily connected with an educational institution;
   c) in the sphere of education.
3. Degrees of various types and levels are currently conferred by ... .
   a) institutions of higher education in the United States;
   b) colleges of secondary education in Italy;
   c) universities in England and Germany.
4. During the first two centuries of higher education in the USA ... .
   a) academic degree were not used;
   b) academic degrees were unknown for people;
   c) few academic degrees were used.
5. Particularly since 1900, they have multiplied along ... .

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a) with the expansion of university curricula and specialized fields;  
b) with the expansion of knowledge and desire to study;  
c) because of the expansion of scientific societies.

6. The first academic degree recorded was the Doctor of ... .  
a) Literature conferred by the University of Rome;  
b) Criminal Law conferred by the University of Berlin;  
c) Civil Law conferred by the University of Bologna.

7. This degree was conferred ... .  
a) in the middle of the 12th century;  
b) at the beginning of the 12th century;  
c) at the end of the 13th century.

8. This was followed by the Doctor of ... .  
a) Canon Law and Doctor of Divinity;  
b) Family Law and Doctor of Sociology;  
c) Psychology and Doctor of Philosophy.

9. The use of degrees spread from ... .  
a) the USA to the whole world;  
b) Bologna to the other European Universities;  
c) Bologna to the European and Asian University.

10. Originally the doctor’s and master’s degrees ... .  
a) had the same meaning;  
b) were very difficult to get;  
c) were used interchangeably.

11. The doctor’s and master’s degrees indicated that ... .  
a) the holders’ qualification was very high;  
b) the holders were qualified to teach;  
c) the holders had possibility to have any prestigious work.

12. The bachelor’s or baccalaureate degree was used to indicate ... .  
a) the high level of education;  
b) the entrance upon a course of study preparatory to the doctorate;  
c) the special knowledge of the owner of this degree.

13. The use of academic degrees was extensively developed, ... .  
a) at all British Universities;  
b) especially at Sorbonne University in Paris;  
c) especially at Oxford and Cambridge Universities.

14. Oxford and Cambridge Universities are ... .  
a) well known all over the world;  
b) very difficult to enter;
c) the most famous and prestigious universities in the world.

15. Students from many countries ...
   a) try to have opportunity to study there;
   b) have a lot of opportunities to study there;
   c) can study there if their parents have enough money to pay for them.

18. The diplomas of Oxford and Cambridge Universities are ...
   a) of great value in all the countries;
   b) given only to the best students;
   c) highly qualified everywhere.

19. ... study in these universities.
   a) Only students from very rich families;
   b) Even students from our country;
   c) Everybody who has desire.

7. Choose the right answer:
   Degrees spread in the following way:
   A. 1) British Universities;
      2) University of Bologna;
      3) European Universities.
   B. 1) University of Bologna;
      2) European Universities;
      3) British Universities.
   C. 1) American Universities;
      2) European Universities;
      3) British Universities.

8. Say what information was new for you. Comment on it.

UNIT XVI

1. Read the text and get ready to speak about Bachelor’s and Master’s degrees:

   TYPES OF DEGREES
   (part I)

   Bachelor’s degree
   The bachelor’s degree, usually representing completion of a four-year
course of study on a collegiate level, is the oldest and best-known academic degree, particularly under the designation of Bachelor of Arts. Some varieties of bachelor’s, or baccalaureate degree is currently offered by about 750 institutions, most of which offer a Bachelor of Arts degree. Next in frequency and availability is the Bachelor of Science, of which the most frequent variety is the Bachelor of Science in Education. Other baccalaureate degrees offered by a large number of institutions are Bachelor of Education, Bachelor of Music, Bachelor of Business Administration, Bachelor of Divinity, and Bachelor of Home Economics. Most institutions offer more than one variety of baccalaureates, but about one tenth report use of the Bachelor of Arts only, regardless of the particular curriculum completed.

Currently about 900,000 baccalaureate degrees are awarded annually, about 46 percent to women. It is estimated that more than 12 million degrees have been conferred to date.

Master’s Degree

The earned master’s degree in general represents one year of work beyond the baccalaureate, but in a few institutions or in a few fields it requires two years of graduate work. The most frequently awarded master’s degrees are Master of Arts, Master of Science, Master of Education, Master of Business Administration, Master of Music, and Master of Fine Arts. The Master of Philosophy degree is conferred on those who have completed all requirements for the Doctor of Philosophy degree except the doctoral dissertation. About 45 varieties of Master of Arts and 40 varieties of Master of Science degrees are reported. Currently 317,000 individuals receive the master’s degree annually, about 47 percent of them women. Nearly 3 million master’s degrees were awarded from 1880 to 1972.

Notes:

*a collegiate level* – университетский уровень;
*under designation* – присваиваемый;
*in frequency* – по частотности;
*business administration* – управление бизнесом;
*to estimate* – устанавливать;
*beyond* – помимо.

2. Answer the following questions:
1. What is the bachelor’s degree? 2. Where is it possible to get the
bachelor’s degree? 3. What bachelor’s degrees are offered by different institutions? 4. Do most institutions offer more than one variety of baccalaureates? 5. How many baccalaureate degrees are awarded annually? 6. Do we have such degree in our country? 7. How much time is it necessary to study to earn master’s degree? 8. What are the most frequent master’s degrees awarded? 9. In what case is it possible to get the Master of Philosophy degree? 10. Is it possible for women to get master’s degree? 11. What is annual amount of master’s degrees in the world? 12. How many master’s degrees were awarded from 1880 to 1972?

3. **Prove that:**
   - bachelor’s degree is the oldest and best-known academic degree.

4. **Comment on:**
   - master’s degree.

5. **Answer the following questions:**
   1. Where can you get Master’s degree in our country? 2. How much time is necessary to study to get Master’s degree in our country? 3. What degree are you planning to have? 4. What exams are necessary to pass to enter master’s course in your University? 5. What subjects are taught at master’s course in your Institute? 6. Is it necessary to write any scientific work at the end of master’s course in our country? 7. Are you ready to such work? 8. What does Master’s degree represent?

6. **Comprehension check. Choose the best alternative according to the text:**
   1. *The bachelor’s degree* ...
      a) is necessary for everybody who wants to have a good job;
      b) is known from the old times;
      c) represents completion of a four-year course of study on a collegiate level.
   2. *This degree is* ...
      a) obligatory in our country;
      b) the oldest and best-known academic degree;
      c) one of the prestigious academic degrees.
   3. *Some varieties of bachelor’s, or baccalaureate degree is* ...
      a) represented by the main institutions of the world;
b) possible to get only in Europe;
c) currently offered by a lot of institutions.

4. Most of institutions ....
   a) offer a Bachelor of Arts degree;
b) have no any academic degrees at all;
c) can suggest some varieties of degrees.

5. Next in frequency and availability is the Bachelor of Science, ....
   a) which is the most difficult to obtain;
b) of which the most frequent variety is the Bachelor of Science in Education.
c) which is the most prestigious among other bachelor’s degrees.

6. Most institutions offer ....
a) more than one variety of baccalaureates;
b) very wide choice of baccalaureates;
c) only Bachelor of Business Administration.

7. About one tenth report use of the Bachelor of Arts only ....
a) because it is the most important degree from their point of view;
b) regardless of the particular curriculum completed;
c) because of the pedagogical stuff in this scientific area.

8. The earned master’s degree in general represents ....
a) one year of work beyond the baccalaureate;
b) long work over the scientific investigation;
c) high level of education beyond the baccalaureate.

9. In a few institutions or in a few fields it requires ....
a) to have two years of practical work;
b) special knowledge in the sphere of investigation;
c) two years of graduate work.

10. The Master of Philosophy degree is conferred on those who ....
a) have passed philosophy on the highest mark;
b) have completed all requirements for the Doctor of Philosophy degree;
c) have a lot of publications in different scientific magazines.

11. Many individuals receive the master’s degree annually, ....
a) about 47 percent of them women;
b) they are very proud of this;
c) it is a pity but there no women among them.

7. Read the dialogue “Taking a Course” and answer the questions
Taking a Course

A. Hi. I am Oleg. I am from Belarus. I study at Minsk University of Management. I have graduated from the Law Faculty.

B. Hi, I am Lindy King. Home Country is Australia. And now I am at King’s college, London.

A. Glad to see you Lindy. What course are you taking?

B. I worked as a clinical nurse, then I took a degree in nursing in Australia and then decided to take a post-graduate course at King’s college. I was attracted by the international reputation of the department of Nursing Studies at King’s.

A. It is very interesting. What concerns me, all the time I live in Belarus and now I study again in the University which I have graduated but now I take a post-graduate course. I want to take master’s degree.

B. So, I guess, you want to be a specialist with good knowledge. But you have this knowledge in your University. What this course will give to you?

A. An interesting question. The master’s course is one of the stages of studying process which undertaken after completing the first degree (as I have already said, I have it) which provides the human resource development with fundamental scientific knowledge and research, methodological and managerial skill.

B. As for my department it offers a strong team and methodologies and I am sure this is the right place to undertake my doctoral work.

A. I want to add that after the MA course the qualification of a master is given in accordance with the appropriate scientific direction.

B. It is rather good. But what will be your speciality then?

A. We can get the following speciality: Master of Law.

B. I haven’t heard about this. But the problem is that I am short of time. Good luck for you.

A. Thanks a lot. See you soon.

1. Where is Lindy from? 2. What is Oleg’s home country? 3. What course is Oleg taking? 4. What course is Lindy taking? 5. Why did Lindy decide to take a postgraduate course at King’s college? 6. Why did Oleg take a postgraduate course in his native University? 7. What opportunities Minsk University of Management provide? 8. What will be his speciality? 9. Is it important to have Master’s degree for this young man?
8. Role-play the dialogue given above with your partner on analogy.

9. Express your own point of view on the problem “What is Master’s degree for you?”

UNIT XVII

1. Read the text and get ready to speak about Doctor’s Degree:

TYPES OF DEGREE

(part II)

Doctor’s Degree

The doctor’s degree represents the most advanced earned degree conferred by U.S. institutions, or indeed by those of any country. In the academic sense, a doctor is an individual in any faculty or branch of learning who has attained to the highest degree conferred by a university. Doctor’s degrees in the United States are of two distinct types professional or practitioner’s degrees, and research degrees. The former represent advanced training for the practice of various professions, chiefly in medicine and law. The principal ones are Doctor of Medicine, Doctor of Dental science of Dental Surgery, Doctor of Veterinary Medicine, Doctor of Pharmacy, and Doctor of Jurisprudence. These degrees carry on implication of advanced research.

Quite different in character are the research doctorates representing prolonged periods of advanced study, usually at least three years beyond the baccalaureate, accompanied by a dissertation designed to be a substantial contribution to the advancement of knowledge. The most important of these is the Doctor of Philosophy (Ph. D.), which no longer implies knowledge of philosophy, but which represents advanced research in any major field of knowledge. In the early 1970’s 240 graduate schools offered it. It was first awarded by Yale University in 1861 to three young men. It was modeled on the doctorate conferred by German universities. For more than half a century prior to 1861, young men desiring the most advanced training in scholarship attended the principal German and occasionally other European universities to secure their Ph. Doctor’s.
Second in importance and much more recent as a research degree is the Doctor of Education (Ed. D.) currently offered by 108 institutions. It was first awarded by Harvard in 1920, but was preceded by the equivalent: Doctor of Pedagogy first conferred by New York University in 1891. The only other earned doctorates of the research type currently conferred by 10 or more institutions are the Doctor of the Science of Law and the Doctor of Business Administration.

At present doctorates of the research type are earned by about 28,000 individuals annually, of which about 14 percent are women. Microfilm copies of about two thirds of the dissertations written for these degrees are available at a modest price.

Abstracts of them are published in the monthly issues of Dissertation Magazines.

Notes:

to represent – представлять, означать;
an advancement – улучшение, продвижение;
to secure – сохранить.

2. Answer the following questions:
1. What does the doctor’s degree represent? 2. Is a doctor an individual in any faculty or branch of learning? 3. Is doctor’s degree the highest degree conferred by a university? 4. What are two distinct types of doctor’s degrees in the United States? 5. What does the former represent? 6. What are the principle ones? 7. What do these degrees carry on? 8. What is the character of the research doctorates? 9. What is it accompanied by? 10. What is the most important of these? 11. Does it imply knowledge of philosophy? 12. When did a lot of graduate schools offer this degree? 13. How many young men were awarded this degree and where? 14. Where it was modeled? 15. What it was necessary to do for young men to secure their Ph. Doctor’s? 16. What is the second in importance as a research degree? 17. Where it was awarded and when? 18. What other doctor’s degrees are known? 19. Is it possible to get any copies of these dissertations? 20. Where is it possible to read the abstracts of them?

3. Prove that:
– the doctor’s degree is the highest in the scientific world.

4. Comment on:
the degree of the Doctor of Philosophy (Ph. D.).

5. Express your own point of view on the problem of doctor’s degree in our country.

6. Comprehension check. Choose the best alternative according to the text:
   1. The doctor’s degree represents . . .
      a) the most advanced earned degree conferred by any country;
      b) the highest level of education;
      c) a lot of opportunities for its possessor.
   2. In the academic sense, a doctor is an individual . . .
      a) and the highest degree in science;
      b) in any faculty or branch of learning;
      c) and very rare scientific degree.
   3. This degree is possible to receive . . .
      a) only after supporting dissertation;
      b) after finishing university;
      c) if you have a lot of scientific publications.
   4. Doctor’s degrees in the United States are . . .
      a) necessary for every teacher who works in universities;
      b) of two distinct types;
      c) of great importance for every scientist.
   5. The former represents advanced training for . . .
      a) those who want to prolong his education after university;
      b) talented young people;
      c) the practice of various professions, chiefly in medicine and law.
   6. Doctor’s degree carries on . . .
      a) hard work in the field of science;
      b) some new scientific discoveries;
      c) implication of advanced research.
   7. The research doctorates represents . . .
      a) a short period of study;
      b) prolonged periods of advanced study;
      c) prolonged periods of working with scientific literature.
   8. It is necessary to study at least three years beyond the baccalaureate . . .
      a) to finish doctor’s dissertation;
b) to have a special scientific diploma;
c) to be a real scientist.

9. The Doctor of Philosophy represents ...
   a) great possibilities in any scientific sphere;
   b) the honourable right to have a private scientific laboratory;
   c) advanced research in any major field of knowledge.

10. This degree was first awarded by ...
   a) Oxford University in 1862 to three young men;
   b) Harvard University in 1961 to four talented men;
   c) Yale University in 1861 to three young men.

11. To secure their Ph. Doctor’s young men ...
   a) tried to enter Yale University;
   b) attended the principal German and occasionally other European universities;
   c) passed some entrance examinations to the principal German and occasionally other European universities.

12. A research degree of the Doctor of Education (Ed. D.) ...
   a) is the second in importance and much more recent;
   b) was possible to get at any European university;
   c) was also very prestigious.

13. This degree was ...
   a) first awarded by Harvard in 1920;
   b) well known in the United States;
   c) very difficult to get.

14. A degree of the Doctor of Education was ...
   a) given only for some achievements in the field of pedagogy;
   b) obligatory to every university’s teacher;
   c) preceded by the equivalent: Doctor of Pedagogy.

15. At present doctorates of the research type are ...
   a) given only to those who have 100 scientific publications;
   b) earned by about 28,000 individuals annually;
   c) possible to get to everybody after finishing university.

16. Microfilm copies of about two thirds of the dissertations written are ...
   a) impossible to get;
   b) shown in all scientific libraries;
   c) available at a modest price.

17. Abstracts of these dissertations are ...
a) published in the monthly issues of Dissertation Magazines;
b) very useful for future investigators;
c) the property of their authors.


UNIT XVIII

SCIENTIFIC METHOD

1. Read the text and get ready to speak about the scientific method:

WHAT IS THE SCIENTIFIC METHOD?

The description of the scientific method includes some very important features that should lead to understanding some very basic aspects of all scientific practice.

The scientific method is a disciplined, systematic way of asking and answering questions about the physical world. Though it can be useful to think of the scientific method as a simple series of steps, in fact, there is no single model of the scientific method that can be applied in all situations. Rather, different scientific investigations require different scientific methods. Certain qualities, however, must apply to all applications of the scientific method.

One important quality of a scientific investigation is that it must attempt to answer a question. In other words, an investigation should not attempt to "prove" a point, but should be an attempt to gain knowledge. The importance of posing an accessible problem and formulating testable predictions is very important.

Another quality is that careful, controlled observations must form the basis of information gathering. It means the need for clear critical thinking in assessing the evidence collected from whatever method.

One of the main points of any investigation is the tentative nature of all scientific conclusions that's why all the hypotheses should be tested.

Finally, the results of a scientific investigation must be reproducible: other investigators, using the same process, must be able to observe the same results. If a result is not reproducible, the original conclusions must be questioned.
And of course, every scientific investigation should have some very important practical aspects.

2 Answer the following questions:

3. Prove that:
– the importance of posing an accessible problem and formulating testable predictions is necessary;
– the results of a scientific investigation must be reproducible.

4. Comment on:
– the scientific method;
– the importance of practical aspects of scientific investigation.

5. Express your own point of view on the problem of scientific method.

6. Comprehension check. Choose the best alternative according to the text:
1. The description of the scientific method ...
   a) is possible to find in any scientific literature;
   b) was worked out by scientists in the previous century;
   c) includes some very important features.
2. Knowledge of the scientific method leads to ...
   a) successful results in a scientific investigation;
   b) understanding some very basic aspects of all scientific practice;
   c) receiving some additional scientific practice.
3. The scientific method is ...
   a) a way of thinking in science;
b) a description of practical results in investigation;
c) a disciplined, systematic way of asking and answering questions about the physical world.

4. It can be useful to think of the scientific method as ... .
a) a simple series of steps;
b) the tentative nature of all scientific conclusions;
c) the circular path of scientific investigation.

5. One important quality of a scientific investigation is that ... .
a) it must attempt to answer a question;
b) it must involve young people in science;
c) it is necessary for future development of a society.

6. An investigation should be ... .
a) a desire to be a real scientist;
b) one of the problems which is necessary to solve in science;
c) an attempt to gain knowledge.

7. It is necessary for every scientist ... .
a) to work regularly in scientific libraries;
b) to have clear critical thinking;
c) to buy scientific books.

8. The results of a scientific investigation ... .
a) must be published in different scientific magazines;
b) must be reproducible;
c) must be discussed everywhere.

9. If a result is not reproducible, ... .
a) the original conclusions must be questioned;
b) it is necessary to do everything one more;
c) such work can’t recognized as scientific.

7. Read the dialogue “Scientists and Scientific Discoveries” and then role-play a dialogue with your partner on analogy:

Scientists and Scientific Discoveries

A. Would you like to become a scientist typical in the world today?

B. Why not. He possesses qualities, which are not the worst in the world. He is a good observer, accurate, patient, objective and imaginative. It’s he who does his best to contribute to the development of science.

A. Yes, but the development of science has led to many undesirable
consequences. You know nuclear weapons and so on and so forth.

B. And it’s likely to lead to many more unless the effort is made to control the application of scientific discoveries.

A. And unless the scientist is responsible for his discovery.

B. If however, science could be developed in a new way I would be glad to do science.

A. I think there will be a tendency for scientists to occupy themselves with problems which affect directly the lives of people: education, medicine, ecology, prevention of war and so on.

B. I’d much prefer the new knowledge about the world to be used for the benefit of man, rather than for death and destruction.

8. Speak about your research problem:

1. What is the subject of your current research?
2. What is the purpose of your research?
3. What method do you employ? Why?
4. What are the advantages of the method you use over other methods and techniques?
5. Is this method only now coming into use?
6. Is it new?
7. What does the method consist in? What operations does it include?
8. Do you find the method reliable/precise? Why?
9. How long has your current research been under way?
10. How much time will it take you to complete your research successfully?

UNIT XIX

1. Read the text and get ready to speak about the first steps of the scientific method:

STEPS OF THE SCIENTIFIC METHOD: OBSERVATION
(part I)

The scientific method is generally described as a series of steps. Though we speak of a scientific method, you will find that different sources list slightly different steps. Some list three steps, some four and some five. Fundamentally, however, they incorporate the same concepts and principles, though they all turn out to mean precisely the same thing. In this text, the list is:

- Observations;
Almost all scientific inquiry begins with an observation that piques curiosity or raises a question. The purpose of the question is to narrow the focus of the inquiry, to identify the problem in specific terms. It means that scientific problem solving involves two basic types of reasoning, generally called induction and deduction.

Induction involves gathering together a collection of bits of data observations, experimental results, whatever kinds of information are available and formulating a generalization which reasonably explains all of them. This is analogous to the formation of a hypothesis. You make a set of observations then hypothesize an explanation which accounts for all of the observations.

You can see why forming a hypothesis is sometimes described as forming an “educated guess”. It’s a guess in the sense that you are devising an explanation, but it’s educated because:

a) it must be reasonable (sensible);

b) it either has to be consistent with what we already think we know, or it has to include a very good justification for deciding that what we think we know is wrong.

This is a vital kind of self-policing. One of the most significant strengths of scientific knowledge is the degree to which it is self-correcting, and this is one part of that. No matter how good an idea is, if it violates the centuries worth of hard won knowledge we’ve accumulated, there must be extremely good reason (based on a lot of evidence) to accept the new idea and throw out all of the old ones.

Notes:

to pique – возбуждать;
self-policing – самоконтроль.

2. Answer the following questions:

formation of a hypothesis? 9. Why is it necessary to do a set of explanations? 10. How can you explain the utterance an “educated guess”? 11. What are the peculiar features of an “educated guess”? 12. What is one of the most significant strengths of scientific knowledge?

3. Prove that:
   – there are some steps in the scientific method.

4. Comment on:
   – an observation;
   – induction.

5. Express your own point of view to an “educated guess”.

6. Comprehension check. Choose the best alternative according to the text:
   1. The scientific method is generally described ... .
      a) in some special literature;
      b) as a series of steps;
      c) as the main in the science.
   2. It is possible to find that . . .
      a) some authors understand the scientific method in their own way;
      b) different sources list slightly different steps;
      c) there is no definite notions how to do investigation.
   3. Almost all scientific inquiry begins with ... .
      a) an observation that piques curiosity or raises a question;
      b) an introduction to the text of investigation;
      c) a special explanation.
   4. The purpose of the question is ... .
      a) to attract the attention to the problem;
      b) to explain the aim of investigation;
      c) to identify the problem in specific terms.
   5. Scientific problem solving involves ... .
      a) reading special literature;
      b) discussing all sorts of questions;
      c) two basic types of reasoning.
   6. Induction involves whatever kinds of information are available, ... 
      a) gathering together a collection of bits of data observations;
b) observation of the scientific literature;
c) doing short abstract experimental results.

7. Forming a hypothesis is sometimes described ... .
   a) in the form of short summary to investigation;
   b) as forming an “educated guess”;
   c) after the aim and the subject of the work.

8. A hypothesis is a guess in the sense that ... .
   a) you are devising an explanation;
   b) you have found a new explanation of the phenomenon;
   c) it is a process of thinking over a new idea.

9. A hypothesis is educated because it ..... .
   a) must be reasonable or sensible;
   b) requires new approach to the problem;
   c) involves a lot of knowledge.

10. One of the most significant strengths of scientific knowledge is ...
    a) the level of education of a researcher;
    b) its importance for national economy;
    c) the degree to which it is self-correcting.

11. There must be extremely good reason, based on a lot of evidence..
    a) to achieve economic effect as a result of investigation;
    b) to accept the new idea and throw out all of the old ones;
    c) to bring something new for our national production.

7. Speak about your first steps in doing investigation:
   1. At present/currently I am studying the problem of ...
   2. The problem I am studying is concerned with ....
   3. There is a lot of/little/no literature on the problem of ...
   4. The literature available on the problem only outlines/mentions in passing/thoroughly/extensively describes such aspects as ...
   5. We have taken up the problem of ... to ....
   6. In solving our problem we follow the hypothesis that ...

UNIT XX

1. Read the text and get ready to speak about the meaning of hypothesis:

STEPS OF THE SCIENTIFIC METHOD: HYPOTHESIS
(part II)

Coming up with scientific questions isn’t difficult and doesn’t require training as a scientist. If you’ve ever been curious about something, if you’ve ever wanted to know what caused something to happen, then you’ve probably already asked a question that could launch a scientific investigation.

The great thing about a question is that it yearns for an answer, and the next step in the scientific method is to suggest a possible answer in the form of a hypothesis. A hypothesis is often defined as an educated guess because it is almost always informed by what you already know about a topic. In other words, a hypothesis is a proposal or possible solution generated by observation. Good hypotheses share several qualities. First, they usually begin with existing knowledge. That is, they don’t propose ideas that are wildly at odds with our general knowledge about how the world works. Additionally, good hypotheses are simple, involving a single problem and possible solution. Finally, good hypothesis are testable and “falsifiable”. That is, the proposed solution in the hypothesis can be subjected to an observable test, and through the test, it is possible for the investigator to prove the hypothesis false.

Generally, a hypothesis is stated as an “if ... then” statement. In making such a statement, scientists are engaged in deductive reasoning, which is the opposite of inductive reasoning. Deduction requires movement in logic from the general to the specific. It means that deduction begins with a generalization. Predictions are made based on the generalization, and those predictions are challenged. This, in essence, is the testing part of science.

Notes:
- falsifiable – опровергаемый;
- testable – проверяемый;
- to be at odds with – быть в противоречии.

2. Answer the following questions:

3. Prove that:
   - a question always yearns for an answer;
   - good hypotheses share several qualities.

4. Comment on:
   - the problem of hypothesis in science.

5. Express your own point of view to the importance of putting hypotheses in every investigation.

6. Comprehension check. Choose the best alternative according to the text:
   1. Coming up with scientific questions ...
      a) isn’t difficult and doesn’t require training as a scientist;
      b) is very difficult task for every young scientist;
      c) is necessary procedure at first.
   2. ... that could launch a scientific investigation.
      a) You’ve read enough scientific literature;
      b) You’ve already published a lot of articles;
      c) You’ve probably already asked a question.
   3. The great thing about a question is that it ...
      a) yearns for an answer;
      b) must be put in the right way;
      c) must be really new for science;
   4. The next step in the scientific method is ...
      a) to make a conclusion;
      b) to suggest a possible answer in the form of a hypothesis;
      c) to organize the experiment.
   5. A hypothesis is ...
      a) your own outlook of the investigated problem;
      b) a proposal or possible solution generated by observation;
      c) something new for science.
   6. Hypotheses don’t propose ideas that are ...
a) old and well known for everybody;
b) have no perspectives in future;
c) wildly at odds with our general knowledge about how the world works.

7. *Good hypotheses are simple.*

a) involving a single problem and possible solution;
b) easy for solution;
c) and interesting for thinking over.

8. *The proposed solution in the hypothesis can be.*

a) discussed at the scientific conferences;
b) subjected to an observable test;
c) checked out in the course of experimental work.

9. *Generally, a hypothesis is stated.*

a) as an “if … then” statement;
b) in the course writing dissertation;
c) as an “if … then” conclusion.

10. *In making such a statement, scientists.*

a) can understand the real use of their investigation;
b) can achieve good results of their investigation;
c) are engaged in deductive reasoning.

10. *Deduction requires.*

a) profound understanding of the problem;
b) movement in logic from the general to the specific;
c) critical thinking.

11. *Predictions are challenged.*

a) involved critical thinking;
b) given by professional scientists;
c) based on the generalization.

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7. Analyze the following expression: “Sherlock Holmes was known as a deductive genius. Note that the collecting of clues (observations) and the formulating of a suggested solution (hypothesis) is induction, not deduction. Somehow, though, “great inductive genius” doesn’t have quite the same ring to it”.

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UNIT XXI

1. Read the text and get ready to speak about the necessity of testing the results of investigation:

**STEPS OF THE SCIENTIFIC METHOD: TESTING**

(part III)

It would be impossible to adequately discuss the methods that scientists use to test their ideas, but there are some general categories and some important restrictions we can examine.

You’ve got yourself a good hypothesis, but you need to spend at least a little bit of time thinking about other possible explanations for your data. Again, you need to keep yourself on a simple track, at least initially, but you also don’t want to get so invested in your hypothesis that you forget that there might be other reasonable explanations.

The most straightforward way to challenge a hypothesis is by taking the direct approach. This is often not possible, but we can use this as an avenue to look at some important restrictions on testing protocol.

So now you’re ready for the most direct test.

One can’t say enough about how important this aspect of science is. “Testability” is a requirement for any useful scientific concept. But, of course, there are many, many different kinds of ways to test predictions. Some require laboratories and lots of expensive equipment, but many don’t. History’s scientists have demonstrated immense creativity in devising ingenious ways to challenge their predictions.

Many modern scientific studies involve a test with a control group and an experimental group. These two groups must be as much alike as possible other than the single difference significant to your experiment.

Other kinds of studies can be done with modeling or with research and data analysis.

As a result, we can come to the conclusion that our hypothesis is testable; an experiment could be set up to test the validity of the statement.

**Notes:**
- *a track* – путь;
- *ingenious* – изобретательный, находчивый;
- *an approach* – подход.
2. **Answer the following questions:**

1. Is it possible to adequately discuss the methods that scientists use to test their ideas? 2. What can we examine? 3. What is necessary to do if you have got yourself a good hypothesis? 4. What is the most straightforward way to challenge a hypothesis? 5. Is it often possible? 6. When can we use this? 7. Is testing an important aspect of science? 8. What is “testability”? 9. What do some tests require? 10. What have history’s scientists demonstrated? 11. How many groups are involved in tests by modern scientific studies? 12. Are these groups alike or different? 13. With the help of what can other kinds of studies be done? 14. When can we come to the conclusion that our hypothesis is testable?

3. **Prove that:**

   – testing is necessary to prove that your hypothesis is right.

4. **Comment on:**

   – importance of testing in science.

5. **Express your own point of view to the importance of testing in your investigation.**

6. **Comprehension check. Choose the best alternative according to the text:**

   1. *It would be impossible to adequately discuss the methods* ...
      a) if you don’t formulate them correctly;
      b) if your idea is not new;
      c) that scientists use to test their ideas.
   2. *There are some general categories* ...
      a) which are necessary to be known;
      b) and some general principles we should know;
      c) and some important restrictions we can examine.
   3. *If you have a good hypothesis* ...
      a) you need another possible explanations for your data;
      b) it is necessary to test it;
      c) it is the first step to success.
   4. *You need to keep yourself on* ...
      a) reading scientific articles, at least of your supervisor;
      b) a simple track, at least initially;
c) doing practical part of your investigation.

5. The most straightforward way to challenge a hypothesis is ...
   a) by taking the direct approach;
   b) to test it;
   c) to consult with other scientists.

6. “Testability” is a requirement ...
   a) for every scientific investigation;
   b) which should be fulfilled;
   c) for any useful scientific concept.

7. Some tests require ...
   a) deep theoretical knowledge;
   b) laboratories and lots of expensive equipment;
   c) investments from the face of every researcher.

8. History’s scientists have demonstrated immense creativity in ...
   a) devising ingenious ways to challenge their predictions;
   b) finding the ways to test their hypothesis;
   c) presenting their investigations at the conferences.

9. Many modern scientific studies involve a test with ...
   a) a certain group of students;
   b) a control group and an experimental group;
   c) some modern apparatus.

10. These two groups must be ...
    a) as much alike as possible;
    b) informed and prepared for your test;
    c) of the same abilities.

11. Other kinds of studies can be done with ...
    a) the help of your supervisor;
    b) accurate analysis of data;
    c) modeling or with research and data analysis.

12. As a result, we can come to the conclusion that ...
    a) out hypothesis is testable;
    b) we are on the right way;
    c) it is necessary to change something.

13. An experiment could be ...
    a) successful at the end;
    b) set up to test the validity of the statement.
    c) of great importance for our economy.
UNIT XXII

1. Read the text and get ready to speak about testing done through experimentation:

TESTING DONE THROUGH EXPERIMENTATION
(part IV)

Let's discuss the problem of testing done through experimentation.

The investigator conducts the experiment on the control group just as with the experimental group. The only difference is that the investigator does not subject the control group to the single factor or intervention being tested. This single factor being tested is known as the variable. The control group exists to provide a valid comparison to the experimental group.

Finally, in your experiment you will need to subject your results to statistical testing to demonstrate whether any differences between your control and experimental groups are significant or not. Humans do not naturally think statistically. We are easily fooled into thinking differences are significant when they are not. So mathematicians have developed a whole set of statistical tests to challenge the significance of different kinds of results.
So you can see that this testing stuff has quite a few limitations and controlling factors involved. Scientists are constantly on the lookout for flaws in their experimental designs. And for flaws in other scientists' as well, since every scientist is dependent upon the work done by everyone else in his or her field. This is another aspect of the self-correcting nature of science. Mistakes get made – but they also get found and corrected, because all the work scientists do is scrutinized by other scientists.

What about other ways to test your hypothesis that aren’t so direct? There are a lot, but a couple of kinds merit a moment’s attention.

One indirect way to test a hypothesis like this is by using models. We could reduce the problem even further, to consideration of the physics involved. And in this age of exploding electronic technology, computer simulation is an increasingly important aspect of experimental activity.

Useful as simulations can be, we need to keep the old computer programmers’ adage GIGO in mind. GIGO is an acronym for “Garbage In, Garbage Out”. Essentially, it means that the information you can get out of your system can be no better than the quality of information you put into it.

Notes:
- a lookout – наблюдение;
- a flaw – изъян, недостаток;
- to scrutinize – тщательно исследовать;
- to be fooled – заблуждаться;
- to merit – заслуживать;
- an adage – поговорка;
- acronym – акроним (звуковая аббревиатура);
- “Garbage In, Garbage Out” – «мусор на входе – мусор на выходе» (принцип программирования, в соответствии с которым неверные вводные данные не могут привести к правильному результату);

2. Answer the following questions:
are the models used? 12. What is an increasingly important aspect of ex­
GIGO? 15. What does it mean?

3. Prove that:
– statistics are important for testing;
– models can be used in the process of testing.

4. Comment on:
– the difference in testing the control and experimental groups;
– the self-correcting nature of science.

5. Express your own point of view to the old computer program­
mers’ adage GIGO.

6. Comprehension check. Choose the best alternative according to
the text:
1. The investigator conducts the experiment ...
   a) if he feels the necessity to do this;
   b) on the control group just as with the experimental group;
   c) in the specially equipped laboratory.
2. The investigator does not subject the control group to ...
   a) the work which is done by the experimental group;
   b) regularly testing;
   c) the single factor or intervention being tested.
3. This single factor being tested is ...
   a) very important for the experiment;
   b) known as the variable;
   c) sometimes unknown in science.
4. The control group exists ...
   a) to provide a valid comparison to the experimental group;
   b) to help an investigator to achieve the necessary results;
   c) to prove the hypothesis.
5. In your experiment you will need ...
   a) to consult your supervisor;
   b) to subject your results to statistical testing;
   c) to cooperate with some scientists.
6. Statistical testing is necessary to demonstrate whether ...
a) any differences between your control and experimental groups are significant or not;
b) your hypothesis are right or not;
c) you are on the right way or not in your investigation.

7. Mathematicians have developed a whole set of statistical tests ... .
a) to challenge the significance of different kinds of results;
b) to achieve some important results;
c) to prove the necessity of doing them.

8. Scientists are constantly on the lookout for... .
a) successful results;
b) the clearness of their experiments;
c) the flaws in their experimental designs.

9. Every scientist is dependent upon ... .
a) the budget given to his investigation;
b) the work done by everyone else in his or her field;
c) the interest shown to his work.

10. Mistakes get made – but... .
a) it is normal for any work;
b) they are not always serious;
c) they also get found and corrected.

11. All the work scientists do is ... .
a) scrutinized by other scientists;
b) important for their future;
c) controlled by our government.

12. One indirect way to test a hypothesis like this is by ... .
a) consulting other scientists;
b) using models;
c) using special apparatus.

13. In this age of exploding electronic technology, ... .
a) self-made computer program gives definite effect in experimental activity;
b) it is valuable to find a proper computer program to control your experimental work;
c) computer simulation is an increasingly important aspect of experimental activity.

14. GIGO is ... .
a) a very good program for testing;
b) a synonym for “Garbage In, Garbage Out”;
c) an acronym for “Garbage In, Garbage Out”.

15. It means that the information you can get out of your system ....
   a) can be no better than the quality of information you put into it.
   b) it just the best for your experiment;
   c) can be of great importance for you.

7. Answer the questions and then try to speak about the planning results of your investigation:

   1. Have you already obtained any research results? 2. What are the main/comprehensive results of your current research? 3. Has your research been successful? 4. Have you succeeded in receiving extensive data? 5. Do your research data agree with the theory you follow? 6. Do your results coincide with those obtained by other researchers? 7. Are the results of purely theoretical or practical interest? 8. Do your research results appear to be of both theoretical and practical importance? 9. Are the data/observations you have obtained sufficient to formulate your final conclusions? 10. What part of your research is/remains still unfinished? 11. Do the data/results/observations/findings allow you to come to any definite conclusion(s)? 12. What conclusion(s) have you come to? 13. How long will it take you to finish your research?

UNIT XXIII

1. Read the text and get ready to speak about the importance of correlation:

   FINAL AREA OF TESTING: CORRELATION
   (part V)

   One final area of testing needs a bit of attention. This is called correlation, and can be a useful kind of information. A high degree of correlation suggests some kind of causal link between the two things we are comparing.

   However, correlation data are very dangerous, and need to be considered with a considerable degree of skepticism. Correlation does not imply causation.

   A simple example can demonstrate this easily. If you were to collect a
bunch of information about elementary school children from grades one through six, you’d be astounded to discover an extremely high correlation between mathematical ability and shoe size. If correlation implied causation, you’d be wracking your brain to figure out whether being good at math makes your feet big, or whether having big feet makes you good at math.

In reality, of course, neither of these is true. As children get older, they get bigger, including their feet. And as they get older, they also go further in school, and get more instruction in math. A sixth grader’s feet will be bigger than a first grader’s, and her math skills will be better, too. Not because one causes the other, but because both are affected by two other, related factors: age and amount of education.

Scientific process doesn’t have an end. It’s circular. Actually, it’s a lot more complicated than that. The progress of science tracks is a very complicated pattern of many, many interlocking circular pathways. But the important message is that you never get to the end. This is the Great Fallacy of most discussions of the scientific method. No list can adequately describe the process of science it requires, at the very least, a cycle.

Notes:
causation – причинно-следственная связь;
a bunch of information – какая-то информация;
to wrack – (зд.) удивлять;
to figure out – разгадывать;
interlock – взаимопроникновение;
pathway – направление;
falacy – хитрость, заблуждение.

2. Answer the following questions:
of science tracks? 12. Is it possible to describe the process of science?

3. Prove that:
   – correlation is a useful kind of information in testing;
   – scientific process doesn’t have an end.

4. Comment on:
   – danger in correlation data.

5. Express your own point of view to the process of correlation.

6. Comprehension check. Choose the best alternative according to the text:
   1. A high degree of correlation suggests ...
      a) some kind of causal link between the two things we are comparing;
      b) a new way of thinking over the problem of investigation;
      c) some kind of comparison of data taken.
   2. Correlation data need to be ...
      a) the main in your investigation;
      b) to be controlled all the time;
      c) to be considered with a considerable degree of skepticism.
   3. You are to collect a bunch data of information about ...
      a) the results of your experiment;
      b) elementary school children from grades one through six;
      c) elementary school children from grades one through five.
   4. You’d be astounded to discover an extremely high correlation be-
      tween ...
      a) mathematical ability and shoe size;
      b) mathematical and creative abilities;
      c) sport abilities and shoe size.
   5. In reality, of course, ...
      a) neither of these is true;
      b) it is a question for discussion;
      c) it is necessary to test once more.
   6. As children get older, they ...
      a) get clever, including their success at school;
      b) become higher in size;
      c) get bigger, including their feet.
7. As they go further in school, they ...
   a) have more information in different subjects;
   b) get more instruction in math;
   c) read a lot of interesting books.
8. A sixth grader’s feet will be bigger than a first grader’s, ....
   a) but sometimes the math skills are not better;
   b) and the dress size will be bigger too;
   c) and her math skills will be better, too.
9. Scientific process doesn’t have an end ...
   a) it is circular;
   b) it is endless;
   c) it is captivating.
10. The progress of science tracks is ...
   a) a rather problematic process;
   b) a very complicated pattern of many interlocking circular pathways;
   c) discussed greatly in all spheres of economy.
11. But the important message is ...
   a) your attitude to science;
   b) that you never get to the end;
   c) that the end can be seen after your experiment.
12. No list can adequately describe ...
   a) the contribution made by people to science;
   b) all the efforts made by every young scientist to achieve success;
   c) the process of science it requires.

7. Try to explain how science can be characterized from your point of view.

UNIT XXIV

1. Read the text and get ready to speak about the necessity of conclusions in science:

EXPLANATIONS AND CONCLUSIONS
   (part I)

Eventually, all the testing and experimenting produces something in
the way of conclusions.

This is one of the ways in which the typical depiction of the "Scientific Method" is most misleading. Publications of conclusions, typically happen along the path of the investigation, since scientific investigation simply doesn’t come to an end.

If we reduce real science to a simplistic depiction, here are the three kinds of things that can constitute the “Conclusions”.

The results of a round of testing come in, and they match your predictions essentially perfectly.

*Conclusion:* Your experiment has supported (not proven) your hypothesis. Your level of confidence in the hypothesis goes up a notch or so. Your next step? The test results become new observations; if your hypothesis is significant enough, you test it again. You might repeat the first kind of test, just to assure yourself that the results are repeatable (a very important consideration in science), or you may devise a different method of testing that might expose weaknesses in the hypothesis that the first test protocol missed.

The results of the round of testing come in, and they are nothing like you predicted.

*Conclusion:* Your hypothesis is probably wrong. Your next step? You’ll probably take a very careful look at your experimental protocol for flaws; you may repeat it just to make sure that the first result wasn’t a fluke. Ultimately, you go back and consider other hypotheses for your original observations. And of course, the results of your first test are new data; new observations help you to devise a better hypothesis. Then? You test the new hypothesis.

*Notes:*

*a depiction* – описание;
*misleading* – обманчивый, вводящий в заблуждение;
*simplistic* – упрощенный;
*a notch* – степень;
*a fluke* – удача, везение;
*ultimately* – в конечном счете, окончательно.

2. *Answer the following questions:*

1. What is conclusion? 2. When is it necessary to use conclusions? 3. How many kinds of things can constitute the “Conclusions”? 4. When is it possible to make a conclusion that your experiment has supported (not
proven) your hypothesis? 5. What is your next step? 6. In what case do you test your hypothesis again? 6. Why is it necessary to repeat the first kind of test again? 7. In what case you is it possible to come to the conclusion that hypothesis is probably wrong? 8. What will it be your next step in this case? 9. Will the results of your first test require new data? 10. Is it necessary to test the new hypothesis?

3. **Prove that:**
   - conclusion is one of the steps of scientific method.

4. **Comment on:**
   - necessity of making conclusions.

5. **Express your own point of view to the process of making conclusions.**

6. **Comprehension check. Choose the best alternative according to the text:**
   1. *All the testing and experimenting produces* ....
      a) something in the way of conclusions;
      b) analysis of the results which were received;
      c) a description of the testing’s procedure.
   2. *Publications of conclusions* ....
      a) may be done in any scientific magazine;
      b) is necessary to show the process of investigation;
      c) typically happen along the path of the investigation.
   3. *The results of a round of testing come in, and* ....
      a) they match your predictions essentially perfectly;
      b) you should think about the conclusions;
      c) they are very important for your analysis.
   4. *The conclusion may be:* ....
      a) your experiment has supported (not proven) your hypothesis;
      b) everything was wrong because the results are not stable;
      c) your experiment was not done in a proper way.
   5. *Your level of confidence in the hypothesis* ....
      a) is not perfect;
      b) goes up a notch or so;
      c) is wrong from the first sight.
   6. *If your hypothesis is significant enough,* ....
a) you are ready to support your investigation;
  b) you test it again;
  c) it is a good sight.
7. *You might repeat the first kind of test, ... .*
  a) if you think it is necessary to do;
  b) in the case you are not sure in your results;
  c) just to assure yourself that the results are repeatable.
8. *You may devise a different method of testing ... .*
  a) that might expose weaknesses in the hypothesis;
  b) to be sure that your hypothesis is right;
  c) if your supervisor advises you to do so.
9. *The results of the round of testing come in, and ... .*
  a) you see that everything is all right;
  b) they show you that there are some drawbacks in your work;
  c) they are nothing like you predicted.
10. *When the results are nothing like you predicted ... .*
    a) it means that your hypothesis is probably wrong;
    b) you understand that it is necessary to do the test once more;
    c) you should ask your supervisor for help.
11. *You’ll probably take a very careful look at ... .
    a) the process of experiment to find some drawbacks;
    b) your experimental protocol for flaws;
    c) the description of your experimental work.
12. *You may repeat it just to make sure that ... .
    a) you were right with the first results;
    b) your hypothesis is right;
    c) the first result wasn’t a fluke.
13. *You go back and consider ... .
    a) other hypotheses for your original observations;
    b) to repeat everything once more;
    c) to be more careful with your experiment.
14. *And of course, the results ... .
    a) of your first test are new data;
    b) will be very good;
    c) will be obtained in the right way.
15. *New observations help you ... .
    a) to do your work in a proper way;
    b) to devise a better hypothesis;
c) to organize a new experiment.

16. Your next step will be as follows: ...
   a) you control thoroughly everything that you have done;
   b) you decide to repeat you experiment;
   c) you test the new hypothesis.

7. Answer the questions and try to speak about your research results and conclusions:
   1. The research has been under way for a year and I’ve got ... .
   2. At present a lot of work is being done to ... .
   3. The results we have ... so far cannot be used to ... .
   4. Unfortunately, we have failed to ... but succeeded in ...
   5. The findings prove to ...
   6. The evidence appears to ...
   7. As a result of numerous experiments performed we have obtained sufficient data to ...
   8. Most of our research findings are consistent with ...
   9. We have come to the conclusion that...

UNIT XXV

1. Read the text and get ready to speak about the necessity of conclusions in science:

   EXPLANATIONS AND CONCLUSIONS
   (part II)

   Finally, when the results of the tests come in, they may not be just what you predicted, but might be close enough that, though the hypothesis is probably not quite right, it’s probably somewhere in the vicinity of correct. Your next step? You revise your hypothesis to fit the new data, which are, once again, new observations. Isn’t this cheating? Nope. Because, of course, once you have that new hypothesis, you have to devise a new way to test it.

   There are two vital pieces of information buried in this list of conclusions, and we’ll wrap up this long essay by listing them.

   There is no such thing as proof in science. It doesn’t matter how many experiments agree with your hypothesis, or how much data you have. All concepts in science are fundamentally tentative. What does change as we accumulate evidence is that our level of confidence in our
ideas increases. As more and more evidence accumulates which supports an idea, and none appears that significantly contradicts it, we become very confident in that idea. This is the situation with things like Newton’s Laws and the theories of evolution and atomic structure. We assume that they are at least very close to the truth. But we never, ever decide that we know for sure that they are the truth.

As a result, we can say that a final step in the scientific methods involves analysis and interpretation of the data gathered during the testing phase. This allows the researcher to form a conclusion based on the data. A good conclusion takes into account all the data gathered and will reflect on the hypothesis, whether it supports the hypothesis or not.

Notes:
- a vicinity – близость;
- to cheat – жульничать, мошенничать;
- nope – (разг.) нет;
- tentative – предварительный, не вполне определенный.

2. Answer the following questions:

3. Prove that:
- there is no such thing as proof in science.

4. Comment on:
- Newton’s Laws and the theories of evolution and atomic structure, if you this information.
5. Express your own point of view to the last steps of the scientific method.

6. Comprehension check. Choose the best alternative according to the text:
1. When the results of the tests come in, . . .
   a) they may not be just what you predicted;
   b) you understand that your work is successful;
   c) you feel yourself happy: the work is finished.
2. The hypothesis is probably not quite right, . . .
   a) you fell disappointed yourself;
   b) it is necessary to look for another one;
   c) it’s probably somewhere in the vicinity of correct.
3. You revise your hypothesis to fit the new data, . . .
   a) which are, once again, new observations;
   b) it takes you a lot of time;
   c) but it is difficult to do.
4. If you have a new hypothesis, . . .
   a) you must do your experiment once more;
   b) you have to devise a new way to test it;
   c) it means to begin your work from the beginning.
5. There are two vital pieces of information . . .
   a) which is important to take into consideration;
   b) buried in this list of conclusions;
   c) found after testing the experiment.
6. There is no such thing as . . .
   a) proof in science;
   b) importance of science;
   c) interest to science all over the world.
7. All concepts in science . . .
   a) must be proved by experiments;
   b) must be studied thoroughly;
   c) are fundamentally tentative.
8. What does change as we accumulate evidence is that . . .
   a) we have found the right hypothesis;
   b) our idea is the best of all;
   c) our level of confidence in our ideas increases.
9. We assume that . . . are at least very close to the truth.
a) our invention and its theoretical basis;
b) the theories of evolution and atomic structure;
c) the theory and experiment in our work.

10. But we never, ever decide that we know for sure ...
   a) what to do if our hypothesis is not right;
b) what science is;
c) that they are the truth.

11. A final step in the scientific methods involves ...
   a) all our effort to finish our work successfully;
b) analysis and interpretation of the data gathered during the testing phase;
c) explanations and conclusions of the results achieved.

12. This allows the researcher ...
   a) to form a conclusion based on the data;
b) to receive a scientific degree;
c) to bring to the end his investigation.

13. A good conclusion ...
   a) gives possibility to finish investigation;
b) takes into account all the data gathered;
c) shows the high understanding of the topic.

UNIT XXVI

MY SCIENTIFIC WORK

1. Read the text and get ready to speak about the necessity of having
a scientific supervisor:

SUPERVISING

The necessity of having a scientific supervisor is obvious and undoubted. It is often taken for granted by all postgraduates. But let’s dwell on what we really know about a scientific supervisor and what we should know, what is worth knowing. In other words, what kind of information about his / her personality is important to understand within the context of postgraduate courses.

A scientific supervisor is a person who can successfully combine at least two qualities of almost equal importance:

1) being a scientist;
2) being a supervisor.

But actually there is one more, not less significant quality implied by this phrase: being a pedagogue.

Only the harmony of all these characteristics can succeed in giving excellent results, thus it can be fruitful for both, the scientific supervisor himself and his postgraduate.

So, being a scientist implies the availability of the following characteristics:

a) original and sustained thinking;
b) inquiring mind;
c) purposefulness and persistence;
d) perfectionism.

Being a supervisor implies excellence, responsibility and self-demand. Of course, it is good if a supervisor has self-confidence and optimism. Discipline is not less significant characteristic of him. He should be able to organize the scientific work of his pupils in a proper way. If he can be consecutive in everything he is doing, it is just to the mark. His self-assessment should be on the necessary level and, of course, reflexivity is very important for every supervisor.

Notes:
sustained thinking – стабильное мышление;
inquiring mind – пытливый ум;
consecutive – последовательный, логичный;
purposefulness – целенаправленность;
a self-assessment – самооценка.
2. **Answer the following questions:**

1. Is it necessary to have a supervisor? 
2. Is it often taken for granted by all postgraduates? 
3. What are the main necessary qualities for every supervisor? 
4. Every supervisor is a pedagogue, isn’t he? 
5. What can give excellent results for a postgraduate’s investigation? 
6. What is original and sustained thinking? 
7. How do you understand the term “inquiring mind”? 
8. Why is it necessary to be purposeful and persistent for a supervisor? 
9. What implies being a supervisor? 
10. Is it good if a supervisor has self-confidence and optimism? 
11. Why do you think so? 
12. In what case is it possible to organize the scientific work of the pupils? 
13. Why is it necessary to have reflexivity for a supervisor?

3. **Prove that:**

– it is necessary to have a supervisor to do scientific work.

4. **Comment on:**

– the qualities of a good supervisor.

5. **Express your own point of view of the personality of a supervisor.**

6. **Comprehension check. Choose the best alternative according to the text:**

1. ... *is obvious and undoubted.*
   - a) To do your scientific work in time; 
   - b) The necessity of having a scientific supervisor; 
   - c) To find a scientific supervisor.

2. *It is often taken ... .
    - a) for granted to the best postgraduates; 
    - b) for granted by all postgraduates; 
    - c) selectively to some postgraduates.

3. *A scientific supervisor is a person who ... .
    - a) has scientific degree and academic rank; 
    - b) works in the same university as a postgraduate; 
    - c) can successfully combine at least two qualities.

4. *These two qualities of almost equal importance are ... .
    - a) being a scientist and being a supervisor; 
    - b) being a well-known person and being the chief of a department; 
    - c) being doctor of sciences and being a good lecture.
5. There is one more, ... being a pedagogue.
   a) very important quality to a supervisor;
   b) not less significant fact to be appointed as a supervisor;
   c) not less significant quality implied by this phrase.
6. Only the harmony of all these characteristics can ... .
   a) succeed in giving excellent results;
   b) help a postgraduate in his work;
   c) be fruitful in investigation.
7. Being a supervisor implies ... .
   a) a lot of time for supervising;
   b) excellence, responsibility and self-demand;
   c) to be helpful in all spheres of investigation.
8. It is good if a supervisor ... .
   a) has self-confidence and optimism;
   b) has a lot of necessary scientific books in his private library;
   c) is very kind and has a lot of interesting and original ideas.
9. He should be able to ... .
   a) give consultations every week;
   b) explain all difficult points in the work;
   c) organize the scientific work of his pupils in a proper way.
10. ..., it is just to the mark.
   a) If he can help in writing scientific articles and to publish them;
   b) If he can be consecutive in everything he is doing;
   c) If he can give consideration as much as possible.
11. His self-assessment ... .
   a) should be on the necessary level;
   b) should be very high;
   c) is his strong point.
12. It is very important for every supervisor ... .
   a) to have reflexivity;
   b) to have good relations with his pupils;
   c) to be a good friend for a postgraduate.

7. Discuss the topic “An Ideal Supervisor”. Focus on his (her) personal features, professional characteristics, ability to encourage, to involve into research, and his (her) organizational abilities.
UNIT XXVII

1. Read the text and get ready to speak about your scientific supervisor:

L. G. ORLOVA – MY SCIENTIFIC SUPERVISOR

I’d like to tell you a few words about Larisa Grigorievna Orlova. She is a doctor of sociology.

Larisa Grigorievna graduated from the Belarusian State University, the faculty of philosophy. Her first postgraduate paper was on philosophy while her second research dealt with sociology. She was awarded Doctor’s degree.

The range of scientific interests of Larisa Grigorievna is very wide. She is interested in philosophy, modern sociology as well as the history of sociology and the methodology of sociology. At the present moment she is concerned with gender problems. She has had many publications on various sociological problems. She has taken part in different scientific conferences and seminars both in our country and abroad. She is in good relationships with many well-known scientists in different countries.

Nowadays she combines both theoretical and practical research work. Some years ago she worked in Europe, in the universities there, but at the present moment she lectures at our university. She teaches all her students very intensively and thoroughly giving them good theoretical and practical knowledge and she cooperates with them very fruitfully. As a matter of fact, when Larisa Grigorievna carries out sociological research, she involves her students and postgraduates into this research and it helps them very much to practice.

Orlova L.G. became my scientific supervisor when I entered this postgraduate course. I am very happy to work with her. She provides me with necessary literature, helps me to organize the empirical research and encourages me to examine the subject of study from a new fresh approach. She is a very busy person that is why our work takes a form of telephone consultations. We meet at our department every month and I usually make a report on my study, we discuss some problems, she informs me about the conferences and seminars that are to take place and suggests me to take part in them.

I hope that our collaboration is fruitful and will always be so.
2. Answer the following questions:

1. What is the name of your scientific supervisor? 2. What scientific degree does he (she) have? 3. What university did he (she) graduate from? 4. Do you have any information about his (her) investigation? 5. What is the range of his (her) scientific interests? 6. What about the publications of your scientific supervisor? 7. Does he (she) take part in any scientific conferences? 8. Where do these conferences take place? 9. Does he (she) have any relations with scientists from other countries? 10. Does your supervisor work in our university or in some other place? 11. What are the main characteristics of your scientific supervisor? 12. Can you take any literature from your supervisor’s library? 13. When do you get all sorts of consultations from your supervisor? 14. When do you present your reports about the work you have done? 15. In what way does your supervisor organize the consultations for you? 16. Do you think that your work with him (her) is fruitful? 17. Do you plan to continue your collaboration?

3. Prove that:
   – your supervisor is the best for you.

4. Comment on:
   – features of character of your supervisor.

5. Give your point of view: What is more important for a supervisor to be an agreeable person or a good professional? Give your reasons.

6. Discuss the problem with your partner: “What is worth doing is worth doing well”.

7. Speak about your scientific supervisor.

UNIT XXVIII

MY RESEARCH WORK

1. Learn the following words and word combinations, they will help
you to speak about your research:
1) to graduate from (the university / academy / institute) – окончить вышее учебное заведение;
2) a post-graduate – аспирант, соискатель;
3) to take / have a post-graduate course – учиться в аспирантуре;
4) degree of candidate of sciences; candidate’s degree (less formal) – степень кандидата наук;
5) thesis – диссертация (иногда употребляется “dissertation”, хотя в Великобритании это работа меньшей значимости);
6) to do academic work / research – выполнять научную работу / исследование;
7) to devote oneself to academic / research work – посвятить себя науке;
8) a branch of knowledge – отрасль науки;
9) an academic work – научный труд;
10) an academic approach – научный подход;
11) a learned journal – научный журнал;
12) a learned article – научная статья;
13) a learned paper – научный доклад;
14) a learned society – научное общество;
15) a department – кафедра;
16) a research worker / a researcher – научный работник;
17) a research associate – научный сотрудник;
18) scientific supervisor – научный руководитель;
19) to analyze statistic data / information – анализировать статистические данные / информацию

2. Read the dialogue “Writing a Research Report” and then role-play it with your partner on analogy:

Writing a Research Report
A. Would you give me some recommendations about writing a research report?
B. I believe your supervisor would do it better.
A. No doubt she would do it. But she is abroad at the moment. She is taking part in the conference in Europe.
B. First you must know that there are some stages of writing a report.
A. As far as I know there is a standard format for research papers.
B. Yes, and this includes an introduction and sections on methods, findings and discussions.

A. As far as I understand the purpose of the research report is to offer a clear and unambiguous statement of what was done, how it was done and what was found.

B. And one more thing. While writing a report, pay special attention to introduction. It should offer readers a sense of context.

A. I do know that introduction is a decision of the problem or subject being studied. But I’d like to know details about writing it.

B. If I were your supervisor I would give you more detailed information. I am sorry but I am not so good at it.

A. Well, I’ll wait for her coming back from Europe.

3. Answer the following questions:
1. What recommendations does A. want to get?
2. Why his supervisor can’t give him recommendations on writing a research report?
3. What is the purpose of any research report?
4. What is recommended to pay special attention to?
5. Why is it necessary?

4. Give your recommendations how to write a research report.

5. Report on your research work. Use the outline given below:

My Research Work

Outline

1. The phenomena or process under study.
2. The subject of research.
3. The present state of research.
4. Projects and programs for future.
5. Results and their use in industry, agriculture etc.

Example:
The theme of my research is ...

1) The theme of my research is connected with ...

2) It is the science/a comparatively new branch of science that studies...

3) The field of science that I’m concerned with gathers knowledge about...

4) Major developments include advances in...

5) Remarkable advances have been made in...

6) The branches of science contributing a lot to progress in my field of research are...
My research is aimed at the theoretical fundamentals and ways of practical implementation of ... ... .

The object of research is __________________________.
The subject of research is __________________________.
Scientific newness is _______________________________.

6. Discuss the following problems with your partner:
a) In any field, in order to succeed in one’s career one should treat one’s job as it were of primary significance for mankind.
b) What is worth doing is worth doing well.

7. Choose the right answer:
1. Research involves: ... .
a) curiosity, accuracy, honesty;
b) curiosity, insistency;
c) accuracy, honesty.
2. When someone is engaged into research work she (he) must have:
a) much time;
b) lots of friends;
c) creative imagination.
3. The term research comes from ... .
a) the English word “find”;
b) the Russian word “искать”;
c) the French word “rechercher”.
4. Researchers use ... .
a) concept;
b) newspapers;
c) fashion.
5. You should end your research paper with ... .
a) information;
b) conclusion;
c) tests.

8. Fill in the gaps with the words given above:
Introduction, sense, findings, format, experience, abroad, supervisor, recommendations

A. In my opinion you have a good __________ in writing a research
report. Would you give me some ________ on writing a report?

B. I believe your ________ would do it better.

A. No doubt, but she is ________ at the moment.

B. O, Key. First you must know that there is a standard ________
for research papers.

A. Yes, I know this includes an introduction, section on methods,
_________ and discussion.

B. Quite right, and while writing a report pay special attention to
_________. It should offer readers a _________ of context.