ПРЕДИСЛОВИЕ

В современном мире при подготовке специалистов любого профиля особое значение приобретает овладение иностранным языком. Курс английского языка для неязыковых специальностей вузов носит профессионально ориентированный характер, его задачи определяются профессиональными и познавательными потребностями специалистов соответствующего профиля, а основной целью является практическое овладение английским языком.

Данное методическое пособие предназначено для студентов I-IV курсов специальностей «Программное обеспечение информационных технологий»; «Информационные системы и технологии (по направлениям)»; «Дизайн электронных и веб-изданий»; «Программное обеспечение информационной безопасности мобильных систем».

Целью настоящего пособия является развитие и совершенствование у студентов данных специальностей навыков чтения, понимания оригинальных текстов с выходом в устную речь, углубление знаний в области лексики и грамматики.

Методическое пособие включает такие разделы как «Краткая история создания университета», «Развитие информационных технологий в РБ», «Общая характеристика компьютеров», «Сети и их классификация», «Интернет», «Операционные системы».

Каждому разделу соответствуют тексты по определенной тематике. Тексты пособия подобраны с учетом лексических трудностей, которые снимаются по мере прохождения темы. Для развития навыков монологической и диалогической речи тексты снабжены рядом вопросов проблемного характера, темами для обсуждения. Тексты подобраны из оригинальных англоязычных источников, а также переводной литературы, некоторые тексты адаптированы и подвергнуты переработке. Для развития и совершенствования лексических и грамматических навыков в пособие включены упражнения на словообразование, нахождение соответствия терминов и их определений, подстановочные упражнения, подбор синонимов и антонимов и др. Предтекстовые упражнения направлены на формирование потенциального словаря студентов в области научных исследований, собеседования при приёме на работу, различных аспектов информационных технологий.

UNIT I

UNIVERSITY

VOCABULARY STUDY

Nouns and noun phrases

Forestry – лесное хозяйство; PhD degree – степень доктора наук, приблизительно эквивалентна степени кандидата наук в постсоветских странах; invader – захватчик; subdivision – структурное подразделение; graduate programs – курс обучения; facility – приспособление, оснащение, возможность; scope – диапазон, сфера; data processing – обработка данных; mould products – отлитые в форме продукты; construction and fine functional ceramics – строительные тонкокерамические продукты; current and functional electroplating – электрофункциональная гальванизация; engineering and medical bindings – инженерные и медицинские вяжущие материалы; energy carriers – энергоносители.

Adjectives

Flourishing – переживающий пик развития, расцвета; woodworking – деревообрабатывающий; research – исследовательский.

Verbs

To train for careers – готовить по специальности; to establish – основывать; to commemorate – праздновать, отмечать событие; to transfer – переносить, переводить из одного места в другое; to inspire – вдохновлять; to affiliate – присоединять, включать в систему в качестве филиала; to grant – предоставлять, выдавать официальное разрешение; to recognize – признавать; to accredit – аккредитовать, уполномочить, доверять.

I. Match the words to their Russian equivalents.

Faculty of Print Technology and Media Communications	сталкиваться
to face	факультет принттехнологий и медиакоммуникаций
to provide	сдавать зачеты

Faculty of Information Technology	факультет заочного образования
to sit exams	обеспечивать, способствовать
a dean	проводить исследование
a vice-rector	декан
to carry out survey	факультет информационных технологий
to pass credit tests	проректор
Faculty of extramural studies	сдавать экзамены

II. Match the words to their definitions.

Flourishing, to transfer, woodworking, research, facility, to inspire, invader, to accredit, forestry, to commemorate.

1. The science of developing, caring for, or cultivating forests; the management of growing timber.

2. To exist or be done in order to remind people of (an important event or person from the past).

3. A person who enters by force to conquer or plunder.

4. Reaching a height of development or influence.

5. To give official authorization or approval; to recognize (an educational institution) as maintaining standards that qualify the graduates for admission to higher or more specialized institutions or for professional practice.

6. Investigation or experimentation aimed at the discovery and interpretation of facts, revision of accepted theories or laws in the light of new facts, or practical application of such new or revised theories or laws.

7. The skill or work of making things out of wood.

8. Something that makes an action, operation, or activity easier.

9. To cause something to occur or to be created or done.

10. An act or process of moving someone or something from one place to another.

III. Read and translate the following text.

Text A. University

The early history of the University began on the 8th of December, 1859, when the Gory-Goretsky Agricultural Institute welcomed the first students of the Forestry program, who were trained for careers in agronomy and forestry with the opportunity of obtaining a PhD degree in these fields. Forestry faculties were established in 1919 at the Gory-Goretsky Agricultural Institute and in 1920 in Minsk Polytechnic Institute. They further became a basis for the foundation of the Forestry Institute in Gomel on June 1, 1930. This new technical institution of higher education faced the task of training engineering personnel for forestry, forest and woodworking industries.

Therefore, the year 2022 commemorates the 163rd anniversary of the higher forestry education in Belarus.

In 1934 the Forestry Institute was renamed into the Belarusian Forestry Engineering Institute and was given the name of S. M. Kirov in 1935. In 1941 at the beginning of the Great Patriotic War the Institute was evacuated to the city of Sverdlovsk and became a part of the Ural Forestry Engineering Institute. After liberation of Gomel from German fascist invaders the Institute was re-evacuated to Gomel. In August 1946 the Institute was transferred to Minsk.

Its reformation in 1961 into the Belarusian Technological Institute was inspired by an intensive development of the Republic's chemical industry. It started training engineers for chemical industries. Later it was given the name of the Belarusian Technological Institute named after S. M. Kirov.

Real flourishing of the Technological Institute started at the end of the 80s and was brought about by intensive development of science; new graduate programs, improved material and technical facilities, and well-equipped laboratories. In 1993 the Government of the Republic of Belarus granted the Institute with the university status (Belarusian State Technological University).

The scope of the University competence has enlarged dramatically. The University began training specialists for the careers in landscape architecture, glass and glass ceramics production, construction and fine functional ceramics, chemical sources of current and functional elec-

troplating, polymer and mould products design, engineering and medical bindings, basic organic and petrochemical synthesis, paintwork materials, industrial ecology, bio-ecology, certification, automation of technological processes, biotechnology of energy carriers, enzymes and fermentation technologies, fine organic synthesis, medicines, perfumery and cosmetics, information systems and technologies, printing industry, data processing and publishing, management, marketing, tourism and nature management, etc.

The Belarusian State Technological University was granted the status of a leading higher educational institution of the CIS in the fields of forestry and forest industry.

In 2011 the BSTU was accredited as research organization and became a member of Belarusian-Kazakhstan educational-scientific consortium.

In 2012 the University was reorganized into an educational, research and production centre in line with lifelong learning principles. Thus, in March 2013, five colleges (Polotsk State Forestry College, Vitebsk State Technological College, Gomel State Polytechnic College, Bobruisk State Forestry College, and Belarusian State College of construction materials industry) were affiliated to the University as separate subdivisions.

The University was awarded the Honorary State Banner of the Republic of Belarus in 2010 for its outstanding sociocultural achievements and long-lasting traditions of training highly qualified personnel and in connection with the 80th anniversary of the foundation of BSTU.

According to the results of the years 2013, 2014 the University was awarded the Honorary Diplomas of the Ministry of Education of the Republic of Belarus as the best University in the nominations "For high performance in the training of highly qualified scientific personnel" and "Ensuring a high-quality educational process, training of highly qualified specialists".

IV. Answer the following questions.

1. Where and when did the early history of the University start? 2. When were the first Forestry faculties established? 3. Where and when was the official opening of the Forestry Institute held? 4. What task did this new technical institution of higher education face? 5. When was

the Institute renamed? 6. Why was the Institute evacuated to the city of Sverdlovsk? 7. What caused the reformation of the University? 8. How did the real flourishing of the Technological Institute start at the end of the 80s? 9. When was the Institute reorganized into the University? 10. What specialists did the University begin training? 11. What fields of industries was the University recognized to be a leading higher educational institution? 12. Why were five colleges affiliated to the University as separate subdivisions?

V. Complete each sentence using a word derivationally related to the word given in brackets.

1. The University researchers (contribution) to over 230 projects within 35 national and international scientific and technical programs. 2. More than 400 enterprises and (organize) cooperate with the Technological University. 3. Breakthrough to the world markets of advanced technology production is only provided with state-of-the-art high-tech (equip). 4. The University departments are equipped with modern (science) tools. 5. Our students are (active) involved into research work. 6. Many graduation projects made by BSTU students propose innovative (solve) which are then applied by national enterprises. 7. Being the University students they are (inspiration) to join various research associations, design studios and laboratories. 8. Special attention is paid to practical (train) of students. 9. The Belarusian State Technological University (cooperation) with leading enterprises, institutions and organizations, opened 20 affiliates of the departments in leading enterprises of the country. 10. Over 870 national enterprises, organizations and agencies (annual) welcome students for short-term and long-term practical training.

VI. Complete the sentences with the correct preposition where necessary.

1. Forestry faculties were established ... 1919 ... the Agricultural Institute. 2. This new technical institution ... higher education faced the task of training engineering personnel ... forestry, forest and woodworking industries. 3. In 1934 the Forestry Institute was renamed ... the Belarusian Forestry Engineering Institute. 4. In 1941 the Institute was evacuated ... the city of Sverdlovsk. 5. Its reformation in 1961 into the Belarusian Technological Institute was inspired ... an intensive devel-

opment of the Republic's chemical industry. 6. It started training engineers ... chemical industries. 7. Real flourishing of the Technological Institute was brought ... by intensive development of science. 8. In 1993 the Government of the Republic of Belarus granted ... the Institute with the university status. 9. BSTU was granted the status ... a basic higher educational institution of the CIS in the fields of forestry and forest industry. 10. In 2012 the University was reorganized ... an educational, research and production centre.

VII. Read the text again and mark the sentences T (true), F (false), or DS (doesn't say).

1. Forestry faculties were established in Brest. 2. This new technical institution trained engineering personnel for forestry, forest and woodworking industries. 3. In 1954 the Forestry Institute was renamed into the Belarusian Forestry Engineering Institute and was given the name of S. M. Kirov. 4. In 1941 the Institute was evacuated to the city of Moscow. 5. In August 1946 the Institute was transferred to Minsk. 6. Its reformation in 1961 into the Belarusian Technological Institute was inspired by an intensive development of the Republic's forestry industry. 7. Real flourishing of the Technological Institute started at the end of the 70s. 8. In 1993 the Government of the Republic of Belarus granted the Institute with the university status. 9. Today the University is recognized in the Republic of Belarus as a leading higher educational institution in the fields of forestry, chemical and printing industries. 10. In 2010 seven colleges were affiliated to the University as separate subdivisions.

VIII. Express the same in English.

1. Белорусский государственный технологический университет – это современный и динамично развивающийся учебный, научно-производственный центр нашей страны. 2. БГТУ был основан на базе Белорусской сельскохозяйственной академии в Горках. 3. В связи с быстрым развитием промышленности возникла острая потребность в высококвалифицированных специалистах. 4. Кафедры университета оснащены современным оборудованием. 5. Студенты занимаются научной и исследовательской работой. 6. Каждый год аспиранты и студенты выезжают за границу для участия в международных научно-технических мероприятиях.

IX. The delegation from Cambridge is going to visit our University. You are responsible for the organization of excursion.

a) Try to make a plan of your excursion. Write some points.

b) Give a tour around our University. Answer all questions of visitors.

X. Put the article if it is necessary.

1. Do you play … piano? 2. There is … big black piano in our living room. 3. … Boys like to play … football. 4. He is … wonderful teacher. He teaches … English. 5. My brother is … programmer. He lives in … center of … city. 6. We live in … St. Petersburg. It is one of … largest cities in … world. 7. In … fifteenth century people knew only 3 continents: … Europe, … Asia and … Africa. 8. … Pacific Ocean is one of … biggest oceans on … planet. 9. Look at … sky! It is covered with … dark clouds. 10. When we came … home, we had … supper and went to … bed at once.

XI. Put *little*, *few*, *much* or *many*.

1. I drink … coffee. I don't like it. 2. I have … time so I can't go with you. 3. There are very … people who don't know the Earth is round. 4. She ate so … ice cream that she is going to have a sore throat. 5. His father didn't earn … money, but he enjoyed his job. He loved teaching English very … .

VOCABULARY STUDY

Nouns and noun phrases
Curriculum – цикл, программа занятий; competency-based approach – компетентностный подход; teaching aid – учебное пособие; vocational school – профессионально-техническое училище; reduced-attendance education – обучение по сокращенной программе; collaboration – сотрудничество; employment assistance – помощь в трудоустройстве; on-site training – обучение на месте; tutorial – учебник; internships – дипломная практика; maintenance – эксплуатация; applicant – абитуриент; graduate – выпускник; affiliation – филиал, подразделение; Master's degree program – курс магистратуры; findings – результаты исследования; sustainability – устойчивость развития; fertilizer – удобрение; impact – воздействие,

влияние; durability – прочность, выносливость; medicinal drugs – медицинские препараты; abstract – резюме; recognition – признание; cardboard – картон; binding materials – вяжущие материалы; rubber – резина; scope – диапазон, кругозор, сфера.

Adjectives

Up-to-date – современный; state-of-the-art – современный; major – главный, основной; exploitable – пригодный к использованию; resource-saving –ресурсосберегающий; multipurpose – многоцелевой; diverse – разнообразный.

Verbs and adverbs

To carry out – проводить, выполнять; to apply for – обращаться, просить, подавать заявление; to pursue a career – выбирать специальность; to set out – задаваться целью, собираться что-либо делать; to embrace – охватывать; to conduct – проводить; to host – размещать; to focus on – сосредотачиваться на чем-либо; currently – в настоящее время.

I. Match the words to their definitions.

Master's degree, applicant, curriculum, internship, reputable, to carry out, to affiliate, to conduct, tutorial, annually.

1. Occurring or happening every year or once a year.

2. To bring to a successful issue; to put into execution; to continue to an end or stopping point.

3. A paper, book, film, or computer program that provides practical information about a specific subject.

4. To bring or receive into close connection as a member or branch.

5. To lead from a position of command; to direct or take part in the operation or management of.

6. A degree that is given to a student by a college or university usually after one or two years of additional study following a bachelor's degree.

7. Someone who formally asks for something (such as a job or admission to a college).

8. Respected and trusted by most people; having a good reputation.

9. A program for a student or recent graduate who works for a period of time at a job in order to get experience.

10. A set of courses constituting an area of specialization.

II. Choose the answer (A, B, C, or D) that best fits each space.

1. Annually our lectures, researchers and students are actively … in international events. 2. The Wi-Fi-based Internet access is … in the student reading room. 3. Over the years 2013-2015 the University took part in a trilateral education … project "Summer Academy". 4. The strongest … are maintained with some international Universities. 5. The University … to about 1,000 volumes of more than 480 publications. 6. 16 research and education schools of national, CIS and international recognition … and are operating at the University. 7. International cooperation is … the top priorities of the University activities. 8. Dynamic international cooperation is a … for ensuring the sustainability and quality of teaching and research. 9. The journal "Proceedings of BSTU" … contributions in Russian, Belarusian and English by international scholar community. 10. Belarusian State Technological University houses 5 PhD … Councils.

A	B	C	D
engage	take part	involved	participate
accessible	responsible	available	able
environmental	research	scientific	practical
relationships	partnerships	internships	friendship
issues	publishes	subscribes	reviews
were established	established	have been established	have been
among	between	in	over
duty	prerequisite	reason	cause
welcomes	supports	sends	receives
state	certification	committee	foreign

III. Read and translate the text.

Text B. Academic and Scientific Work

Academic and educational work at the University is carried out within the following main lines: development of new curricula; new forms of teaching process organization, including individual work of students; teaching process support with necessary resources, textbooks and teaching aids, multimedia; IT-based teaching, etc.

Being the leading educational institution in the fields of forestry, chemical and printing industries, the University uses innovative competency-based approach to teaching in accordance with up-to-date conceptual model.

Graduates of vocational schools and colleges have an opportunity to apply for reduced-attendance education, having a choice of 11 graduate programs.

The university-industry collaboration embraces a wide scope of activities, i.e. employment assistance, internships and on-site training, course and graduation projects, professional development of teaching staff, external expertise of curricula and educational standards, guest lecturing, interactive learning, etc.

The University houses 10 faculties, the Institute for retraining and professional development, 53 departments, 20 affiliated departments, 5 affiliated colleges, affiliated forestry experimental station in Negoreloe.

The head of the University is the Rector (Igor Vital'evich Voitov) and 5 Deputy Rectors. There are Forestry Faculty; Faculty of Forest Engineering, Material Science and Design; Organic Substances Technology Faculty; Chemical Technology and Engineering Faculty; Faculty of Print Technology and Media Communications; Economic Engineering Faculty; Faculty of Information Technology; Faculty of Extra Mural Studies; Faculty of Pre-University Training; Faculty of Social Professions. There is a special Dean's Office for International Students. Nearly 680 university academic staff and researchers support 9,000 enrolled students. About 73% of the university academic staff holds scientific ranks and degrees. Nowadays the BSTU can boast over 9,000 students, 6,000 are full-time students and the other 3,000 are extramural, MSc and PhD students.

The teaching process at the University is organized in the following way. The academic year is divided into two terms. During the terms students attend lectures and carry out laboratory and practical work. At the end of each term students pass credit tests and sit exams. The course of studies lasts 4-5 years. At the end of the course of studies, students sit the State Examination and defend Diploma paper (project).

Over 980 academic disciplines of higher education and 410 vocational disciplines are taught at the University. The teaching process at the University and its affiliated colleges is supported by comprehensive textbooks, manuals, tutorials. Electronic teaching resources make best use of the current achievements in science and technology as well as modern trends of teaching.

Classes are conducted in seven academic buildings, at the six affiliations of the University. Annually our lecturers, researchers and students are actively involved in international events. They carry out research and develop innovative technologies in close collaboration with their international partners. Students and professors participate in such international programs as Erasmus + , Horizon 2020, Baltic Sea Region, etc. Every year the University hosts international scientific conferences and symposia. Hi-tech innovative achievements of our researchers are presented at numerous international exhibitions and fairs.

The BSTU research activities are supported by various scientific units. There is a Centre for Physical and Chemical Investigation Methods with integrated laboratories: particle size and surface area analysis laboratory; atomic-absorption spectroscopy laboratory; chromatography and mass-spectroscopy laboratory; thermal analysis laboratory; scanning electron microscopy laboratory; X-ray diffraction analysis laboratory; transmission electron microscopy laboratory.

There are also R&D laboratories of design, construction and maintenance of forest roads; forest protection; manufacturing processes of woodworking and furniture design; glass and glass-type materials; nano-fibres technology, etc.

There are testing centers for environmental control; for woodworking equipment and tools; for food quality control.

The main trends in research are forest regeneration; ecological tourism and nature management; logging technology; mechanics and technology of disperse and composite materials; genetic engineering and genetically modified organisms; synthesis of organic and inorganic

substances; nanomaterials and nanotechnologies; technologies for electrochemical production; polymers, etc.

The University scholars are active participants of scientific and technical programs of various scope. For instance, over the last years they have contributed to different national and regional research and technical projects. The Belarusian State Technological University has been the leading partner of national research and technical program "Forests of Belarus – Productivity, Sustainability, Efficiency", subprogram "Electroplating Technology and Equipment" of national research program "Mechanics, Technical Diagnosis, Metallurgy". Currently the University is a partner of the state research and technical program "Monitoring", international Belarusian-Lithuanian program, Belarusian-Kazakhstan research and educational consortium, etc. The University researchers collaborate with over 400 international and national partners within commercial research contracts.

The research and education schools of national, CIS and international recognition have been established and are operating at the University. Belarusian State Technological University houses 5 PhD Certification Councils. Annually the University researchers publish over 2,500 papers and abstracts. Scientific journal "Proceedings of BSTU" has been included into the list of scientific periodicals of the Republic of Belarus authorized to publish the results of thesis research and into Russian Science Quotation Index. The journal is published annually and welcomes contributions in Russian, Belarusian and English by international scholar community. Only for the past 5 years the University has been received more than 240 patents for inventions and useful models, 117 PhD and doctoral theses have been defended, 67 monographs, 663 textbooks and tutorials have been published at the University. Over 88 international and republican conferences have been hosted by the BSTU.

International cooperation is among the top priorities of the University activities, having old and well-established traditions of international networking.

Belarusian State Technological University is engaged in collaborative projects and partnerships all over the world.

The University holds over 150 bilateral cooperation agreements with educational and research institutions from 32 countries worldwide. The strongest partnerships are maintained with the following universities: Vilnius Gediminas Technical University (Lithuania), D. Mendele-

yev University of Chemical Technology of Russia (Russia), Saint-Petersburg State Chemical and Pharmaceutical Academy (Russia), Saint-Petersburg State Forest Technical University named after S. M. Kirov (Russia), Warsaw University of Life Sciences (Poland), etc.

The University houses a number of international research and innovation centers, i.e. UNESCO-Associated Centre for Chemical Sciences and Education, International Biopharmaceutical Centre, International IT Centre, International Centre for Advanced Materials and Technology.

The University is a full member of several international organizations and networks, i.e. International Centre for Forestry and Forest Industry, European bilateral cooperation agreements Forest Institute, European Real Estate Society, International Association of Research Organizations for the Information, Media and Graphic Arts Industries, Baltic University Program, etc.

The international student community of the BSTU annually totals over 350 students coming from such countries as Turkmenistan, Iran, Iraq, Turkey, Nigeria, China, Sri Lanka, Vietnam, Finland, Czech republic, Mexico, Azerbaijan, Tajikistan, etc.

They are offered a variety of degree programs: over 50 Russian and English-taught graduate programs, 37 Master's degree programs, 35 PhD programs. International applicants can choose to pursue a career in a wide range of industries and services, i.e. forest and woodworking industry, pharmaceutical industry, building materials, landscape architecture, electrochemical industry, power engineering, printing and publishing, tourism and travel, biotechnology, etc.

Apart from the degree programs mentioned above, the international students can attend Russian language and pre-university courses as well as join the professional development programs available at the BSTU. They are welcome to take part in summer language schools, mobility programs and other University events.

Internationalization is an important component of Belarusian State Technological University's strategy, enabling academic staff and students of the university to be globally active and well prepared for future challenges.

IV. Answer the following questions.

1. What academic and educational work at the University is carried out? 2. Why does the University use the innovative competency-based approach to teaching? 3. What activities does the university-industry collaboration embrace? 4. What disciplines are taught at the University? 5. What international events and programs do the students and University professors participate in? 6. What countries do international students come from? 7. What institutions are the University partners of the state research and technical programs? 8. What conferences have been hosted by BSTU? 9. How many research and education schools of national, CIS and international recognition have been established and are operating at the University? 10. How many PhD and doctoral theses have been defended at the University?

V. Read the text again and mark the sentences T (true), F (false), or DS (doesn't say).

1. The University uses innovative communicative approach to teaching in accordance with up-to-date conceptual model. 2. Graduates of vocational schools and colleges have an opportunity to apply for Master's degree programs. 3. The university-industry collaboration embraces employment assistance, internships and on-site training, etc. 4. The teaching process at the University is supported by electronic teaching resources. 5. Classes are conducted in five academic buildings. 6. Every year the University hosts international scientific conferences and symposia. 7. The University is engaged in local scientific projects. 8. The strongest partnerships are maintained with American and Asian universities.

VI. Complete the sentences with the correct preposition where necessary.

1. Academic and educational work at the University is carried out … some major lines. 2. The University uses innovative competency-based approach … teaching in accordance with up-to-date conceptual model. 3. Graduates of vocational schools and colleges may apply … reduced-attendance education. 4. The teaching process at the University is supported … comprehensive textbooks, manuals, tutorials. 5. Classes are conducted … seven academic buildings. 6. The Universi-

ty researchers and students are actively involved … international events. 7. There is a Centre … Physical and Chemical Investigation Methods with integrated laboratories. 8. The University is engaged … collaborative projects and partnerships all over the world. 9. The University focuses … the cooperation strategies of interuniversity cooperation agreements, visit-lecturing, etc.

VII. Match the sentence halves.

1. Research and training laboratories are equipped	a) advanced training and retraining of teaching staff.
2. The teaching process incorporates	b) an opportunity to apply for reduced-attendance education.
3. The University houses	c) multimedia technology based on simulated manufacturing facilities.
4. BSTU regularly hosts	d) welcome the University students to get valuable hands-on experience in their chosen career field.
5. Research work of students is	e) 42 lecture halls, more than 300 laboratories, 120 classrooms equipped with multimedia facilities.
6. Graduates of vocational schools and colleges have	f) with unique state-of-the art facilities containing modern software to simulate engineering processes.
7. BSTU maintains a system of	g) are taught at the University.
8. Over 870 national leading enterprises and organizations	h) evaluating new ideas and their viabilities.
9. Over 980 academic disciplines of higher education and 410 vocational disciplines	i) an indispensable and efficient part of training highly-qualified engineers for chemical industry.
10. Students activities are aimed at	j) academic conferences that serve as a discussion platform to university teaching staff.

VIII. Complete each sentence using a word derivationally related to the word given in brackets.

1. International cooperation is among the top (prior) of the University activities. 2. Dynamic international cooperation is a prerequisite for ensuring the (sustainable) and quality of teaching and research. 3. The

BSTU is actively (engagement) in collaborative projects and partnerships all over the world. 4. The strongest partnerships are (maintenance) with some international Universities. 5. Over the last years the University took part in a trilateral education (environment) project "Summer Academy". 6. The University runs a (distance) learning master's degree program. 7. At the current stage of its development the BSTU supports the following key (strategy) initiatives on internationalization. 8. The Wi-Fi-based Internet access is (availability) in the student reading room. 9. The University (subscriber) to about 1,000 volumes of more than 480 publications. 10. The electronic library system is (creative) by the library staff.

IX. Match the sentence halves.

1. The University researchers collaborate with	a) publish over 2,500 papers and abstracts.
2. Belarusian State Technological University has been	b) developed by the University is highly diverse.
3. Belarusian State Technological University houses	c) high quality, exploitable research.
4. Over 88 international and republican	d) with some international Universities.
5. BSTU is a major scientific and research centre	e) over 400 international and national partners within commercial research contracts.
6. Annually the University researchers	f) involved in international events.
7. The University focuses on	g) conferences have been hosted by BSTU.
8. The scope of research trends	h) 5 PhD Certification Councils.
9. The strongest partnerships are maintained	i) the leading partner of national research and technical programs.
10. Our lectures, researchers and students are actively	j) actively developing fundamental and applied research trends.

X. Work in groups. Develop the project "The University of future". Share your ideas with your groupmates.

UNIT II

STUDENT LIFE

VOCABULARY STUDY

Nouns and noun phrases

Dormitory – общежитие; overall diversity – всеобщее разнообразие; visual and performing art groups – художественные коллективы; choir – хор; wrestling – рукопашный бой; eurhythmics – ритмическая гимнастика; needlewoman – рукодельница, искусница; unarmed combat – рукопашный бой, самбо; running track – беговая дорожка; weight lifting – тяжелая атлетика; volunteering network – волонтерская сеть, добровольная организация; reciting – декламация, чтение вслух.

Adjectives

Incredible – невероятный; compassionate – благотворительный, сочувствующий; comprehensive – всеохватывающий; minor – миноритарный, малый, в меньшинстве; literary – литературный.

Verbs

To gain experiences – приобретать умения, опыт; to enrich – обогащать; to enhance – усиливать, увеличивать; to edit – редактировать; to promote – продвигать, способствовать; to reveal – раскрывать; to collaborate – сотрудничать.

I. Match the words to their definitions.

Dormitory, treatment, minor, wrestling, to enhance, to edit, compassionate, pantomime, contest, campus.

1. A sport or contest in which unarmed individuals struggle hand to hand with each attempting to subdue or unbalance the other.

2. To prepare (something, such as literary material) for publication or public presentation.

3. Feeling or showing concern for someone who is sick, hurt, poor, etc. having or showing compassion.

4. A residence hall providing rooms for individuals or for groups usually without private baths.

5. Any of various dramatic or dancing performances in which a story is told by expressive bodily or facial movements of the performers.

6. A competition in which each contestant performs without direct contact with or interference from competitors.

7. The techniques or actions customarily applied in a specified situation; medical or surgical care.

8. To increase or improve in value, quality, desirability, or attractiveness.

9. The grounds and buildings of a university, college, or school; a university, college, or school viewed as an academic, social, or spiritual entity.

10. Inferior in importance, size, or degree: comparatively unimportant.

A. TEXT STUDY

II. Read and translate the following text.

Text A. Student Life

Student life is the most exciting and challenging time for students to explore new horizons and set a course for the future. The Belarusian State Technological University gives the chance to make new friends and enjoy new hobbies or sports, to explore opportunities and gain experiences that can change your life.

The student campus houses five dormitories where students can rest and study. The dormitories are conveniently located within a walking distance from the University's academic buildings and provide excellent opportunities to feel part of the community the students are joining. All rooms are equipped with modern furniture and facilities. Student Councils are responsible for social and cultural and educational activities of students. The BSTU students are engaged in multiple interests. The student organizations in campus enrich the social, cultural, and educational experiences of students. Representatives in student government collaborate with university leaders to enhance the student experience. Student journalists write, edit and produce multimedia content for campus publications. Students interested in the arts participate in a variety of visual and performing art groups, dance groups, choirs, student theatre. Various festivals such as "Student Spring", "Student

Autumn", "Mother's Day", contests, meetings, discotheques, sport events in six kinds of sports are arranged at the dormitories. Students go in for football, volleyball, basketball and other sports. Exhibitions of creative students' works are annually held at the student campus. There are international club "Unity" and a room for social activities at the campus; students can develop their creative individual abilities in such groups as "Magical Needles", "Needlewoman", "Do It Yourself", "Golden Boat", "Hostess", the club of decorative arts, etc.

It's hard to imagine student life without sport. One of the conditions for harmonious development of personality is physical training, promoting a healthy lifestyle, which the University pays great attention to. The University possesses a modern sports complex with a gym for team sports, wrestling, eurhythmics and aerobics, medical gymnastics, as well as a stadium with running tracks, football grounds, 2 tennis-courts, basketball and 4 volleyball-courts with synthetic covering. Among the BSTU students there are winners of the international competitions and world championships.

The University teams in chess, arm-wrestling, weight lifting have repeatedly become prize winners of national student competitions. Tourist club, football fan club, fitness club "Technologist" providing students with facilities for athletic training and aerobics function at the University. Interfaculty competitions in various kinds of sport are held at the University annually. University sport club comprises such sport groups as: swimming, athletics, tourism, football, unarmed combat, Greco-Roman wrestling, sambo, karate, judo, volleyball, table tennis, basketball, arm-wrestling, and weight lifting.

Students show their organizational and creative skills in the activities of the primary organization of the Belarusian National Youth Union. The Student Union organizes numerous events for students every year; they invite students to experience new places and countries, to join students' volunteering network and to engage in various activities.

Such amateur groups as prize winner of many international art festivals "Roon", winner of national festivals folk student theatre "Kolokol", professor vocal group "Akavita", folk instrumental orchestra, vocal-instrumental group, dance group "Gratsiya", vocal studios, minor theatrical groups, artistic reciting, pantomime enjoy great popularity at the University. Youth student leisure centre unites creative students and helps to reveal their abilities in the club of intellectual games, in artistic groups, social events, discotheques.

The youth information group and a number of volunteer teams are working successfully at the University. Students can reveal their literary abilities in the student club "Vetlitsa". They are active participants of such student associations as "Poshuk", "Pamyat", "Krinitsa", "Milasernasts", "Spadchyna". Their participants win annual prizes at the national and city contests of creative works.

III. Answer the following questions.

1. When do students explore new horizons and set a course for the future? 2. How many dormitories are there at the student campus? 3. Where are the dormitories located? 4. Who is responsible for social, cultural, and educational activities of students? 5. Why do the representatives in student government collaborate with university leaders? 6. What visual and performing art groups do the students participate in? 7. What sports do the students go in for at the University? 8. What sport facilities does the University possess? 9. What activities does the Belarusian National Youth Union organize for the students? 10. What University amateur groups enjoy the greatest popularity? 11. What student associations are promoted at the University?

IV. Complete each sentence using a word derivationally related to the word given in brackets.

1. The dormitories are conveniently located within a (walk) distance from the University's academic buildings. 2. All rooms are (equipment) with modern furniture and facilities. 3. Student Councils are (responsibility) for social and cultural and educational activities. 4. The BSTU students possess the (able) to engage in multiple interests. 5. Representatives in student government (collaboration) with university leaders. 6. Exhibitions of (creativity) students' works are annually held at the student campus. 7. It is hard to (imagination) student life without sport. 8. Interfaculty (compete) in various kinds of sport are held at the University annually. 9. The Student Union (organization) numerous events for students every year.

V. Read the text again and mark the sentences T (true), F (false), or DS (doesn't say).

1. The University gives the chance to make new friends and enjoy new hobbies or sports, to explore opportunities and gain experi-

ences that can lengthen your life. 2. The student campus houses five hotels where students can rest and study. 3. All hostel rooms are equipped with modern furniture and facilities. 4. The students organizations found on campus decrease the social, cultural, and educational experiences of students. 5. Student journalists are paid for multimedia content for campus publications. 6. Students who are interested in sports participate in a variety of visual and performing art groups. 7. Students go in for football, volleyball, basketball and other sports. 8. Exhibitions of creative students' works are annually held at the international forums. 9. Students show their organizational and creative skills in the activities of the primary organization of the National Socialist Party. 10. The University also runs its own Health Centre providing a wide range of professional, friendly and compassionate medical services to city pensioners.

VI. Match the sentence halves.

1. The dormitories are conveniently located

2. BSTU students possess the ability

3. It's hard to imagine

4. The student campus houses five dormitories

5. Exhibitions of creative students' works

6. Student Councils are responsible for

7. Representatives in student government collaborate

8) Interfaculty competitions in various kinds of sport

9. The youth information group and a number of volunteer teams

10. All rooms are equipped

a) with modern furniture and facilities.

b) with university leaders to enhance the student experience.

c) social and cultural and educational activities of students;

d) are working successfully at the University.

e) are held at the University annually.

f) within a walking distance from the University's academic buildings.

g) are annually held at the student campus.

h) student life without sport.

i) where students can rest and study.

j) to engage in multiple interests.

VII. Open the brackets, using the proper form of adjective.

1. He plays *(good)* than everybody else in the team. 2. The Belarusian State Economic University is by far *(prestigious)* university training economists in Belarus. 3. Korea is one of *(fast)* developing countries in the world. 4. Birmingham is the second *(large)* cities in the world. 5. I'll be even *(annoyed)* if you do that again. 6. I really think that apologizing is *(little)* you can do. 7. There is *(many and many)* investment in China every year. 8. He is practically *(clever)* man I have ever met. 9. He is *(young)* person ever to swim across the Channel. 10. 'Are you looking for a cheap holiday?' 'Yes, *(cheap) (good)*'.

VIII. Translate into English.

1. Это очень легкая задача. Дайте мне более сложную задачу. 2. 22 июня – самый длинный день в году. 3. Твое платье, конечно, очень красивое, но мое платье красивее. 4. Моя учительница английского языка – самый энергичный человек. 5. Она купила часы в Швейцарии, потому что считает, что швейцарские часы самые точные. 6. Тот телевизионный фильм гораздо хуже, чем сегодняшний. 7. Какая самая смешная телевизионная программа? 8. Грамматика английского языка трудная, но английское произношение труднее. 9. Крым – одно из самых лучших мест для отдыха. 10. Сегодня он чувствует себя гораздо лучше.

UNIT III

SCIENCE AND TECHNOLOGY

VOCABULARY STUDY

Nouns and noun phrases

Science – наука; research – исследование; AD (Anno Domini) – нашей эры; helicopter – вертолет; motion – движение; acceleration – ускорение; engine – двигатель; wisdom – мудрость, здравый смысл; substance – вещество; matter – материя, вещество; equation – уравнение; dimension – измерение, объем, величина; ripple – пульсация; conscience – осознание; parchment – пергамент; merchant – торговец; printing press – печатный станок; demand – спрос; for earning – для заработка; iron – утюг; judgement – суждение, мнение, наказание; curvature – искривление, изгиб.

Verbs

To jump to conclusions – делать поспешные выводы; to explore – исследовать, изучать; to discover – открывать; to invent – изобретать; to try one's hand – пробовать силы; to collide – сталкиваться; to perceive – воспринимать, осознавать, чувствовать; to demand – требовать, нуждаться; to ripple – рябить.

Adjectives

Mutual – совместный, общий; comprehensive – обширный, обстоятельный, исчерпывающий.

I. Say whose invention or discovery it is.

1.Galileo Galilej	a) paper
2.Michael Faraday	b) thermometer and microscope
3.Johann Gregor Mendel	c) X-ray
4.Isaac Newton	d) theory of relativity
5.Albert Einstein	e) law of universal gravity
6.Wilhelm Konrad Roentgen	f) diesel engine
7.Alexander Bell	g) vaccines against cholera
8.Alexander Popov	h) telephone
9.Louis Pasteur	i) table of chemical elements

10.John Logie Baird   j) conditional reflexes
11.Rudolf Engine   k) laws of heredity
12.Marie Curie   l) radium
13.Dmitry Mendeleev   m) electromagnetic induction
14.Ts'ai Lun   n) radio
15.Ivan Pavlov   o) television

A. TEXT STUDY

II. Read and translate the following text.

Text A. Science

Modern civilization is everything that has been achieved thanks to science. We can't but agree that science is very important and that it develops our world. But what is science? Science is systemized knowledge derived through experimentation, observation, and study. In its widest sense it is formulated knowledge, knowledge of structure, laws, and operations. The unity of human knowledge may be artificially divided into religion, philosophy, and science. Sometimes it is considered as a method of learning the world by applying the principles of the scientific method, which includes making empirical observation, proposing hypotheses to explain those observations, and testing those hypotheses in valid and reliable ways; also refers to the organized body of knowledge that results from scientific study. The scientists are more interested in doing scientific work than in defining it. We say that the work is unscientific if it is inexact, badly arranged and jumps to conclusions without evidence. In their work scientists use different methods, techniques and approaches. They build up theories, perform experiments, explore, carry out researches, discover and invent.

Every human being possesses two strong impulses: to create and to explore. That is why people have always explored, created and invented something. But there are major inventions and discoveries which have changed our life completely. Among the earliest inventions we can't but mention the invention of the early steam engine by Hero of Alexandria in AD 100; the invention of paper by the Chinese in AD 105.

The seventeenth century saw the development of scientific thinking on entirely new scale. Scientific ideas were tested by experiments. Isaac Newton developed the theory of Gravity in 1687. The discovery

of blood circulation and its mechanism by William Harvey, Robert Boyle and Robert Hooke in 1628 led to great advances in medicine and in the study of the human body.

The nineteenth and twentieth centuries are notable for the discoveries and inventions which were a real breakthrough in the world science. Among them are the discovery of the law of chemical elements by Dmitry Mendeleev in 1869; of the invention of the telephone by Alexander Bell in 1876; the invention of the electric light bulb by Thomas Edison in 1879; the invention of a petrol driven car by Karl Benz in 1885; the discovery of radium made by Marie Curie in 1911; the invention of radio by Alexander Popov; the first practical helicopter built up by Igor Sikorski; the invention of television in 1926; the discovery of penicillin by Alexander Fleming in 1928; the discovery of nuclear fission by Lise Meitner in 1939 and many others.

B. TEXT STUDY

III. Read and translate the following text. Try to continue the list of famous inventions and their inventors.

Text B. Inventions of the 20th Century

The Invention of the Telephone

The telephone is one of the most important inventions of the 19th century. Its creator was the English scientist Alexander Graham Bell.

Bell wanted to be a teacher and entered Edinburgh University. But he changed his mind and became a student of the Medical Faculty of London University. Under the guidance of an outstanding German scientist who works on physiology of sight and ear, Bell began to study the human organs of articulation.

By and by Bell came to the idea of creating a special apparatus which would help the deaf to pronounce the sounds of speech and learn to speak. Working on such an apparatus, Bell invented microphone (with engineer Thomas Watson) and telephone. At first his invention was not popular with the public, but Bell visited American towns and other countries, read lectures and demonstrated his telephone.

In 1878 he also organized his own company to produce telephones. But Bell wasn't interested in business itself and used his money on the laboratories for generating new ideas. He was and is greatly respected both in England and America.

The Invention of the Television

The television is a mass media that serves to give people opportunities both for entertainment and for rapid information.

The idea of a machine able to broadcast both sound and vision goes back to 1875. But it wasn't until 1926 that a Scottish engineer (John Braid) turned the idea into a practical reality. The first pictures were black and white and were not very clear.

Early TV sets cost as much as a small car and few people bought them. In 1936 the original system was improved and the first regular TV program was broadcast in Britain.

But the real TV revolution began in America after World War Two. Commercial stations began to open in almost every city. But still lots of people didn't have TV sets as they were too expensive. That all changed in the 60s and 70s when more and more TV sets were sold and the importance of television grew quickly. In 1980 there appeared satellite television. Dozens of new channels are now available to anyone who buys a receiving "dish".

The Invention of the Computer

One more important invention of our century is the computer. The first computer was invented by the English scientist Charles Babbage.

Nowadays nearly everything we do in the modern world is helped and controlled by computers. Computers are used so often because they are more efficient than human beings. They have better memories and can store a lot of information.

In fact, computers can do what we can do but faster and better. They can control different machines, foretell tomorrow's weather, even play chess and compose music. Computers are widely used in various professions. We can find computers everywhere: in a library, in a travel agency, in a hotel, in a shop and in many other places.

To be sure, the technical progress will not stop but the machines will not be able to substitute everything including the human being.

The Invention of the Mobile (cellular) Phone

Modern mobile phone provides a lot of services, from being able to message anyone to immediate access to the internet. This convenience is one of the reasons why we use mobile phone every day and sometimes cannot imagine our life without it. However, we do not know that the name of the inventor of the first cellular phone, the talented American engineer Martin Cooper.

The first cellular phone was the father of the mobile phone. It was the telephone device that could be used while being mobile, i.e. without the standard cord attached to it. The first cellular phone was called DynaTac 8000X by Motorola as it was created in Motorola company.

Martin Cooper, was born in Chicago on the 26th of December, 1928. He graduated from Illinois Institute of Technology in the early 50s and worked in the electronic industry. Throughout his career he was awarded multiple patents for his work.

Among different inventions in mobile technology, the invention of a cell phone was the most significant one. Doctor Martin Cooper made it, while he was working for Motorola (1973). At that time the demand for such devices was very high and he was among many other people who were trying to create a similar type of mobile device.

The first cellular phone was named DynaTac 8000X by Motorola. It looked nothing like what we're used to now – it was 10 inches long and weighed more than 2 pounds.

The fame of inventing first smartphone is attributed to Andy Rubin. He created and developed the very first Android system, which is now used in 80% of the world's smartphones. Smartphones are noted for their ability to function in similar ways to a computer, and some of them are just as powerful.

The Motorola company invested 100 million dollars in the next 20 years into research and development of the first cell phone. And yes! The first commercial mobile phone was launched in 1983 by Motorola for around 4,000 US dollars.

Omitting the process of the mobile phone evolution, let's say a few words about iPhones. These advanced devices have touchscreen technology, a good quality camera, and 3G network capabilities. They were launched into the market in 2007.

Since 1973, mobile phone technology and networks have come a long way and though Martin Cooper was the man who initially invented the cell phone, there are a lot of other inventors that played a crucial role in the cell phone's creation.

Joel Engel, the main rival of Martin Cooper, who worked in the company called Bell Labs. Bell Labs and Motorola companies were in serious competition to manufacture mobile devices. Motorola won the tech war and the first mobile phone was named as DynaTac 8000X by Motorola.

The most famous scientists and their inventions (discoveries) in Britain, America and Russia

Isaak Newton (an English scientist) who lived in the 17th century is the founder of modern mathematics, physics and spectography. Newton discovered the law of motion and the universal law of gravitation.

Michel Faraday (an English scientist) who lived in the 19th century made a name for himself in the history of electricity. Faraday made the machine which was the father of all the great machines that make electricity today. Also Faraday was the creator of the electric motor, which changed the face of the earth.

Thomas Edison (an American inventor) who lived in the period between 1847-1931 became world- famous for the invention of light bulb and the way of sending electricity to distant places. He is also famous for early microphone, record player and equipment for the cinema, telegraph and telephone.

The most prominent Russian scientists (engineers) and their inventions are:

1. Mikhail Lomonosov who invented the telescope which helped him to study Venus and made a lot of achievements in astronomy and mineralogy;

2. Dmitry Mendeleev who created the periodic table of elements;

3. Ivan Pavlov who studied conditioned reflexes in animals;

4. Konstantin Tsiolkovsky who created the theory of space flight;

5. Sergei Korolyov who designed the intercontinental missile, Sputnik satellite, and Vostok spacecraft;

6. Igor Kurchatov who made a lot of inventions in nuclear physics;

7. Andrei Sakharov who invented the hydrogen bomb.

IV. Answer the following questions. Make up other questions to all the parts of the text.

1. What is the definition of science? 2. What are the main discoveries of the 19th and 20th centuries? 3. What are the main Newton's inventions? 4. What are the most important inventions made by Einstein? 6. What physical laws did Newton formulate? 7. Who is the creator of computer? 8. What company was the first to create a cellular phone? 9. What invention did A. Sakharov make? 10. What did Faraday make?

V. Match the words with their definitions.

Science, physics, to accelerate, accelerate, gravity, galaxy, meantime, energy, theory, research.

1. The ability of matter or radiation to do work.
2. Study and investigation to discover facts.
3. The force that attracts bodies towards the center of the earth.
4. A branch of knowledge requiring systematic study and methods.
5. A system of stars, esp. the one containing the sun and the earth.
6. To increase the speed.
7. Forward or onward movement; development.
8. A set of ideas formulated to explain something; an opinion.
9. The study of the properties and interactions of matter and energy.
10. In the intervening period; at the same time.

VI. Complete each sentence using a word derivationally related to the word given in brackets.

1. Today, we cannot expect our life without science and technology (revolve) around it every single second. 2. Technology is (extreme) essential in our everyday life, as it has made things simpler, faster and more secure. 3 While science is the study of entire universe from the cellular level to the highest level, technology is the (apply) arising from science. 4. While science involves (explain), phenomenon, analysis and (predict) on various subjects, technology is something that simplifies all these things. 5. Various (contribute) to science and technology have helped us save time and money. 6. (Vary) objects and devices like computers, modes of transport, washing machines or just anything else help us save our time and money. 7. The age in which we live can be (right) called the age of science and technology. 8. The progress of science and technology has made many useful (achieve) in every field of our life. 9. (Dead) weapons like atom and hydrogen bombs, missiles can destroy the whole world in a moment. 10. (Atom) energy can be used (effective) for constructive purposes.

UNIT IV

FAMOUS INVENTORS AND DISCOVERIES

VOCABULARY STUDY

Nouns and noun phrases

Light bulb – лампочка; gas stove – газовая плита; dishwasher – посудомоечная машина; heater – калорифер; windscreen wipers – "дворники"; liquid – жидкость; disposable nappies – одноразовые подгузники; the bullet-proof vest – бронежилет.

Adjectives

Cellular – сотовый; crucial – решающий; efficient – эффективный.

Verbs and adverbs

To be awarded for – быть награжденным за; to be launched – выпустить; to be annoyed – злиться; to store – хранить; to substitute – заменить; incredibly – невероятно.

A. TEXT STUDY

I. Read and translate the following text. What pros and cons of using technologies can you name? What do you think about cloning? Would you like to have your own copy?

Text A. Modern technologies

Technology is an important part of our lives. We use computers and other electric equipment at work and at home. However, some people believe we rely too much on machines, and that the more technology improves, the lazier and weaker humans will become.

Technological advances are changing our lives very rapidly. Nowadays we can't do without such gadgets as mobile phones, PCs, digital tape recorders, air conditioners, fax machines and so on. Many people feel ill at ease without their laptop computers or GPS navigation systems.

Technology facilitates our lives and saves our time. Computers help us do the most difficult sums and investigate complicated data. People do business, communicate and do the shopping via the Internet.

It is much easier to do housework nowadays, thanks to electric equipment such as microwave ovens, washing machines and so on.

However, many people say that technology makes us lazier and weaker. For example, such technological developments as the telephone and the Internet have made communication much easier, but they can cause the loss of social interaction. A lot of people prefer communicating through a keyboard than face to face. That is why people don't meet as often as they did in the past. A lot of people are fond of watching TV and playing computer games. They spend hours in front of the screen. They have no time to read books or to communicate with their friends. They move less, speak less and they even think less. Of course, such way of life does much harm to their health. For example, if people spend much time in front of the screen, they have problems with their eyesight and sleep. They don't go out or exercise, they feel exhausted and depressed. Computer games can cause addiction and make people aggressive. As for mobile phones, they use electromagnetic radiation which can influence our health in a negative way.

The Internet has revolutionized the way people live and work. However, some people think it has more drawbacks than advantages.

The Internet is a great source of information and entertainment for many people. It has made possible new forms of social interaction and has become a major source of leisure.

However, there are still a lot of people who think that the Internet has too many disadvantages. Internet-addiction is a topical problem nowadays. Spending much time in front of the screen becomes a kind of obsession for many people. The symptoms of Internet addiction include sleep deprivation, decreased physical activity and social interaction with others. People who spend most of their time in the virtual world forget about the real one. They neglect their relatives and ruin their families. Besides, there is a lot of rubbish online and you can't always trust what you read on the web.

Internet dating is becoming more and more popular. However, many people say that meeting people online is dangerous.

Nowadays a lot of young people feel that meeting people online is just the same as meeting in a bar. Many of them make friends online and even fall in love with their virtual interlocutors.

Perhaps, it is silly to trust a person you have never seen. You can never be sure that you communicate with the individual whose personal information and photos you see. For example, a «young" boy may turn

out to be a 50-year-old man. Besides, it is very dangerous to give detailed personal information to complete strangers. Your online friend may be a swindler or even a murderer. So meeting such a person in real life may be extremely risky.

On the other hand, some people say that internet dating has many advantages. Firstly, it is easier for shy people to chat through a keyboard than face to face. Secondly, you can search the Internet when you are not busy. Besides, you can talk to lots of people at the same time and you can have several online boyfriends or girlfriends. One can list all his or her romantic requirements and then find exactly what he or she wants.

Artificial intelligence performs quite a lot of jobs nowadays. However, many people are worried about computers doing the same things that people can do.

In the 90s and early 21st century artificial intelligence achieved its greatest success. Today clever machines are taught to think and make decisions. But is it safe that artificial intelligence is invading the world?

Computers and robots are very helpful. There are more and more jobs which humans leave to robots such as exploring another planet, defusing bombs or just doing boring household chores like cleaning. Computers can perform a lot of functions: they can control cars and planes, give us the news or compose music. Many factory jobs are performed by industrial robots nowadays. It has led to cheaper production of various goods, including automobiles and electronics. Artificial intelligence has successfully been used in a wide range of fields including medical diagnosis, stock trading, robot control, law, scientific discovery and toys.

However, there are some reasons to worry about robots. Firstly, the use of robots in industry leads to unemployment as many jobs are performed by machines. Secondly, industrial robots can be dangerous and cause harm to human workers. Besides, many people fear that highly intelligent robots may take over and destroy the human race. There are a lot of books and films about people losing control over clever machines that begin to kill their creators. So, artificial intelligence serves to help people and make their lives easier. That is why we should promote research in artificial intelligence. But people must be careful and pay more attention to security.

People have different attitude to cloning. Some of them think that cloning opens new possibilities, while others are convinced that it is morally unacceptable.

Scientists have always dreamed of reproducing exact copies of animals and even human beings. They have already succeeded in this field and created Dolly, the first cloned sheep, and many other animals. But the question of cloning, especially human one, still remains controversial.

Cloning plants and animals is rather interesting and exciting. Cloned animals may be strong and healthy and they may produce more wool, meat or milk. Besides, cloning will help us preserve species that are on the brink of extinction. Moreover, cloning gives people new medical possibilities. Owing to it, scientists can create organs for transplantation and save people who need a new heart, liver or kidneys.

However, quite a lot of people are against cloning. They say that people must not interfere in the process of creating a new life because it is the duty of nature. What is more, scientists don't know for sure how clones will behave and what diseases they may transmit. As for human cloning, it seems to be dangerous and morally unacceptable.

To sum up, people should continue to develop technology, but they must do it wisely. Otherwise we may regret in the future.

II. Choose the answer (A, B, C, D) that best fits each space.

1. Science makes our lives … . 2. Works can be done easier through high-tech machines and … . 3. It gives less work for … and our job can be done faster. 4. Nowadays, computer is the most useful and popular … to everyone. 5. Through science and technology, it is easier for us … with other people. 6. It is also significant in the field of business because transactions and other events … through the computer. 7. Science is not giving us only the positive side but it … has its disadvantages that truly affect human life. 8. If we look around the surroundings, it is so crowded, polluted and damaged which … mainly by the existence of invented technologies throughout the world. 9. The … style of living is deleted and replaced by modern style of living that destructs our culture and society. 10. World is being run by high-tech machines and innovated equipment that people think it would give us … effects.

A	B	C	D
simply	the simplest	simpler	simple
equipments	equipped	equipping	equipment
humanity	human	humans	humane
invent	inventor	inventive	invention
to communicate	communicative	communicant	communicable
doing	are done	have done	do
because	either	also	too
caused	is caused	causing	to cause
traditionally	traditional	traditionalism	traditionalist
better	the best	more good	good

III. Match the sentence halves.

1. Pure science is   a) physics, mechanics, chemistry, geology etc.
2. Natural science is   b) the scientific study of nature of man.
3. Social science is   c) the scientific study how the bodies of living things work.
4. Biology is   d) the study and treatment of diseases of mind.
5. Botany is   e) related to biology.
6. Physiology is   f) the scientific study of living things.
7. Psychology is   g) related to people 's lives and natures.
8. Psychiatry is   i) the scientific study of plants.
9. Anthropology is   j) considered only for its own nature as a skill or exercise of the mind.
10. Physical sciences include   k) the scientific study of mind and the way it works.

B. TEXT STUDY

IV. Read and translate the following text.

Text B. Inventors-women

When we think of famous inventors we usually think of men, people like Alexander Graham Bell, Thomas Edison, etc. But many of things which make our lives easier today were invented by women.

Let's take the dishwasher for example. This was invented by a woman called Josephine Cochrane in 1886. She was a rich American who gave a lot of dinner parties. But she was annoyed that her servants used to break plates and glasses when they were washing them after the

party. So, Josephine decided to try and invent a machine which could wash a lot of plates and glasses safely. Today the dishwasher is used by millions of people all over the world.

The car was invented by a man, but it was a woman, Mary Anderson, who in 1903 solved one of the biggest problems of driving. Until her invention, it was impossible for drivers to see where they were going when it was raining or snowing. The name of her invention? Windscreen wipers.

A fantastic invention that definitely improved the lives of millions of people was disposable nappies. They were invented by a woman called Marion Donovan in 1950. Anybody who has a small baby knows what a big difference disposable nappies make to our lives. Today more than 55 million nappies are used every day in the world.

A few years later in 1956, Betty Nesmith Graham was working as a secretary. She used to get very frustrated and angry when she made typing mistakes. In those days if you made a mistake you had to get a new sheet of paper and start again from the beginning. She had a brilliant idea, which was to use a white liquid to paint over mistakes. Her invention is called Tipp-Ex today. Mrs. Graham was a divorced mother and her invention made her a very rich woman.

And finally … policemen, soldiers, and politicians all over the world are protected by something which was invented by a woman. In 1966 Stephanie Kwolek invented kevlar, a special material which was very light but incredibly strong, much stronger than metal. This material is used to make the bullet-proof vest. Her invention has probably saved thousands of lives.

V. Complete the sentences with the inventions.

1. … was invented by Josephine Cochrane in 1886.
2. ... was invented by Mary Anderson in 1903.
3. ... was invented by Marion Donovan in 1950.
4. ... was invented by Betty Nesmith Graham in 1956.
5. ... was invented by Stephanie Kwolek in 1966.

VI. Give your viewpoint on the following questions and statements.

1. What do you think of science? Do science and technology do more good than harm, more harm than good, or about equal. 2. The

greatest achievements of medical knowledge and care have improved human happiness. 3. In what way are science, engineering and technology interconnected?

VII. Collect the ideas to help people to change their attitude and behavior.

Discuss what you should do to save energy at home and how to avoid producing too much rubbish. Some of your ideas can be crazy. Remember that inventors were often considered to be crazy when they developed their ideas and explained them to others.

UNIT V

THE WORLD OF IT. IT IN BELARUS

VOCABULARY STUDY

Nouns and noun phrases

Income – доход, прибыль; pinnacle – высшая точка, апофеоз; real estate – недвижимость; commitment – прилежание, профессиональный интерес, самоотверженность; coincidence – совпадение, случайность; Bachelor's degree – степень бакалавра; edge – край, верхушка; dedication – самоотдача, вовлеченность.

Adjectives

Evolving – активно развивающийся; downright – совершенный, очевидный; dumbed-down – упрощенный, обманутый; unbearable – невыносимый, непереносимый; vital – жизненно необходимый, важный.

Verbs

To improve – улучшать, повышать; to entice – завлекать, увлекать, прельщать; to enhance – усиливать, улучшать; to fix – чинить, ремонтировать, крепить.

A. TEXT STUDY

I. Read and translate the following text.

Text A. Tech Industry

There are many reasons you should work in the tech industry. Not only it is one of the most active and evolving fields on the planet, it offers a high-quality income and shows strong growth. In other words, you'll have a fulfilling career with great pay that won't disappear any time soon.

First of all, technology, at least right now, is the pinnacle of research, development, and creative thought in the country, if not the world. While traditional sciences such as medicine and engineering certainly hold a share of innovation, no other field seems to give you the opportunity, or the downright encouragement, to create something new. That is a very exciting prospect for many people.

Technology also involves meaningful work. Don't be fooled into thinking IT jobs are all about mind-numbing Twitter feeds and dumbed-down smartphone games; technology involves important careers that improve people's lives and create valuable, useful solutions to real-world problems.

There is also a large variety of work available. Technology is integral in nearly every industry in the country, including agriculture, transportation, journalism, entertainment, real estate, and manufacturing. You name an industry and there are sure to be dozens, hundreds, possibly thousands of technology jobs available. This allows people with a tech background to work in nearly any geographical area, any field, and any industry.

How can you be certain if one of the many promising jobs in tech is right for you? It takes a lot of commitment and dedication. However, certain characteristics lead to a successful (and happy!) career in technology.

While technology careers involve lots of scientific reasoning and hard data, being a creative, right-brain thinker is actually beneficial. No matter what the position, working with technology involves finding creative solutions that are both usable and visually attractive. It's no coincidence that technology companies from Google to IMB are constantly investing in creative efforts.

You should also enjoy problem solving. Nearly every posting for information technology jobs or careers in tech will have the phrase "problem solving" somewhere in the text. If you are the type of person who tries to fix your own bike, television, or Wi-Fi connection without the help of a professional, you likely fit the bill for an IT career.

A desire to learn is also vital, especially if you want to land one of the best paying tech jobs in the industry. Systems, software, and equipment are evolving faster than ever before, so you need to be fully committed to constant training through classes, certifications, seminars, and industry information.

While not all technology careers are completely tied to a desk, there will certainly be lots of screen time. If the thought of spending hours, often full work weeks, in front of a computer sounds unbearable, then a technology career may not be right for you.

Because every industry, every city, and nearly every company needs some form of information technology services, there are technol-

ogy careers no matter where you live or what your specific expertise. However, certain areas are hot spots for IT jobs.

Of course, Silicon Valley in California is one of the nationally-famous hubs for technology development and innovation. In fact, many west coast cities, including San Francisco and Seattle are top spots for tech jobs. However, according to Glassdoor, east coast cities, such as Boston and Washington D.C. are also excellent for high paying tech jobs. Even midwest cities, such as Minneapolis and St. Louis, are areas where highly-trained tech professionals can find many opportunities.

So how can you find your job out of all technology careers? Like most careers, it starts with education and learning. While it is possible to get a job in the technology field without a formal education, you will discover that many more opportunities are available if you have a bachelor's degree, usually involving computer science, programming, or software engineering in some form. You can also become certified by technology organizations, which demonstrates your commitment to staying at the leading edge of the technology sector and makes employers more enticed by your resume.

When applying and interviewing for a job, make sure to speak directly on how your education and experience will help that specific organization. Cite past projects and assignments that will help you meet the unique challenges that face this business, and talk in clear, substantive ways on how you will help the team. IT technology can be very broad and can include lots of technical jargon that hiring managers may not fully comprehend, so it's important that you communicate, in a clear manner, how your experience will enhance an organization.

If you have an education, training, or experience in information technology, you may be able to enjoy the independence and earning potential of self-employment. This path, which offers greater freedom and the chance to be your own boss, is certainly not an easy trail. You'll be the business, so organization, time management, accounting, marketing, and all the other business tasks fall on your shoulders.

However, there are many technology experts who are either freelancers or have a small tech firm, providing information technology services to numerous businesses. These services can include network setup, security analysis, hardware installation, software development and more.

II. Answer the following questions.

1. Why should you connect your life with tech industry? 2. What does technology involve? 3. Is it necessary to enjoy problem solving in IT sphere? Why/ Why not? 4. Why do so many technology careers exist? 5. Silicon Valley in California is one of the nationally-famous hubs for technology development and innovation' isn't it? 6. Why is it important to have at least a bachelor's degree in CS? 7. What should you do when applying and interviewing for a job?

III. Match the words to their Russian equivalents.

1. meaningful	a) предприятия
2. medicine	b) уникальный
3. prospect	c) среднезападный
4. software	d) сложная задача, испытание
5. commitment	e) медицина
6. unique	f) ПО
7. challenge	g) АО (аппаратное обеспечение)
8. hardware	h) самоотверженность
9. businesses	i) перспектива
10. midwest	j) существенный, значимый

B. TEXT STUDY

IV. Read the text "The most in-demand tech jobs for 2021". Could you add any other professions to the list? Which one would you choose and why?

Text B. The most in-demand tech jobs for 2021

As companies scramble to adapt to a tight IT job market, they're doing whatever they can to attract top tech talent. For some that means getting a head start in filling this year's most in-demand roles, which range from data-focused to security-related positions, according to Robert Half Technology's 2021 IT salary report. The survey also reveals the average salaries for each role based on experience.

While Robert Half Technology acknowledges a lot will impact a company's starting salary, including competition, location, corporate culture, and budgets, there are certain things you can look for to make sure you land the talent you want. Here are some jobs expected to be in

demand for 2021, the skills and experience you should look for and the average salary you'll want to pay to stay competitive.

The most in-demand tech jobs for 2021

Job	25th percentile	50th percentile	75th percentile	95th percentile
Security professional (infor-mation, sys-tems, net-work, data, cloud)	$124,250 (informatio n); $100,000 (systems); $105,500 (network); $112,500 (data)	$149,000 (information); $120,500 (systems); $124,500 (network); $134,000 (data)	$179,000 (information); $143,500 (systems); $148,250 (network); $159,750 (data)	$213,000 (information); $168,500 (systems); $174,500 (network); $190,000 (data)
Cloud architect	$121,000	$146,000	$174,500	$202,250
Database administrat or	$79,750	$100,750	$120,500	$160,000
Programme r analyst	$88,750	$109,500	$131,000	$154,500
Systems analyst	$81,250	$96,500	$115,500	$136,750
Mobile applications developer	$112,750	$135,750	$161,750	$189,750
Network administrat or	$78,500	$95,250	$113,500	$133,500
Software developer	$97,250	$118,250	$138,000	$165,000
DevOps engineer	$97,000	$120,000	$143,000	$184,750
Help desk and desk-top support profession-	$35,250 (tier 1); $41,500 (tier 2);	$40,500 (tier 1); $50,000 (tier 2); $60,500 (tier	$47,500 (tier 1); $56,500 (tier 2); $72,250 (tier	$57,250 (tier 1); $67,000 (tier 2);

44

als	$50,750 (tier 3)	3)	3)	$82,000 (tier 3)

- *25th percentile: entry-level workers or those in industries with less competition*
- *50th percentile: "average experience," a job with "average complexity," or work in industry with moderate competition*
- *75th percentile: above average experience, strong skills, certifications, a more complex role or work in a "fairly competitive" industry*
- *95th percentile: significant experience, certifications, specializations, high level of expertise, work in a strategic and highly complex role or in a highly competitive industry for talent*

Security professional (data, information, network, systems, cloud)

Data, information, systems, network, and cloud security professionals are in demand as businesses increasingly rely on data for everyday business operations. These IT professionals ensure that enterprise IT initiatives remain safe from potential threats inside and outside the organization. They're also tasked with keeping on top of industry compliance regulations and future security trends, and ensuring the business's hardware, software, and networks remain secure.

Skills and experience to look for:

- Ability to communicate and implement security policies and procedures
- Managing security audits, threats, and vulnerabilities
- Experience with security systems and documenting failures and other incidents
- Knowledge of compliance laws and regulations for the industry

Cloud architect

Cloud architects oversee the company's cloud computing strategy and are responsible for deploying, managing, and supporting cloud applications. Cloud architects typically have a strong understanding of multiple operating systems in addition to networking, programming, and security skills. Businesses should look for individuals with a strong knowledge of cloud services such as Amazon Web Services, as well as experience with ITSM, I&O, governance, automation, and vendor management.

Skills and experience to look for:

- Knowledge of state-of-the-art cloud technologies and architectural principles
- Experience with scaling cloud applications
- Understanding of cost, performance, and architecture of cloud systems
- Collaboration and communication skills

Database administrator

A database administrator (DBA) is responsible for maintaining the software used to manage a database and ensuring the data is easily accessible to those who need it. DBAs ensure that servers remain efficient and operational while overseeing data security, implementation, replication, backup, storage, access, and partitions. You'll want to hire someone who can not only monitor your servers, but who will also be able to optimize performance and who can be on call in case of emergency.

Skills and experience to look for:
- Bachelor's degree in CS or an associate's degree in database administration
- Background in IT work or database administration
- Oracle, Linux, and SQL skills
- Data analysis and management and reporting skills

Programmer analyst

A programmer analyst is responsible for designing, coding, and testing new programs along with providing detailed documentation of the process using flowcharts and diagrams. These IT pros are tasked with designing programs based on client requirements and determining how much it will cost to build, while working closely with project managers. Programmer analysts also handle debugging and troubleshooting information systems and application programs. You'll want to look for someone with experience as a systems analyst and computer programmer because the role of programmer analyst is a combination of the two.

Skills and experience to look for:
- Bachelor's degree in CS, IT, or relevant field
- Experience in programming
- Knowledge of programming languages such as Java, Java Script, C, C++, and .NET
- Communication and interpersonal skills to work with departments and vendors

46

Systems analyst

Similar to: systems developer, systems engineer.

Systems analysts design techniques to help solve business problems by analyzing IT systems in the organization. They're responsible for investigating issues and problems and fixing them as efficiently and in a cost-effective manner. Systems analysts need to test programs and databases to make sure they're working efficiently, and they also need to run security audits and create and maintain documentation on systems in the organization. You'll want to look for candidates who can think creatively and who have strong communication and problem-solving skills.

Skills and experience to look for:
- Bachelor's degree in CS, IT, engineering, or IS
- Analytical and problem-solving skills
- Data analysis and programming skills
- Experience with business and technical analysis as well as project management

Software developer

Software developers are responsible for designing, developing, installing, testing, and maintaining software systems. The job requires coding, designing, and building applications, websites, or mobile apps, working with multiple programming languages such as C#, C++, HTML, Java, Microsoft .NET, and SQL Server. Developers need to be able to understand client requirements and be able to provide recommendations for improving web, software, and mobile applications to ensure they meet user needs.

Skills and experience to look for:
- Knowledge of multiple programming languages
- Analytical and technical skills
- Strong communication skills
- Bachelor's degree in computer science
- Two-year associate degree with certifications, bootcamps, and prior work experience

Mobile applications developer

Developing mobile applications requires extensive knowledge of the various mobile platforms currently available and how to develop applications that will work on Android, iOS, Windows, and other operating systems. Mobile applications developers typically have experience in programming, UX design, troubleshooting and debugging pro-

grams, and development. You'll want a candidate who can design mobile applications with a user-friendly interface and who can collaborate across departments to design, test, release, and support mobile applications.

Skills and experience to look for:

- Bachelor's degree in CS or relevant field
- Some experience in mobile development
- Analytical and problem-solving skills
- Knowledge of iOS, Android, Objective C, HTML, XML, JavaScript

Network administrator

Network administrators are responsible for handling LAN/WAN protocol, software, and hardware. This position involves a lot of time spent troubleshooting, and network administrators typically need to be on call in case of an emergency or failure. What you look for in experience will depend on how extensive your network needs are, but there are certain skills and certifications that can help you find the most qualified workers.

Skills and experience to look for:

- Troubleshooting and communication skills
- Analytic and diagnostic skills
- A willingness to be on call after hours
- Professional certifications

DevOps engineer

DevOps practices encourage faster code deployment with fewer deployment failures, so more companies are hiring engineers with DevOps experience to oversee coding, scripting, and processes development. DevOps engineers often manage IT infrastructure, provision resources, oversee software testing, and monitor performance after release. These workers help simplify code updates, enabling companies to continuously tweak and improve processes in the organization for maximum efficiency.

Skills and experience to look for:

- Coding and scripting skills
- Automation, data management, and IT operations skills
- Deep understanding of DevOps best practices
- Strong communication and interpersonal skills

Help desk and desktop support professionals

For customer-facing businesses, the help desk is an important part of running an efficient business. As the first line of defense for customer service and troubleshooting, help desk workers need to have the right technical and soft skills for the job. Robert Half Technology breaks out the role of help desk technician into three tiers, given that the job description and requirements can vary significantly based on the business.

Skills and experience to look for:

• Tier 1: for entry-level positions that require less than two years of experience, an associate degree, or coursework at a technical school

• Tier 2: for positions requiring two to four years of experience, a two-year or bachelor's degree, and relevant work experience

• Tier 3: four or more years of experience in a help desk setting, bachelor's degree in a related field, and professional certifications.

V. Connect the sentence halves.

1. Data, information, systems, network, and cloud security professionals …	a) … often manage IT infrastructure, provision resources, oversee software testing, and monitor performance after release.
2. DevOps engineers …	b) … are responsible for deploying, managing, and supporting cloud applications.
3. Systems analysts …	c) … are responsible for handling LAN/WAN protocol, software, and hardware.
4. A programmer analyst …	d) … design techniques to help solve business problems by analyzing IT systems in the organization.
5. A database administrator (DBA) …	e) … are responsible for designing, developing, installing, testing, and maintaining software systems
6. Cloud architects ...	f) is responsible for maintaining the software used to manage a database and ensuring the data is easily accessible to those who need it.

7. Mobile applications developers …	g) … is responsible for designing, coding, and testing new programs along with providing detailed documentation of the process using flowcharts and diagrams.
8. Network administrators …	h)…ensure that enterprise IT initiatives remain safe from potential threats inside and outside the organization.
9. Software developers …	i) ... develop mobile applications.

VI. Choose the right variant.

DevOps engineers; Data, information, systems, network, and cloud security professionals; Systems analysts; Network administrators; Mobile applications developers; Cloud architects; A database administrator (DBA); A programmer analyst; Help desk and desktop support professionals; QA analyst; Software developer.

1. As the first line of defense for customer service and troubleshooting, … need to have the right technical and soft skills for the job. 2. … help simplify code updates, enabling companies to continuously tweak and improve processes in the organization for maximum efficiency. 3. … are responsible for handling LAN/WAN protocol, software, and hardware. 4. … typically have experience in programming, UX design, troubleshooting and debugging programs, and development. 5. … need to test programs and databases to make sure they're working efficiently, and they also need to run security audits and create and maintain documentation on systems in the organization. 6. … also handle debugging and troubleshooting information systems and application programs. 7. … ensure that servers remain efficient and operational while overseeing data security, implementation, replication, backup, storage, access, and partitions. 8. … typically have a strong understanding of multiple operating systems in addition to networking, programming, and security skills. 9. … are also tasked with keeping on top of industry compliance regulations and future security trends, and ensuring the business's hardware, software, and networks remain secure. 10. … need to be able to understand client requirements and be able to provide recommendations for improving web, software, and mobile applications to ensure they meet user needs.

VII. There are much more IT professions that were not mentioned in exercise 4. This is the list of such professions: *business analyst, IT support analyst, software developer, IT consultant, technical sales representative, project manager, web designer, QA analyst.* **Do you know anything about them? Work in pairs, find information about these professions and share it with your groupmates. Google can help you!**

VIII. You are going to hire a position of *business analyst/ IT support analyst/ software developer / IT consultant/ project manager / web designer / QA analyst / Network administrator / Mobile applications developer / database administrator (DBA) / a programmer analyst.* **You have been invited to take the interview. What questions about the position would you ask your recruiter?**

VOCABULARY STUDY

Nouns and noun phrases

Outsourcing – делегирование выполнения функций стороннему исполнителю (специалистам, привлеченным со стороны); investment – помещение денег, инвестирование; client maturity – срок погашения по кредиту, выданному клиенту; niche market – узкоспециализированный рынок, point of reference – исходная позиция, отправная позиция; revenue – доход; GDP (gross domestic product) – валовой внутренний продукт; per capita – на душу населения; приходится на человека; venture capital fund – фонд особо рисковых инвестиций, фонд венчурных инвестиций; share – участие, акция, пай; initial public offering (IPO) – первичное публичное предложение ценных бумаг, первичное предложение акций; mandatory payment – обязательный платёж; VAT (value-added tax) – налог на добавленную стоимость, income tax – подоходный налог; real estate tax – налог на недвижимое имущество; customs duties – таможенные пошлины и сборы; headquarters – штаб-квартира, головной офис; MMO-shooter (massive multiplayer online) – массовый многопользовательский онлайн снайпер; alliance – объединение, союз.

Verbs and adverbs

To estimate – оценить, устанавливать стоимость; to exceed – превысить, превосходить; profitably – доходно; прибыльно; to create "from scratch" – создать с нуля, создать на пустом месте; to be

exempt from taxes – освобождаться от уплаты налогов; to set a record – установить рекорд; to implement – внедрить, осуществлять; to allocate – распределять, предназначать; to rank – распределять, считаться, располагать в порядке приоритетности.

A. TEXT STUDY

I. Read and translate the following text.

Text A. It in Belarus

In the past several years Belarus has earned the reputation of the leading "IT country" in the Eastern European region. According to the Global Services 100 rating, the Republic of Belarus placed 13th among the 20 leading countries in the sphere of IT outsourcing and high-tech services. Moreover, three companies with Belarusian roots entered the top-100 of the largest world companies in this sphere: EPAM Systems, IBA Group and Intetics Co. Belarus ranks 48th in the IT-ranking of UN. Software development has existed in the country since 1998. However, the key "point of reference" from which the development of the IT sphere in Belarus began is considered to be September 2005, when by the Decree of the President of the Republic of Belarus №12 "On HTP", the legal basis for the successful work of the "Belarusian Silicon Valley" – the High-Tech Park – and the attraction of investments to the software development industry was laid. Today Belarusian companies working within the HTP, differ by the progressive management and the effectiveness of marketing decisions. The sphere is characterized by client maturity, the complexity of the implemented projects, the global network of service delivery, the variety of the "portfolio" of products and services, the ability to work on the niche markets.

Achievements of the Belarusian High-Tech Park

In September 2012, HTP announced about the first 1 billion US dollars earned. About 6 thousand workplaces have been created during the existence of the Park with the participation of foreign investors. Today 49% of HTP residents are companies with Belarusian capital and 51% – with foreign capital. Experts predict an increase in the number of companies with foreign capital, as today ICT is one of the priority aspects for direct foreign investments to Belarus. 80% of the software produced in the Park is exported. 45% is supplied to USA and Canada, 30% – to Europe, 20% – to Russia and CIS. Belarus occupies

the leading positions in Central and Eastern Europe in the export volume of computer and information services per capita. This figure amounted to over 35 US dollars per person in 2012. The indicator of Belarus exceeds the identical indicators in Russia and Ukraine by two or more times. The consumers of software developed by the residents of the Hi-Tech Park are known global corporations: automotive corporations Peugeot (France), Mitsubishi (Japan), media holdings British Telecom (UK), T-Mobile (Germany), Reuters (UK-USA), fuel and energy companies British Petroleum (UK), Rosenergoatom, London Stock Exchange, the World Bank, Deutsche Bank, the Central Bank of the Russian Federation, the world-famous producers Coca-Cola, Procter & Gamble, Colgate-Palmolive (USA), Samsung (Korea).

Investment options in Belarusian IT- sphere

Significant amounts of money can be profitably invested in the projects of the IT-sphere of Belarus. Major foreign investors in the Belarusian IT-sphere are companies from USA, Great Britain, Israel, Germany and Russia. According to the representatives of foreign companies, foreign venture capital funds are ready to invest up to 1 million US dollars in the development of IT-projects, and the greatest interest to them is the initial stage of project implementation. Thus, 62.5 million US dollars of direct foreign investments were attracted to the Hi-Tech Park (HTP) in 2012. As of today, the most common option of the arrival of investors in the Belarusian IT-sphere is the creation of a new software development company in Belarus "from scratch". In 2012, the number of HTP residents was recruited by 13 such companies and reached 118 organizations. Another investment option is the attraction of relevant strategic investors who specialize precisely in the IT-sphere. In this case, foreign companies enter the market by buying Belarusian businesses. Another example of attracting investments was the initial public offering (IPO) of EPAM Systems on the New York Stock Exchange. During the first hour of trading alone, the shares rose in price by 20% from 12 US dollars to 14.4 US dollars per share.

Climate for investors

According to the conditions formalized for the residents of the Park by the Decree of the President № 12 in 2005 and which remain in force until 2020, the residents of HTP are exempt from taxes, duties and other mandatory payments to the republican budget, state focused budgetary and extrabudgetary funds, paid from the proceeds from the sale of goods, VAT and income tax from the sale of such products, land

tax during the construction period (up to 3 years) and real estate tax. Among profitable preferences are the exemption from customs duties and VAT on import of goods required to carry out activities and the reduction of income tax on workers to 9%. These benefits are provided to the residents of the Park, the main activities of which are the development and implementation of information and communication technologies and software both on the domestic market and for export. Benefits are available in 12 more high-tech activities – from creating products for micro- and nano-electronics to aviation and space-rocket technology.

Successful projects

Information and communication technologies are also in the priority areas, which will attract investments. The number of companies in Belarus, producing intelligent products which are in demand around the world, is growing rapidly. In 2011, the massively multiplayer online game World of Tanks, developed by the Belarusian studio Wargaming.net, has set a record, officially registered in Guinness Book of Records. The MMO-shooter managed to gather together the greatest number of players in history on the same server – more than 90,000 people. By the end of 2012 the authors of World of Tanks received a USD 200 million profit. Among the Belarusian game developers the company Viaden Media is also highlighted – the largest company in the country in the field of gaming applications for mobile platforms and social networks. One of its recent programs – application for sports All-in Fitness, a member of the top most downloaded applications in dozens of countries. Belarusian developers have also strong positions in the categories of applications for communication. For example, the authors of the popular program Viber, competing with Skype in the mobile market are Israelis. The main office of the company is located in Israel, the product is enjoyed by over 100 million people worldwide. However, all Viber software development is implemented in Belarus. The main advantages of Belarusian programmers are: the company allocates the capacity to think and act not by the book, but to find non-trivial solutions. Belarusian companies traditionally are among the leading providers of solutions for business. Among the automated ERP class (enterprise resource planning) in the CIS countries the largest developer in the region of ERP-systems is the "Galaxy" corporation, the headquarters of which is situated in Minsk. To date, the company's software is used by more than six thousand enterprises of CIS coun-

tries, representing various sectors of the economy. Established 20 years ago in Minsk, the alliance of IT-companies "IBA Group" is by far one of the largest developers of solutions and services in the sphere of high technology in Central and Eastern Europe. The IBA brand has more than 20 companies in Belarus, Russia, Ukraine, the USA, Germany, UK, Czech Republic, Bulgaria, Kazakhstan and Cyprus. The portfolio of the "IBA Group" includes more than 1.500 projects implemented for customers on 5 continents, which solve problems in a variety of industries, including information technology, telecommunications, transport and energy sector. EPAM Systems is one of the key-players of the Belarusian IT-industry. Established in 1993, EPAM Systems provides complex software engineering solutions through its award-winning Central and Eastern European service delivery platform. Headquartered in the United States, EPAM serves clients worldwide from its locations in the United States, Canada, UK, Switzerland, Germany, Sweden, Belarus, Hungary, Russia, Ukraine, Kazakhstan, and Poland. EPAM is ranked #6 on the 2013 Forbes "America's 25 Fastest-Growing Tech Companies" list and is recognized among the leaders in software product development services by Forrester and Zinnov analysts.

II. Choose the best continuation for each of the following sentences.

1. The Republic of Belarus is ranked 13th among the 20 leading countries in the sphere of ...
a) agricultural production.
b) chemical industry.
c) IT outsourcing and high-tech services.
2. The High-Tech Park is characterized by ...
a) implementing the complex projects.
b) the global network of service delivery.
c) the variety of the "portfolio" of products and services.
3. Belarusian developers have strong positions ...
a) in the categories of applications for communication.
b) in the industrial niche markets.
c) in the categories of applications for entertainment.
4. EPAM Systems provides ... through its award-winning Central and Eastern European service delivery platform.
a) mobile applications

b) complex software engineering solutions

c) clients support worldwide

5. Viaden Media is the largest company in the country in the field of ...

a) complex software engineering solutions.

b) gaming applications for mobile platforms and social networks.

c) software solutions for business.

6. The residents of HTP are exempt from taxes, duties and other mandatory payments ...

a) for a 5-year period.

b) during the construction period (up to 3 years).

c) for ever.

III. Match the words to their definitions.

Portfolio, customer, highlight, capacity, Stock Exchange, benefit, delivery, consumer, root, annually.

1. The act of taking something to a person or place.

2. The investments that are owned by a person or organization.

3. An individual's mental or physical ability.

4. Something that is an origin or source.

5. One that purchases a commodity or service.

6. Every year.

7. To center attention on.

8. A place where security trading is conducted on an organized system.

9. One that utilizes economic goods.

10. Something that produces good or helpful results or effects or that promotes well-being.

IV. Complete each sentence using a word derivationally related to the word given in brackets.

As the demand for IT specialists grew, companies were doing everything in their power to attract and teach new specialists. It was claimed that the HTP (represent) went from school to school, talked to children and their parents explaining why IT is a (promise) field. Until the 2000s, IT was terra incognita for many. They had to break down what IT is and why it has a future. Strong (cooperate) between educational institutions and technology companies emerged: classes were

56

held directly on the companies' premises, (allow) students to obtain practical IT experience. This is still a common practice. As of today, technology companies have set up 52 joint laboratories in 15 (educate) institutions. The basis for creating thousands of IT (special) was also there: Belarus has one of the most (access) higher education in the world. It's second out of 139 countries in the share of those who have completed higher and secondary education in the total number of school graduates. There were 68.4 thousand students in the year 2017-2018 that achieved technical (Science, Technology, Engineering, Math) specializations – that is 24%. It's also worth pointing out that Belarusian universities offer about 70 IT specialties and every year new specializations are introduced.

V. Complete the sentences with the correct preposition.

As a part of the global IT business, the Belarusian software services sector has been developing ... a rapid pace. The country's reputation ... scientific and IT excellence complemented ... the competitive labor market has attracted the interest of numerous IT-intensive companies. Over the last five years, the compound annual growth rate (CAGR) ... the Belarusian IT industry constituted 30 %. In 2015, the total production and sales revenue of the Belarusian IT industry amounted ... USD 1,120 million. In 2016 ... a time when other economic sectors are likely to show export failures, the Belarusian IT is expected to lead export growth.

IBA Group's campus ... Belarus includes office building, data center, fitness center, three-level parking, and dwelling house.

Historically, Minsk was ... the main USSR IT centers because of the computer production facilities and design institutes that were concentrated here. In Soviet times, Belarus supplied 60% of the USSR demand ... computer production. At independence, the country inherited one of the highest standards ... scientific and technical potential ... the former Soviet Union.

VI. Read the text again and mark the sentences T (true), F (false), or DS (doesn't say).

1. EPAM Systems provides complex software engineering solutions through its award-winning Central and Eastern European service delivery platform. 2. Today 79% of HTP residents are companies with

Belarusian capital and 21% – with foreign capital. 3. Foreign venture capital funds are ready to invest up to 1 million US dollars in the development of IT-projects. 4. About 10 thousand workplaces have been created during the existence of the Park with the participation of foreign investors. 5. Belarus occupies the leading positions in Central and Eastern Europe in the export volume of computer and information services per capita. 6. The authors of the popular program Viber, competing with Skype in the mobile market are Belarusians.

VII. Make up the sentences or questions.

1. "IBA Group", on, more, The, portfolio, of, the, includes, 1.500 projects, implemented, for, than, customers, 5 continents.

2. the, 1998, development, has, since, Software, in, existed, country.

3. companies, providers, leading, traditionally, among, the, Belarusian, of, solutions, for, are, business.

4. areas, technologies, Information, communication, are, in, the, priority, and, also.

5. Park, The, provided, benefits, are, the, residents, of, the, to.

VIII. Complete the text by writing the suitable form of the verb in brackets in each space.

Belarusian IT companies (to commit) to providing high quality services and solutions and seek to comply with the latest international standards. In October 2003, the two largest Belarusian enterprises, IBA Group and EPAM Systems, (to be) the first in Europe to achieve the SEI CMMI® (Software Engineering Institute's Capability Maturity Model Integration) Level 4 Rating. IBA Group was the first IT company in Belarus to certify its labor safety management systems to the international standard OHSAS 18001 and its information security management system to the requirements of ISO/IEC 27001 standard.

The Belarusian IT industry generally (to engage) in custom development and high-end software services for clients that (to require) low cost but highly skilled technology resources. Belarusian companies offer the same core development languages, platforms and technologies as their counterparts in other countries. In addition, our engineers and developers (to know) for their accuracy and have a reputation for (to be) creative and able to solve complex problems.

IX. Read the text and give it the most appropriate title.

The history of information technology in Belarus goes back decades. Strong educational traditions in mathematics engineering and software were established in the country back in the Soviet times. These professionals would become the driving force behind the most advanced projects and innovations in the country.

Continuing the tradition, almost a quarter of Belarusian university students takes education in 70 IT specialties. It is no secret that many Belarusians work in big tech companies all over the world. But, of course, the main personnel pool is concentrated in the country.

In sovereign Belarus, the IT has been the fastest growing industry. It has been steadily turning into the main driver of economic growth, the powerhouse of strategic importance. Set up in 2005, the Hi-Tech Park (HTP) has matured into the Belarusian Silicon Valley. Thanks to the principle of extraterritoriality its resident companies can open offices in any locality of the country. Belarus, the HTP and its resident companies rank high on the global and regional rankings assessing the IT achievements. Software from Belarus often makes headlines in the IT world.

Belarus ranked 32nd on the International Telecommunication Union Measuring Information Society Report in 2017. The information and communication technology sector generated 6.2% of Belarus' GDP in 2019. Belarus has set out to increase the share of the ICT sector to 7.5% of GDP by 2025.

Belarus is one of the world's major exporters of IT services per capita. From 2005 to 2016, the export of IT services and products increased 30-fold, and the share of IT export rose from 0.16% to 3.25% of the country's total exports of goods and services.

In 2017, the HTP hit the milestone export mark of $1 billion. That year the export amounted to $1.025 billion, going up by 25% ($820 million in 2016) while import of services totaled $5 million. The HTP reported the output of Br2.153 billion (more than $1.08 billion), up by 20% over 2016. In 2019, the Hi-Tech Park hit another export milestone of $2.195 billion, up 55% year-on-year. The export of Belarus' Hi-Tech Park exceeded $2.7 billion in 2020 to account for more than 20% of Belarus' export of services.

Belarusian IT companies sell mostly internationally. More than 90% of the software produced in the Belarusian HTP is bound for export: 49.1% – to Europe, 44% – to the United States and Canada, 4.1% – to Russia and other CIS countries.

Six HTP resident companies were included in the list of the best outsourcing service providers (2017 Global Outsourcing 100): Bell Integrator, Ciklum, EPAM, IBA Group, Intetics and Itransition.

Ten companies having offices in Belarus made it to the Software 500 revenue-based ranking of the world's largest software and services suppliers: EPAM (107), Bell Integrator (281), IBA (281), Itransition (368), Coherent Solutions (393), SoftClub (409), Artezio (416), Intetics (419), Oxagile (456), IHS (482).

Belarusian companies provide IT services to the world's biggest corporations and organizations (Samsung, HTC, London Stock Exchange, World Bank, Microsoft, Coca-Cola, Toyota, Google, British Petroleum, etc.).

Mobile applications developed by resident companies of the Belarusian Hi-Tech Park are used by more than a billion people in more than 190 countries of the world. Among them are Viber, MSQRD, MAPS.ME, Flo and many others.

Developed by Wargaming (Belarus-based R&D center Game Stream) World of Tanks is one of the five most profitable MMO games in the world. It has racked up more than 160 million registered players in the past 10 years. Belarus is one of very few countries that develop supercomputers.

Over the first two decades since Belarus embarked on building its IT industry, local companies have earned a reputation as first-class developers, while Belarus has become to be known as a great IT outsourcing destination. However, this business pattern is gradually changing.

Today, the domestic IT sector is switching to the product model. Belarus seeks to attract international corporations and tech giants in a bid to digitalize its economy. The government will rely not only on intellectual potential of domestic IT specialists. It has adopted unprecedented legislative initiatives designed to create the most favorable conditions for IT business in Belarus, and in the long run – to turn the country into a financial haven that offers a convenient, business-friendly environment that will help companies thrive and grow.

Belarus has set out to develop the IT industry and to promote digital transformation of the economy. This is why training of specialists is a priority. Decree No.8 formalized the right of the Hi-Tech Park resident companies to provide training and education in the field of ICT.

Around 7,000 IT specialists with a university degree graduate in Belarus every year. They are trained in 21 universities across the country. IT specialists in Belarus are trained mostly at Belarusian State University of Informatics and Radioelectronics; Belarusian State University; Belarusian State Technological University; Belarusian National Technical University.

In 2016, resident companies of the Hi-Tech Park initiated, with the support of the Education Ministry, a project to teach the Scratch programming language to school students of the 2nd-6th grades. Thousands of Belarusian school students study this language nowadays.

In 2018, an IT company was set up in the Armed Forces of Belarus. Its task is to develop software, special and application programs in association with departments of the Military Academy and other research facilities and educational institutions. The IT company's main areas of work include combat simulation, navigation support, automated control and radiolocation systems, and so on.

X. Transform the sentences from active voice into passive one; write down two variants if it is possible.

1. They sold the ring to the lady yesterday. 2. The principal introduced our new English teacher to us. 3. Haven't you agreed on all the most important details yet? 4. She'll certainly show us her new picture. 5. They report that a dangerous criminal is missing. 6. Did the teacher explain anything new to you at the lesson? 7. She didn't even send me a birthday card! 8. By 5 o'clock the committee hadn't announced the winner yet. 9. Professor Brand always gives these recommendations to his students. 10. We never laugh at his jokes because they aren't funny. 11. Don't disturb him. He's dictating a very important letter to his secretary. 12. She was describing accident to passers-by when the police arrived. 13. Oh, dear! She's been waiting for me for a quarter of an hour already. 14. What are they looking for? 15. Some strangers offered his help when I fell down in the street. 16. When did he write this book? 17. He speaks in such a low voice that nobody ever listens to him. 18. Mr. Brown is buying a new car. 19. Every woman is pleased

when somebody pays her a compliment. 10. They haven't bought anything new lately.

XI. Correct the possible mistakes in the sentences concerning the passive voice form.

1. There's something wrong with the piano. It is been tuned now. 2. When will be the picture finished? 3. The boy was made to stay after classes. 4. The plan we agreed looked perfect. 5. They were recommended to call the police. 6. You'll have to wait. The documents are looking through. 7. She was looked at with curiosity when she entered. 8. Mary was sure she had been watched all the way. 9. Who was the book written? 10. The message was written by a pencil. 11. The question has been being discussed for two hours already. 12. What were you being explained when the principal entered? 13. He was seen leave the building at 8 o'clock. 14. It was arranged that the incident would never be mentioned in the family. 15. She was said to go home at once. 16. This event has been much spoken lately. 17. He was promised another day-off on Friday. 18. What are these cakes made of? 19. The child was bought new shoes yesterday. 20. The children are always read a good-night tale by their Granny.

XII. Open the brackets in the sentences, use the proper form of the passive voice.

1. What's going on here? What's all that noise? – Sorry! My flat ... (to redecorate). 2. If the work ... (not/to finish) by evening, you'll be in trouble. 3. By the time I left the problem ... (not/ to solve) though it ... (to discuss) actively for quite a long time. 4. Why ... (this information/ever/ to use)? It's so interesting! 5. Such clothes ... (not/to wear) now. 6. Don't worry. Nobody will notice such a tiny spot. It ... (not/to pay attention to). 7. She suddenly realized that she ... (to listen to) in complete silence. 8. She ... (not/to introduce) by the hostess and felt embarrassed as she herself didn't know anybody. 9. I'll take a picture of you when you ... (to give) the prize. 10. What was that book about? – It ... (to devote) to the writer's brother who ... (to kill) in the war. 11. He ... (to offer) several times. – What made him refuse it? 12. I ... (to tell) that the problem ... (not/to consider) yet but when it was I ... (to inform) immediately. 13. They say a new play ... (to rehearse) by the school theatre. – Oh, yes, all the parents and teachers. 14. The girl was

crying because she ... (to made fun of) by her classmates. 15. It was the third time the name ... (to mention) and I wondered who the man was. 16. I was sure that if the figures ... (to check) properly the mistake ... (to find) easily. 17. I'm fed up. I ... (to keep) waiting for half an hour! I'm not going to stay here any longer. 18. Now that the situation ... (to study) thoroughly what ... (to do) to improve? 19. This is the only thing that ... (to talk about) for several days. 20. I doubted if the child ... (to look after) properly though I ... (to promise) complete care.

UNIT VI

RESEARCHING THE MARKET

VOCABULARY STUDY

Nouns and noun phrases

Job application – заявление о приеме на работу; cover letter – сопроводительное письмо; job interview – собеседование; short list – *зд.* краткий список кандидатов на должность; assessment – оценка; small talk – светская беседа, first-hand experience – непосредственный (практический) опыт, prospect – перспектива; target – цель; accuracy – точность; competitive edge – конкурентное преимущество.

Adjectives

Relevant – соответствующий, уместный; behavioural – поведенческий; enormous – огромный; defined – определенный, transferable (skills) – передаваемые (навыки).

Verbs

Fulfil – *здесь* отвечать (требованиям); ensure – обеспечивать, гарантировать; lay out – излагать; stand out – выделяться; reveal – выявлять; inquire, tailor – приспосабливать.

I. Match the words with the definitions below.

Job interview, competitive edge, to fulfil, behavioural, small talk, relevant, inquire, reveal, short list, assessment.

1. Polite conversation about unimportant or uncontroversial matters, especially as engaged in on social occasions.

2. Closely connected or appropriate to what is being done or considered.

3. Make (previously unknown or secret information) known to others.

4. Achieve or realize (something desired, promised, or predicted).

5. The act of judging or deciding the amount, value, quality, or importance of something, or the judgment or decision that is made.

6. A formal meeting in which an applicant is asked questions to determine their suitability for a particular job.

7. A list of selected candidates from which a final choice is made.

8. Involving, relating to, or emphasizing behaviour.

9. Ask for information from someone.

10. A factor, which gives (a person, a company) an advantage over enemies, rivals, etc.

II. Using a dictionary add as many words as possible into the table.

Verbs	Adjectives	Nouns
1. to fulfil		
2.		short list
3. to ensure		
4.	defined	
5.		assessment
6. to inquire		
7.	relevant	

III. Choose the words with similar meaning from the two groups and arrange them in pairs.

A. Relevant, stand out, ensure, short list, assessment, lay out.

B. Selected candidates, pertinent, distinguish yourself, evaluation, present, guarantee.

IV. Complete the sentences with the words below.

Small talk, enormous, job application, tailor, first-hand experience, competitive edge, inquire, defined.

1. The low overheads of the company gave it a … over other retailers.

2. She believes that success should be … in terms of health and happiness.

3. Their knowledge of their customers allows them to … services to their needs, including working hours and payment schedules.

4. … is polite conversation about unimportant things that people make at social occasions.

5. You would not complain if you were turned down in a … for health reasons.

6. The day after my surgery the doctor's nurse called to … about my health.

7. A coach with … of the modern game is a big advantage.

8. We chose not to undertake the project because of the … costs involved.

V. Make up your own sentences using the following words and word combinations.

First-hand experience, accuracy, ensure, relevant, job application.

VI. Translate into English.

Поиски новой работы могут стать трудным, утомительным и долгим занятием. Каждый хотел бы найти идеальную работу, которая будет приносить удовольствие и финансовую стабильность. И хотя волшебных способов гарантированно найти массу хороших вакансий не существует, всегда можно предпринять конкретные шаги, которые повысят ваши шансы.

Ищите подходящие вакансии онлайн. Проведите поиск на различных сайтах с предложениями работы. Также существует множество сайтов, которые специализируются на вопросах трудоустройства.

Подавайте заявки только на вакансии, которые соответствуют вашим навыкам и опыту. Это не значит, что вы должны идеально соответствовать каждому аспекту в объявлении, но не следует тратить ценное время на заявки, в которых у вас нет шансов. Если вы подходите по большинству пунктов, то смело подавайте заявку.

Обращайтесь к потенциальным работодателям. Если вам нужно быстро найти работу, то лучше всего действовать на опережение и показать потенциальному новому начальнику, что ваш настрой самый серьезный и вы подходите лучше других.

I. Read the text and complete the exercises below.

Text A. The 6 Stages of Your Job Application

Do you often ask yourself what goes on behind the scenes of the job application process? HR managers look for very specific characteristics and follow clearly defined strategies and procedures. Below we will explain the most important stages your application will be going through in the HR department. This way, you'll be even better prepared in the competition for your dream job.

1. Receiving your application documents. The most important factor that ensures that your application is considered is, quite obviously, that the HR managers receive your application documents in the first place. Email applications should not be too big and documents should not be sent individually or in a confusing jumble.

2. Pre-selection. Pre-selection means filtering out the candidates that do not fulfil the basic criteria. Possible basic criteria might include a complete application, a degree, relevant keywords in the cover letter and CV, or knowledge of a certain language. Pre-selection is done either manually or using a HR management system. That leaves a group of promising potential candidates.

3. Document evaluation. Your CV and your cover letter are analyzed before and after a job interview and should complement each other. The CV should be clearly laid out and not be too lengthy while still containing all the relevant key information. Studies have shown that your CV is scanned for 6 seconds on average and is analyzed in particular detail at very specific points.

Your cover letter should conform to the usual layout criteria and ideally stand out from the other covers letters in terms of content. You should reveal a little of your personality in your cover letter. Of course, when we say 'personality' we don't mean that you should reveal what your favourite meal is – just some relevant information that has something to do with the job and the company. HR managers read an enormous number of cover letters and most of these are remarkably similar. What information would show you in a positive light and make you stand out from the crowd? We often hear that HR managers like it when applicants refer to the company's slogan or include an intelligent comment on a successful campaign or new product. You need to prove

that you have done more than just superficially research the company and show that you are truly interested and motivated. The cover letter is not just simply a repetition of your CV, which the HR managers will already have a copy of.

4. The short list. In larger companies and at companies that use external support to organize their recruitment procedures, your documents might only be read by the people who make the final decision if you make it onto the short list. At smaller firms it is almost certain that a direct selection will be made. Either way, the number of potential candidates is reduced further. Only a few will make it onto the short list and be invited for interview.

5. Assessment, job interview or telephone interview. The next round will involve a personality test, telephone interview, online assessment or a face-to-face job interview. If you are invited for an interview or an aptitude test then you've already come through the pre-selection and are on the short list! Congratulations! They must have found your cover letter and your CV interesting. You will now really be put through your paces. Your personality, social and cognitive intelligence, values and your behavioural characteristics will be tested. In short, they'll be looking to see what else you have to offer. You can take it for granted that all the other candidates are just as well qualified as you are. So, at this point you should try to stand out from the crowd of similarly qualified candidates – and to do so in as many ways as possible.

6. After the job interview. After the job interview, you should make a note of the most important issues and then relax. You will usually be told during the interview when you can expect to hear from them. If they forget to mention this, you can certainly ask about it in a friendly way, but you should definitely not inquire about the status of your application after only a few days. The appraisal and decision will take a few weeks and yes, the successful candidate is always contacted first. If the chosen one accepts the job, rejection letters are drafted and sent to the other candidates.

II. Choose the best option to the following statements.

1. Pre-selection means …
a) a personality test, telephone interview, online assessment.
b) filtering out the candidates that do not fulfil the basic criteria.

c) a face-to-face job interview.

2. Your CV and your cover letter …

a) should complement each other.

b) should be the same.

c) should contradict each other.

3. If you are invited for an interview then you're on …

a) the pre-selection list.

b) the best employees list.

c) the short list.

4. If the chosen one accepts the job … are sent to the other candidates.

a) cover letters;

b) thankful letters;

c) rejection letters.

III. Comprehension Check. State whether the statements are true or false. Correct if necessary.

1. Email applications should be quite big and documents should be sent individually.

2. The CV should be clearly laid out and not be too lengthy while still containing all the relevant key information.

3. HR managers don't like when applicants refer to the company's slogan or include an intelligent comment on a successful campaign or new product.

4. If you are invited for an interview then you're on the short list.

5. You should definitely inquire about the status of your application after a day or two.

IV. Fill in the necessary prepositions.

1. HR managers look … very specific characteristics. 2. Pre-selection means filtering … the candidates that do not fulfil the basic criteria. 3. Studies have shown that your CV is scanned for 6 seconds … average and is analyzed … particular detail … very specific points. 4. If you are invited … an interview or an aptitude test then you've already come … the pre-selection and are … the short list. 5. You can take it … granted that all the other candidates are just as well qualified as you are. 6. So … this point you should try to stand … from the

crowd … similarly qualified candidates. 7. You will usually be told … the interview when you can expect to hear … them. 8. If the chosen one accepts the job, rejection letters are drafted and sent … the other candidates.

B. TEXT STUDY

I. You are going to read an article about researching the job market. 5 sentences have been removed from the article. Choose from the sentences A-F the one, which fits each gap (1–5). There is one extra sentence, which you do not need to use.

A. They can also inform you about any additional qualifications or experience you may need.

B. Working with a career coach can help you to assess your career options, clarify your next career move and help put together a targeted job search campaign.

C. Many people waste hours applying for unsuitable roles and wonder why they do not get any response from employers or agencies.

D. They can provide background research into the company or industry you are applying to, as well as any other research requests you may have.

E. This research will also outline the trends of the labour market as a whole, giving you an idea of what industries are growing and which are shrinking.

F. This could be the difference between getting shortlisted or being turned away.

Text B. Research the Job Market

Before starting your job search, make sure you have fully assessed your skills and experiences, ensuring they are a good fit for your target role. You should know exactly what type of roles are suitable, as this will help with the accuracy of your job search [1].

Researching the job market will give you a good idea on which job roles are suitable to you and what industry sectors you should be aiming for. [2]. This will help you decide which industry you should be investing your time in.

Take time to thoroughly research the industry you are applying for to ensure that the job you are interested in is actually, what you think it is, that it is right for you and that it is achievable. It might be worth talking to recruiters, people who work in similar roles and employers to help you see whether this is the right role for you. [3]. The information you gain from your research may give you a competitive edge, an opportunity to address any shortfalls and potentially save you a lot of time.

By taking the time to research the job market it can also help you tailor your CV and application forms, ensuring they are a good match for the role you are applying to. Having strong knowledge of the industry and position will also help you stand out from the crowd and show you have done your homework. [4].

[5]. Career coaches can help you get the job that you want by helping you locate the target roles, produce a winning CV and perform well at interview.

II. Read the text and answer the following questions.

1. Why don't many people get any response from employers or agencies?

2. What can researching the job market give you?

3. Why is it necessary to thoroughly research the industry you are applying for?

4. Is it important to have strong knowledge of the industry and position? Why?

5. What can working with a career coach help you to do?

III. Give the main points of the text in 4-7 sentences. Use the following clichés:

The text is concerned with ... . It should be noted that ... . are considered. It should be remembered that ... . The fact that ... is stressed. The author draws the following conclusion ... .

IV. Translate from Russian into English.

Четыре стратегии трудового самоопределения молодежи:

1. Стратегия карьерного роста, реализуемая на основе постоянного профессионального развития, обучения, повышения ква-

лификации и проявления инициативы с целью занять наиболее высокие позиции в социуме. 2. Стратегия общественной пользы, ориентированная на развитие и благоприятные условия труда, на дружный коллектив и стабильность занятости. 3. Стратегия свободной занятости, основанная на личных интересах и проявлении инициативы в их продвижении и реализации; рассматривается как способ самореализации.

4. Стратегия исполнения, ориентированная на простоту трудовой деятельности, гарантии рабочей занятости и зарплаты.

V. Conversational Practice. Read the dialogue.

Looking for a Job

Sophie: Hey Silvia. How are you? What have you been up to? I haven't seen you for ages.

Silvia: I'm fine, Sophie. I'm actually looking for a job at the moment.

Sophie: Yeah? So, how's it going?

Silvia: Not that great, to be honest. I've got a few ideas for possible jobs but I'm not really sure what sort of work I want to do, or what I'd be really good at.

Sophie: I see. In my experience, you've got to work out what you want to do before you start thinking about where you want to work. So, start by thinking about the things you like doing, or what you're interested in.

Silvia: Well, I'm interested in sustainability and I enjoy working with people.

Sophie: Exactly. So, you'd probably enjoy a job that included both of these things. Then, after you've worked out your interests, the next step is to think about the skills you've got that can be used in almost any job, things like communication and people skills. Everything that you've managed to do successfully at work or university needed skills to get these things done. These are your transferable skills.

Silvia: But how do I work out what my transferable skills are?

Sophie: I try to think about something I've done that was successful, where my actions have made a difference, and then try to identify the skills I used.

Silvia: Hmm. I can do that, I think.

Sophie: Also, a lot of people these days use personality tests to find out more about the type of person they are and the types of jobs that are suited to them. There are quite a lot of them on the Internet if you're interested.

Silvia: That sounds interesting. I'll give it a go, and see what it comes up with.

Sophie: Okay, but don't take these tests too seriously – they're just there to give you some ideas and suggestions. At the end of the day, the only person who really knows who you are and what type of job is right for you is you. And remember, it's not just about finding a job that you'd be good at. You need to find a job that you'll enjoy, one that you'll love doing.

VI. Answer the following questions to the dialogue. Role-play the dialogue with your partner on analogy.

1. What is the first thing Sophie suggests Silvia does? 2. How does Sophie identify her transferable skills? 3. Does Sophie think personality tests are very important? 4. What is the final piece of advice Sophie gives Silvia? 5. Have you tried any of Sophie's suggestions? Did they work for you? 6. What are your transferable skills?

VII. Speak about stages to research the job market using key words, phrases and the topic sentences.

UNIT VII

RESEARCHING YOURSELF

VOCABULARY STUDY

Nouns and noun phrases

Strengths and weaknesses – сильные и слабые стороны; perception – восприятие; academia – научное сообщество, научные круги; SEO (search engine optimization) marketing – поисковое продвижение (привлечение клиентов или целевых пользователей из поисковых систем); hard skills – профессиональные, технические компетенции, которые можно наглядно продемонстрировать, оценить и проверить; soft skills – универсальные социально-психологические качества, которые не зависят от профессии, но непосредственно влияют на успешность человека; self-starter – инициативный; lateral thinking – нестандартное мышление.

Adjectives

Vital – жизненно важный, необходимый; refreshing – обновляющий, освежающий; passionate – страстный, увлеченный; empathetic – чуткий; trustworthy – надёжный, заслуживающий доверия; persuasive – убедительный; agile – гибкий; versatile – разносторонний; collaborative – готовый сотрудничать; insightful – проницательный.

Verbs

Assess – оценивать; acknowledge – признавать; attain – достигать, добиваться; excel – преуспевать, превосходить; deem – считать, полагать; be aware – быть в курсе, осознавать; highlight – подчеркивать, обращать внимание; compile – собирать, составлять; trump – превосходить; cross-check – перепроверить; tailor – адаптировать, приспосабливать.

I. Match the words with the definitions below.

Academia, highlight, agile, lateral thinking, insightful, soft skills, trustworthy, tailor.

1. To be able to think quickly and clearly.

2. Personal attributes that enable someone to interact effectively and harmoniously with other people.

3. To make or adapt for a particular purpose or person.

4. The environment or community concerned with the pursuit of research, education, and scholarship.

5. To be worthy of confidence; dependable.

6. Having or showing an accurate and deep understanding; perceptive.

7. To draw special attention to.

8. A manner of solving problems using an indirect and creative approach via reasoning that is not immediately obvious.

II. Using a dictionary add as many words as possible into the table.

Verbs	Adjectives	Nouns
1. to assess		
2.	vital	
3. to compile		
4.	collaborative	
5.		perception
6.	empathetic	
7. to highlight		

III. Choose the words with similar meaning from the two groups and arrange them in pairs.

A. Strengths and weaknesses, persuasive, self-starter, versatile, trump, cross-check.

B. Flexible, double-check, advantages and drawbacks, outperform, ambitious, convincing.

IV. Complete the sentences with the words below.

Trustworthy, excel, vital, tailor, soft and hard skills, aware, insightful, SEO marketing.

1. Don't misunderstand. Both … are mandatory for workplace success.

2. His remarks are the most … and motivational of any I have heard on the topic.

3. Everybody should be made … of the risks involved.

4. In simple terms, … means the process of improving your site to increase its visibility when people search for products or services related to your business in Google, Bing, and other search engines.

5. He looks very professional and … , and I hope things work out for him.

6. We identify your needs, and … your training accordingly.

7. If your talent combines with diligence, you can … in your pursuit.

8. Good communication is … in a large organization.

V. Find the words with the opposite meaning.

A. Trustworthy, acknowledge, empathetic, highlight, be aware, lateral thinking.

B. Deny, conceal, be ignorant, inside-the-box thinking, unreliable, callous.

A. TEXT STUDY

I. Read the text and answer the following questions.

1. Why is it important to assess one's strengths and weaknesses?

2. Is it helpful to look at possible ways of changing one's perceptions of a competency?

3. Can some weaknesses be considered as a positive thing? Provide some examples.

4. What are your strengths and weaknesses?

Text A. Understanding Your Strengths and Weaknesses

Assessing your strengths and weaknesses as an early career researcher could be key to your longer-term development.

There is no doubt we should celebrate our strengths more, and acknowledge that if we are not strong in a particular area, we may never be able to attain the same standards as others in this area. Of course, we can improve and get better and that should be our focus. It's worth trying to explore our strengths and weaknesses in different ways as a

means of acknowledging some of the possible reasons you don't excel in an area, while in others you do.

Ask yourself questions like: What areas are you most inspired by or interested in? What scares you? And, finally, ask yourself why and look at possible ways of changing your perceptions of a competency. You may hold a lot of negativity about something, that if you could remove, you might enjoy and be good at.

For example, there is some focus these days on researchers using social media as a means of reaching out beyond academia. You may not feel like this is something you can do, but if you come at this more broadly and look at different social media tools that suit you and your personality, you might be able to change how you feel about this specific competency. Trying to come at things from a different angle is often refreshing and valuable.

It's vital not to attach too much negativity to your weaknesses. Through some self-awareness, you should be able to start acknowledging how some of your weaknesses can also be deemed a positive thing. For instance, you may be the type of person who focuses too much on 'the detail' of an issue and finds it difficult to draw out the key points, but of course, this could be both a weakness and a strength, depending on the context. Equally, if you are a passionate and spontaneous person, this could be both a positive and negative character trait depending on the context. By being aware of our weaknesses and by repositioning them we may begin to see that they should not be always seen in a negative light.

II. Choose the best option to the following statements.

1. It's worth trying to … our strengths and weaknesses in different ways as a means of acknowledging some of the possible reasons you don't excel in an area.

a) ignore;

b) explore;

c) talk about.

2. For example, there is some focus these days on researchers using … as a means of reaching out beyond academia.

a) scientific methods;

b) intuition;

c) social media.

3. It's vital not to attach too much negativity to your …

a) weaknesses.

b) strengths.

c) bad mood.

4. By … our weaknesses and by re-positioning them we may begin to see that they should not be always seen in a negative light.

a) being aware of;

b) denying;

c) being afraid of.

III. Comprehension Check. State whether the statements are true or false. Correct if necessary.

1. Assessing your strengths and weaknesses as an early career researcher could be key to your short-term development.

2. We should celebrate our strengths more, and acknowledge that if we are not strong in a particular area, we'll be able to attain the same standards as others in this area.

3. There is some focus these days on researchers using social media as a means of reaching out beyond academia.

4. Trying to come at things from one angle is often refreshing and valuable.

5. Self-awareness can help you to start acknowledging how some of your weaknesses can also be deemed a positive thing.

6. If you are a passionate and spontaneous person, this could be considered only as a positive character trait.

IV. Complete the sentences about one's strengths and weaknesses with prepositions *in*, *to*, *at*.

Strengths. 1. I'm excellent … communicating. 2. I'm able … work effectively as part of a team. 3. I'm quite good … organizing and planning. 4. I've recently managed … complete an expedition in South America. 5. I'm fluent … English. 6. I'm interested … sustainability issues and have experience … this field.

Weaknesses. 1. I'm not very good … being patient all the time. 2. I can sometimes find it difficult … make decisions. 3. I could be better … using Excel.

V. Match the personal characteristics (1-6 to the questions a-f).

1. creative   a) Do you always do what you say you'll do?
2. decisive   b) Are you good at getting other people to agree with you?
3. flexible   c) Are you good at making your mind up quickly?
4. organized   d) Are you able to plan ahead successfully?
5. persuasive   e) Are you able to cope with last-minute changes?
6. reliable   f) Are you good at coming up with imaginative solutions?

VI. Make the personal characteristics in Ex. V negative by adding a prefix (*dis-, in-or un-*).

1. *uncreative*	3.	5.
2.	4.	6.

VII. In pairs, take turns to ask and answer the questions in Ex. V. Discuss your individual strengths and weaknesses, giving specific evidence.

A. 'Do you always do what you say you will do?'
B. 'Yes, I'm very reliable. I'm always on time to work, classes and meetings, and when I can't make it, I let people know ahead of time.

B. TEXT STUDY

I. Read the text and fill in the gaps with the words from the list.

a) leadership; b) Problem-Solving; c) applicants; d) tailor; e) interpersonal skills; f) cross-check; g) resume; h) trainings; i) agile; j) Computer Programming.

**Text B. How to Highlight Your Top Skills and
Stand out from the Crowd**

You've just found the perfect job, now it's time to create the ultimate resume but how do you know what skills to include? Here's three tips on how to highlight your top skills.

Step 1. Compile a list of all your hard and soft skills. To identify your hard skills, start by thinking about which skills you have learned

through your studies, certification programs, *(1)* or previous job experiences. Soft skills compliment your hard skills and are usually a combination of social skills, character traits, *(2)*, and emotional/social intelligence that guides you through your work and social environment. Soft skills are just as important, if not more than hard skills. 94% of recruiting professionals believe that soft skills trump experience, especially when it comes to promotions for *(3)* positions. In a world where tech and automation are growing rapidly soft skills are becoming even more significant to employers.

Here are examples of hard and soft skills.

Hard Skills. 1. Data Analysis; 2. Copywriting; 3. Foreign Languages; 4. Accounting; 5. *(4)*; 6. Mathematics; 7. Graphic Design; 8. Planning / Event Planning; 9. SEO / SEM Marketing; 10. Bookkeeping.

Soft Skills. 1. Communication (social, good written and oral); 2. Teamwork (cooperative, supportive); 3. Interpersonal Skills (empathetic, patient, passionate); 4. Adaptability (self-starter, open-minded); 5. Positive (optimistic, confident); 6. Integrity (honest, ethical, trustworthy); 7. *(5)* (lateral thinking, persuasive); 8. Responsibility (reliable, self-disciplined); 9. Leadership (*(6)*, versatile, collaborative); 10. Creativity (innovative, insightful).

Step 2. Determine which skills are needed for the job. Once you've compiled a list of ALL your hard and soft skills, analyze the specific job ad you applying for and pull out the key skills they are seeking. Using these keywords on your resume will help you get noticed, especially if there are many *(7)* or if the employer uses an Application Tracking System (ATS). These systems filter through the keywords to help employers select which applicants should be interviewed. To help you "beat the bot", be sure to *(8)* your skill set with those required for the job and highlight them on your resume.

Step 3. Take these skills and sprinkle throughout your resume. Take the time to *(9)* your skills to the specific job. Now that you have your skill set and those keywords you found from the job ad, think of ways to promote how those skills have been developed or used in your previous jobs. Share them not only in your skill section, but also in the experience section of your *(10)*.

II. Complete the phrases for demonstrating transferable skills using the correct verbs in brackets.

1. analytical skills (analyze/conduct/identify)
a) identify a mistake; b) ... data; c) ... a survey
2. creativity (invent/solve/suggest)
a) ... a machine; b) ... an alternative; c) ... a problem
3. communication skills (explain/give/write)
a) ... a report; b) ... an idea; c) ... a presentation
4. interpersonal skills (listen/resolve/work)
a) ... a dispute; b) ... to a point of view; c) ... with 'difficult' people
5. leadership skills (chair/delegate/motivate)
a) ... a meeting; b) ... a team; c) ... tasks
6. organizational skills (decide/implement/meet)
a) ... deadlines; b) ... on priorities; c) ... a plan
7. teamworking skills (contribute/discuss/support)
a) ... an issue; b) ... to a meeting; c) ... a colleague
8. negotiation skills (change/convince/negotiate)
a) ... someone's mind; b) ...with someone; c) ... someone to do something

III. Identify three of your transferable skills. Make notes about the things you have done in the past that demonstrate these skills. Use the phrases in Exercise II. In pairs, take turns to tell each other short stories about the things you have done that demonstrate your transferable skills, using your notes. Try to guess which transferable skills your partner's stories demonstrate.

IV. Conversational Practice. Read the dialogue. Role-play the dialogue with your partner on analogy.

Sophie: So, how's the job-hunting going?

Silvia: Well, I haven't got very far, to be honest. I'm struggling to work out what my transferable skills are.

Sophie: Well, you've done so much, Silvia. I'm sure you've got lots of skills that would be useful in almost any job. Why don't you tell me some things you've done and then we can work out what transferable skills you've got?

Silvia: Well, I applied for my MA course while I was working in Africa, and even managed to start doing some research for the course before I came back to England.

Sophie: So, you're clearly quite good at planning. And what were you doing in Africa? I'm sure that you developed lots of skills while you were there that will help you get a job.

Silvia: I worked for an NGO as part of a large team with people from all over the world. We all lived together and shared a bathroom. The work was quite varied and I was given different tasks to complete each week.

Sophie: Like what?

Silvia: Well, for example, on the project our main aim was to educate local people about the need for reforestation. We tried putting up posters, but this didn't have much of an effect. We needed to find a better way to communicate this message. Later on, I talked to respected members of the community, and convinced them to talk to other people in the village. This approach was far more effective.

Sophie: You've always been good at persuading other people!

Silvia: I guess you're right. When I was at university, I was the communications officer of the student union and I was responsible for dealing with suppliers. I had to order food and drink for university concerts and so on. It was always possible to get a better deal if you were good on the phone. It wasn't just a question of being persuasive though, it was really a case of being clear and expressing yourself well, making sure that everybody understood what I was saying.

Sophie: Okay. I think we've got lots to work on already. Now let's try and think about what you've said in terms of transferable skills ...

V. Answer the following questions to the dialogue. Role-play the dialogue with your partner on analogy.

1. When did Silvia apply for her MA course? 2. What was Silvia doing in Africa? 3. What job did Silvia have at university? 4. What transferable skills does she have?

VI. Translate from Russian into English.

При выборе соискателя на вакантное место работодатели уделяют особое внимание наличию так называемых «переносимых» личных навыков. Это способности, компетенции или опыт,

которые могут использоваться в работе на любых должностях и в разных сферах деятельности.

Высокая адаптивность. Умение быстро реагировать на измененияn – ключевой навык в условиях непредсказуемости и нестабильности. Сейчас востребованы кандидаты, способные оперативно отслеживать тренды и изменения рынка и легко к ним адаптироваться, чувствовать актуальную ситуацию и в случае необходимости быть готовыми быстро обучаться и активно вовлекаться в реализацию новых задач и процессов.

Аналитическое мышление. Компаниям сейчас нужны специалисты, умеющие быстро собирать и обрабатывать большой поток профильной информации, рассматривать одновременно разные сценарии решения вопроса.

Коммуникабельность и работа в команде. Способность работать в команде и грамотно выстраивать отношения в коллективе сильно ценится в рабочей среде. Развивая навыки коммуникации, вы сможете эффективно работать с коллегами, участвовать в совместных проектах, а также выстраивать долгосрочные связи с людьми. К коммуникационным навыкам относятся связная конструктивная речь, четкое изложение мыслей, умение слушать.

Креативность и инновационность. Компаниям нужны креативные сотрудники, способные нетривиально мыслить и находить нестандартные решения, выходя за рамки шаблонов. Таким специалистам необходимо не только уметь генерировать свежие интересные идеи, но и быть способным правильно их реализовывать и внедрять в рабочий процесс.

Эмоциональный интеллект. К эмоциональному интеллекту относятся такие навыки, как эмпатия, самоконтроль, полное понимание себя и своих эмоций, способность вдохновлять и стимулировать как других людей, так и себя самого. Люди с такими навыками могут легко сглаживать конфликты и непростые ситуации, добиваться социального успеха на работе. И главное, имея стабильный эмоциональный фон, они будут желанными коллегами и сотрудниками в любом коллективе.

VII. Speak about hard and soft skills using key words, phrases and the topic sentences.

UNIT VIII

PREPARING A CV

VOCABULARY STUDY

Nouns and noun phrases
References – рекомендации; objective – цель; accomplishment – достижение, успех; major – *зд.* профилирующий предмет; at hand – *зд.* рассматриваемой; upskilling – повышение квалификации; set – набор, комплект; target – цель, задача; volunteering – волонтерство; gap – разрыв, пробел, разница, несоответствие.

Adjectives
Relevant – соответствующий, уместный; current – текущий, существующий, действующий; accessible – доступный; multilingual – многоязычный; residential – жилой; prospective – потенциальный, возможный.

Verbs
Outline – изложить, описать, указать; ensure – обеспечивать, гарантировать; be keen – стремиться, сильно желать чего-либо; bear in mind – учитывать, принимать во внимание; pick up – приобретать, получать; gain – получать; undertake – осуществлять, выполнять.

I. Match the words with the definitions below.

Outline, accomplishment, prospective, gap, undertake, multilingual, volunteering, residential.

1. Likely to happen soon.
2. To take upon oneself, as a task, performance, etc.; attempt.
3. To work for an organization without being paid.
4. To give the main features or various aspects of smth; summarize.
5. The space between two things. It can be physical or philosophical.
6. Designed for people to live in.
7. Something that has been achieved successfully.

8. Speaking or using several different languages.

II. Using a dictionary add as many words as possible into the table.

Verbs	Adjectives	Nouns
1.		accomplishment
2. to outline		
3.		volunteering
4.	accessible	
5.		set
6. to ensure		
7.	residential	

III. Choose the words with similar meaning from the two groups and arrange them in pairs.

A. Relevant, references, ensure, major, accessible, target, gain.

B. Minor, pertinent, recommendations, obtain, objective, guarantee, available.

IV. Complete the sentences with the words below.

At hand, major, current, keen, upskilling, residential, pick up, bear in mind, prospective.

1. They were very … to start work as soon as possible.
2. You can … your plane tickets at one of the airport's kiosks.
3. There was also a shared perception that the issue … was ethical, not political.
4. There are three important points we must … .
5. This is the business centre of the capital and is no longer … .
6. The … unemployment rate is six percent.
7. These trends underline the importance of employers stepping up and playing a more active role in supporting the … of workers.
8. Most hotels require confirmation from a … guest in writing.
9. I help them with marketing, which was my … at the university.

V. Make up your own sentences using the following words and word combinations.

References, accessible, ensure, volunteering, gain, prospective.

VI. Translate into English.

Правила составления резюме

Резюме – эффективный и простой способ саморекламы, но оно не должно быть слишком креативным, содержать много собственной похвалы. Некоторые спорные факты биографии стоит исключить. Главная цель – привлечь внимание работодателя к своей кандидатуре. Включение недопустимой, лишней, противоречивой информации может привлечь к тому, что кандидатура работника будет отклонена. Серьёзные компании, как правило, негативно относятся к отклонениям от общепринятых правил оформления резюме. Исключение – вакансия на творческую специальность.

Существуют три основных правила, которых стоит придерживаться: 1. Аккуратность. Не должно быть исправлений, ошибок, трудно читаемого почерка. 2. Краткость. Менеджер по подбору персонала хочет видеть основную информацию о соискателе, а не пытаться вычленить главное из большого количества ненужного текста. 3. Правдивость. Недопустимо включать ложную информацию – многие факты сейчас легко проверить.

При составлении резюме следует придерживаться чёткой структуры. Сплошной текст не подойдёт. Работодатель должен с лёгкостью найти любые данные: фамилию, опыт работы, образование, личные качества. Если резюме печатается на компьютере, то стоит выделить отдельные блоки. Для этих целей подойдёт жирный шрифт.

A. TEXT STUDY

I. Read the text and complete the exercises below.

Text A. How to write a resume

A resume consists of several key components, and to write a good resume you need to cover all these aspects. The main items that are required on a resume include your name, contact details (address, telephone and optionally email), your objective, education, previous work experience and references. You may also include other additional information that may be relevant to the job you are applying for such as special interests, computer knowledge, and if you are multilingual, you may write down the languages that you speak.

Name and contact details. It is important to put your real name on your resume, and not a nickname. This is to show that you are serious about the position you are applying for. It is also best to give your permanent, residential address so that employers can see where you are located. It is a good idea to list both your home phone number, and your mobile phone number in case you are not available at home when the prospective employer rings.

Objective. This is often the focus point on your resume, it outlines to the employer what type of work that you are after and why you are after it. The objective should be a simple sentence or two that is directly related to what work you wish to gain and your qualifications or accomplishments.

Education. This is often one of the most important areas when writing a resume. It is important to list all the education you have achieved so that you distinguish yourself from other applicants. If you have a degree, be sure to include the type of degree you achieved (Bachelor, Masters, etc.), your majors, the institution attended, graduation date and years attended. It may be worth providing your grade average, and also any special awards and achievements that you have.

Work Experience. Work experience is also another very highly important category when writing a resume. It shows employers if you have had relevant past experience to the job you are applying for. Ensure that you list the name of the organization, location of the organization, your position with them and the dates you worked with them. You should also describe the work you done with them, ensuring that you use strong and words relevant to the job at hand (for example, if the job you are applying for relies heavily on teamwork, focus on the teamwork aspects in previous jobs). You should list any forms of volunteer work or internships.

Additional Information. This is the area in which you can list anything else that may be relevant, or put you ahead of other applicants. This could be for example if you are multilingual, you could list the languages that you speak. You can also list computer knowledge that you have if computers will be used in the workplace.

References. It is almost essential to include a reference list when writing a resume. References are most often people you have previously worked for, or if you haven't had a job before you could list teachers or family friends. You must ask references if you can put them on your resume before including them. It is best to have at least two people, and

include their name, phone number, what relation they had and organization they work for.

II. Comprehension Check. State whether the statements are true or false. Correct if necessary.

1. It is important to put your real name on your resume to show that you are serious about the position you are applying for.

2. The objective should be a compound sentence that is somehow related to what work you wish to gain and your qualifications or accomplishments.

3. Education is one of the most important areas when writing a resume.

4. You shouldn't list any forms of volunteer work or internships.

5. You could list the languages that you speak in References section.

6. You could list teachers or family friends in References if you haven't had a job before.

III. Complete the following CV using a past form of the verbs in the box.

| achieve | complete | coordinate | develop | hold |
| organize | persuade | represent | research | ~~work~~ |

Silvia Carnali

Home address:	42 Hampstead Rd London NW3
Telephone:	44 (0) 207 862 4567
Email:	s_carnali@hotrnail.com
Date of Birth:	14 February 1986
Nationality:	Italian

Education.
2008-present. The School of Oriental and African Studies (SOAS). MSc (Hons) Development Studies (2.1 expected), 7000-word dissertation on reforestation in Kenya.
2004-2007. University College London (UCL) BA (Hons) Geography (2.1).
2004. Diploma Maturita Scientifica (58/60) - Liceo A.Tosi, Milano
Professional Experience.

2008. Project Volunteer in Sustainable Solutions (NGO), Kenya (6 months)

1. *worked* as part of an international team to increase awareness of sustainability in Kenya.

2. ... communication strategies to ensure that our message was delivered effectively Established, managed and maintained relationships with key stakeholders.

3. ... local community leaders to increase the level of reforestation in Kenya.

2006-2007. Communications Officer in University College London (1 year). Organized and managed catering for more than 10 separate UCL events for up to 300 students. Liaised with student council board members, catering suppliers, venues and performers.

4 ... University College London at a series of event conferences.

5 ... two-week event management training course.

2005. Activity Leader in Concord College Summer School, Shropshire, UK (2 months). Led sports and drama activities for 200 international students.

6. ... weekend adventure trip in Wales, including leading a walking expedition for twenty students.

7. ... daily meetings with other members of the activity team. Provided training and support for less experienced members of the team.

Activities and Interests.

2007 September. Mountain Trekking in South America (1 month).

8. ... and planned group mountain expedition in the Andes, Argentina. As sole Spanish speaker I acted as spokesperson for the group. Reacting to unforeseen events required frequent revision of plans, responding to group members, tour operator and airlines.

9. ... aims of crossing the remote central part of the Southern Patagonian ice cap in Los Glaciares National Park, improved Spanish language skills, stayed within budget.

2003-present. Greenpeace Active Member (5 years).

10. ... a campaign against nuclear power. Persuaded 1000 people to write to their local MP demanding the Government to reconsider renewable energy resources as a viable alternative to nuclear power.

Languages.

Italian (mother tongue), English (fluent), Spanish (upper intermediate).

Computer Skills.
Full command of Microsoft Office Suite.
Driving.
Full current driving license.
References.
References available upon request.

IV. Match the English expressions used in a CV with their Russian equivalents. Then work with your partner and take turns to translate the expressions from Russian into English without looking into the table.

1. well- organized, highly motivated communications strategy adviser	a) мотивированный, находчивый и способный мотивировать других
2. self-motivated, resourceful and able to motivate others	b) способный работать по собственной инициативе и в сжатые сроки
3. able to work on own initiative to tight deadlines	c) способный устанавливать, управлять и поддерживать отношения с ключевыми заинтересованными сторонами
4. contributed to the development of a successful sales strategy	d) решительный и целеустремленный, эффективный как в индивидуальной, так и в командной конкурентной ситуации
5. able to establish, manage and maintain relationships with key stakeholders	e) хорошо организованный, высоко мотивированный консультант по коммуникационной стратегии
6. decisive and goal-oriented, effective in both individual and team competitive situations	f) внесший вклад в разработку успешной стратегии продаж
7. analytical by nature with solid problem-solving abilities	g) обширная база знаний и навыков в самых разных финансовых приложениях
8. broad base of knowledge and skills in a wide variety of finance applications	h) с аналитическим характером и прочными способностями решения проблем

I. You are going to read an article about identifying one's skills and upskilling. 5 sentences have been removed from the article. Choose from the sentences A-F the one, which fits each gap (1-5). There is one extra sentence, which you do not need to use.

A. There are flexible ways to learn like online learning, short courses, evening classes.

B. Hard skills are gained through work, learning or training.

C. But the more relevant experience and training you have, the stronger your job applications and CVs will be for the future.

D. When identifying your skills and deciding what skills to develop, you should look at what soft skills and hard skills apply to the job you want.

E. Your CV is something that has to be kept up to date and tailored to every job that you apply for.

F. Think about your education and employment history and any training you have had.

Text B. Identifying Skills and Upskilling

Help identifying your skills. Employers will look for two different types of skills. 1. Soft skills (also called transferable skills are the type you pick up through life experience, like communication). 2. Hard skills (necessary skills for specific jobs and they are gained through work, learning or training). [1] To help you identify your current skills, you could:

• think about your current situation – what job or experiences have you had and what skills did they include;

• talk to people who know you well personally – an outsider's perspective can help identify what skills you have;

• write down a list of strengths and areas you'd like to improve.

How to improve your skill set. Improving your skills set can help you develop your CV and may help you decide on what career path you want to take in the future. You may find skill areas you need to improve, like: digital skills; working with people – you can do this through volunteering; out of date qualifications – find new training opportunities to update your qualifications; your English or maths; interview skills.

[2] If you have identified gaps, you should look at how you feel about further training or a new work experience or volunteering opportunity.

Set realistic goals. If you have not been employed for a while, you should be realistic when setting yourself goals and deciding your next steps. You should focus on a job or qualification, which is available and accessible to you and your skill level. You can gain new skills by: doing some work experience; taking part in courses and training opportunities; volunteering.

Taking a course does not have to be a full-time commitment. [3]

You should think about the time you can give to your goals, think about how it will affect your personal circumstances; work and personal commitments.

Be flexible with your career plan. Develop your plan with a long term aim and short term goals so you can break up your time. You should think about all the different routes you could take to getting to your career aim.

You should bear in mind that your volunteering and work experience opportunities may not always be the exact role you want to undertake. [4]

Update your CV with new skills. The benefits of taking volunteering and training opportunities are that they can: fill a gap on your CV; prove to an employer you are keen to learn and develop new skills; show educational providers that you want to learn more; help you develop skills that are relevant to your job choice and make your CV stand out.

[5] Make sure that you add your new skills and experience as you develop them.

II. Read the text and answer the following questions.
1. Explain the difference between soft skills and hard skills.
2. What could you do to identify your current skills?
3. What should you do in order to improve your skill set?
4. How can one gain new skills?
5. What are the benefits of taking volunteering and training opportunities?

III. Give the main points of the text in 4-7 sentences. Use the following clichés.

The text deals with ... . The text gives a valuable information on ... . Attention is drawn to the fact that ... . are discussed. Underlined is the conclusion that ... .

IV. Translate from Russian into English.

Как понять, нужно ли развивать "мягкие" навыки?

Если вы хотите понять, насколько необходимы "мягкие" навыки в вашей работе, то ответьте на несколько вопросов:

1. Насколько важно для моего карьерного продвижения то, как я взаимодействую с окружающими?

2. Есть ли люди в компании на подобной должности, которые двигаются по карьерной лестнице быстрее?

3. Влияет ли мой темперамент на продвижение в компании?

Если вы ответили «да» на эти вопросы, то работать над своими универсальными компетенциями просто необходимо. Для ориентира расскажем, какие универсальные компетенции наиболее перспективны (на основе исследования профессиональной сети LinkedIn):

- Коммуникабельность
- Организованность
- Умение работать в команде
- Пунктуальность
- Критическое мышление
- Креативность
- Гибкость
- Дружелюбность
- Лидерские качества
- Умение решать сложные задачи

V. Conversational Practice. Read the dialogue.

Avoiding Common CV Mistakes

Alex: Hi, Ella.
Ella: Hi, Alex. How are you doing?

Alex: I'm fine. I'm just calling as I've decided to apply for a couple of admin jobs, and I'd like your help with my CV. Do you have any tips? Any specific mistakes I should watch out for?

Ella: Well, the first one is simply mistakes. You'd be surprised how many people submit CVs with basic mistakes in them. If you've got a whole load of CVs on your desk, this is an easy way to get rid of some to begin with.

Alex: What sort of mistakes are you talking about?

Ella: Spelling mistakes, often. For example, putting the 'i' in the wrong place in 'receive', or writing 'correspondence' with an 'a' instead of an 'e', or spelling 'liaise' with only one T. Then there's another type of spelling mistake, when applicants use the wrong form of words like 'practice' and 'advice'.

Alex: English is such a difficult language sometimes! I guess the answer is to proofread my CV thoroughly and then double and triple check.

Ella: Exactly. The next thing is to keep it short. You've got to grab the employer's attention, and remember they've got other work to do as well as going through CVs. Don't list all of your experience and qualifications, only the stuff that's relevant for the job you're going for. Cut it down to the most relevant and impressive achievements. Less is more, and being concise and to the point will demonstrate your ability to edit well.

Alex: So how many pages should it be?

Ella: Well, I'd aim for one side, if possible, certainly nothing longer than two pages.

Alex: That's great. Anything else?

Ella: Yes, be honest.

Alex: But doesn't everyone lie a bit in their CVs?

Ella: It's true that a lot of people stretch the truth, and you should certainly only focus on positive experience and details relevant for the job, but don't be tempted to write anything untrue. First of all, your CV is a legal document, and if they find out you've lied then they can fire you just like that. Secondly, you're going to be a lot more confident in an interview talking about the details on your CV if you've told the truth, than if you've made something up. In my experience, it doesn't take very long to spot someone who's lied in their CV and they always get found out sooner or later. It's simply not worth it.

Alex: So, honesty is the best policy. And what about getting my CV noticed?

Ella: Well, presentation's important so use nice, neutral-colored paper and matching envelope. But I think the main thing is to make sure that your CV is written to match the requirements of the job and the culture of the company you're applying for work with. You've got to adapt every CV you write to each job you apply for. It's surprising how many people think they can get away with one CV for all jobs!

Alex: Thanks, Ella. I can't thank you enough.

Ella: You're welcome, Alex. Let me know how you get on.

VI. Answer the following questions to the dialogue. Role-play the dialogue with your partner on analogy.

1. According to Ella, what words are commonly misspelt in CVs?
2. Why does she believe short, concise CVs are preferable?
3. Why shouldn't you lie in a CV?
4. According to Ella, should you use the same CV for all your applications?

VII. Look at the following extracts from CVs. Identify and correct the spelling mistakes (the number of mistakes is given in brackets).

1. In my previuos job I was responsable for dealling with my bosses' correspondance, passing on their telephone massages, and arrangeing apointments with visitors. (7)

2. Apart from the academic beneffits, the experiance off studing abraod enabled me to practice my foriegn language skills and develope my strenghts in non-academic areas. (10)

3. During my time as an assistent in the personal department, my main acheivement was when I lead a project witch focused on improveing startegic buisness planing. (9)

VIII. Speak about activities that can help to identify one's skills using key words, phrases and the topic sentences.

UNIT IX

A JOB INTERVIEW

<u>VOCABULARY STUDY</u>

Nouns and noun phrases

Interview – собеседование; tip –заметка; confidence – уверенность; elevator pitch – краткая презентация; references – рекомендации; applicant - претендент; employer – работодатель; attire –форма одежды; stain – пятно; encounter – встреча; employee – работник; rambling – болтовня.

Adjectives

Backup – запасной; upbeat – оптимистический, бодрый.

Verbs

To align –совмещать выверять, выстраивать; to recruit – нанимать; to entail – подразумевать, навлекать на себя; to collaborate – взаимодействовать; to assess - определять, оценивать; to embellish – приукрашивать.

A. TEXT STUDY

I. Read the text and find out information:

1. what a job interview is;
2. what aims a job interview has;
3. the connection between a job interview and a hiring decision.

Text A. A Job Interview

A job interview is an interview consisting of a conversation between a job applicant and a representative of an employer which is conducted to assess whether the applicant should be hired. Interviews are one of the most popularly used devices for employee selection. Interviews vary in the extent to which the questions are structured, from a totally unstructured and free-wheeling conversation, to a structured interview in which an applicant is asked a predetermined list of questions in a specified order; structured interviews are usually more accurate

predictors of which applicants will make suitable employees, according to research studies.

A job interview typically precedes the hiring decision. The interview is usually preceded by the evaluation of submitted resumés from interested candidates, possibly by examining job applications or reading many resumes. Next, after this screening, a small number of candidates for interviews is selected.

Employers conduct different types of job interviews, such as behavioral interviews, case interviews, group interviews, phone and video interviews, second interviews, and even interviews held during a meal.

Interviewers use behavioral based interviews to determine how the applicants have handled various job situations in the past. The idea is that the past behavior predicts how a person will act in the new job. Applicants don't get many easy "yes" or "no" questions and in most cases, they need to answer with an anecdote about a previous experience.

Interviews that include the interviewer giving applicants a business scenario and asking them to manage the situation are called case interviews. This interview type is most often used in management consulting and investment banking interviews and requires applicants to show off their analytical ability and problem-solving skills.

Employers may hold group interviews because they're often more efficient than one-on-one interviews. Group interviews can involve an applicant being interviewed by a group (or panel) of interviewers or one interviewer and a group of applicants.

As an applicant passed the first interview and just got an email or call to schedule a second interview. This interview will be more detailed and may be several hours long.

One of the reasons employers take job candidates out to lunch or dinner is to evaluate their social skills and to see if they can handle themselves gracefully under pressure. Applicants should remember they are still being observed so use their best table manners, choose foods that aren't too messy.

There are other interviews an applicant may experience throughout the career. These employment-related interviews include exit interviews, mock interviews, and informational interviews.

II. Read and translate the text. Find out the most unusual type of interview.

Text B. Types of Job Interview

Employers conduct different types of job interviews, such as behavioral interviews, case interviews, group interviews, phone and video interviews, online interviews, second interviews, and even interviews held during a meal.

Those are important job interviews to understand if you're searching for a job, but there are other interviews you may experience throughout your career. These employment-related interviews include exit interviews, mock interviews, and informational interviews.

Video Interview. Perhaps you've applied for a remote job or you're interviewing for a position in another state (or country). Software programs such as Skype, Zoom, and FaceTime making video calling easy and video interviews are becoming more common.

Exit Interview. An exit interview is a meeting between an employee who has resigned or been terminated and the company's Human Resources department. Companies conduct these types of interviews, so they can learn more about the work environment and get job feedback. You may be asked why you left your job, why are you taking a new job, and what would you change about your job. These tips will help you handle an exit interview so you can move on gracefully.

Off-Site Interview (выездное собеседование). Employers sometimes schedule job interviews in a public place, like a coffee shop or restaurant. Perhaps there is no local office or maybe they don't want current employees to know about the possibility of a new hire. In any case, it's good to be prepared for off-site interviews.

On the Spot Interview (собеседование на месте). Sometimes you'll be expected to do an on-the-spot interview. For example, you may turn in your application and be asked to do an interview right away. Or when an organization (typically retail or hospitality) announces they will be holding open interviews on a specific date. In situations like these, hiring personnel use on-the-spot interviews to screen applicants and immediately decide who should and should not be included in the next step of the recruiting process.

Panel Job Interview (групповое собеседование). A panel job interview takes place when you're interviewed by a panel of interviewers. You may meet with each panel member separately or altogether. And sometimes there will be a panel of interviewers and a group of candidates all in one room.

Final Interview. The final interview is the last step in the interview process and the last interview you find out whether or not you'll get a job offer. This type of interview is usually conducted by members of upper management. The key to a final interview is to take it as seriously as all the preliminary interviews – just because you were asked in for a final interview doesn't mean you got the job yet.

Group Interview. Employers may hold group interviews because they're often more efficient than one-on-one interviews. There are two types of group interviews: one involves an applicant being interviewed by a group (or panel) of interviewers; the other involves one interviewer and a group of applicants.

Informal Interview. Hiring managers may begin the screening process with a relaxed, informal conversation instead of a formal interview. This is more of a casual discussion than a typical job interview. On a similar note, a chat over a cup of coffee is another less formal type of job interview.

Informational Interview. An informational interview is used to collect information about a job, career field, industry or company. In this case, you're the interviewer and you find people to speak with so you can learn more about a specific field.

Mock Interview (собеседование-репетиция). A mock interview provides you with an opportunity to practice for an interview and receive feedback. Although you can do an informal mock interview with a friend of family member, a mock interview with a career coach, counselor or university career office will give the best feedback.

Competency Based Interview. Interviews, that require you to give examples of specific skills, are called competency-based interviews, or job specific interviews. The interviewer will ask questions that will help them determine if you have the knowledge and skills required for the specific job.

Phone Interview. While you're actively job searching, you may need to be prepared for a phone interview on a moment's notice. Companies often start with an unscheduled phone call, or maybe you'll get

to schedule your call. In either case, it's good to be ready and prepared to ask phone interview questions to ask the interviewer as well.

Restaurant Interview. One of the reasons employers take job candidates out to lunch or dinner is to evaluate their social skills and to see if they can handle themselves gracefully under pressure. Remember you're still being observed when you participate in a job interview at a restaurant so use your best table manners and choose foods that aren't too messy. Also take a look at what to wear when interviewing over a meal.

C. TEXT STUDY

III. Read and translate the text. What other tips could you add?

Text C. Tips for before the interview

In the days before your job interview, set aside time to do the following:

1. Start by researching the company and your interviewers. Understanding key information about the company you're interviewing with can help you go into your interview with confidence. Using the company's website, social media posts and recent press releases will provide a solid understanding of the company's goals and how your background makes you a great fit.

2. Practice your answers to common interview questions. Prepare your answer to the common question: "Tell me about yourself, and why are you interested in this role with our company?" The idea is to quickly communicate who you are and what value you will bring to the company and the role – it's your personal elevator pitch.

Tip: you should come prepared to discuss your salary expectations.

3. Reread the job description. You may want to print it out and begin underlining specific skills the employer is looking for. Think about examples from your past and current work that align with these requirements.

4. Use the STAR method in answering questions. Prepare to be asked about times in the past when you used a specific skill and use the STAR method to tell stories with a clear Situation, Task, Action and Result.

5. Recruit a friend to practice answering questions. Actually, practicing your answers out loud is an incredibly effective way to prepare. Say them to yourself or ask a friend to help run through questions and answers. You'll find you gain confidence as you get used to saying the words.

6. Prepare a list of references. Your interviewers might require you to submit a list of references before or after your interview. Having a reference list prepared ahead of time can help you quickly complete this step to move forward in the hiring process.

7. Be prepared with examples of your work. During the interview, you will likely be asked about specific work you've completed in relation to the position. After reviewing the job description, think of work you've done in past jobs, clubs or volunteer positions that show you have experience and success doing the work they require.

8. Prepare smart questions for your interviewers. Interviews are a two-way street. Employers expect you to ask questions: they want to know that you're thinking seriously about what it would be like to work there. Here are some questions you may want to consider asking your interviewers:

- Can you explain some of the day-to-day responsibilities this job entails?
- How would you describe the characteristics of someone who would succeed in this role?
- If I were in this position, how would my performance be measured? How often?
- What departments does this team work with regularly?
- How do these departments typically collaborate?
- What does that process look like?
- What are the challenges you're currently facing in your role?

Tips for "during the interview". After you've spent time preparing, you can be successful on interview day by practicing these tips:

9. Plan your interview attire the night before. If you're speaking to a recruiter before the interview, you can ask them about the dress code in the workplace and choose your outfit accordingly. If you don't have someone to ask, research the company to learn what's appropriate.

10. Bring copies of your resume, a notebook and pen. Take at least five copies of your printed resume on clean paper in case of multiple interviewers. Highlight specific accomplishments on your copy that you can easily refer to and discuss. Bring a pen and a small notebook.

Prepare to take notes, but not on your smartphone or another electronic device. Write information down so that you can refer to these details in your follow-up thank-you notes. Maintain eye contact as much as possible.

11. Plan your schedule so that you can arrive 10–15 minutes early. Map out your route to the interview location so you can be sure to arrive on time. Consider doing a practice run. If you're taking public transportation, identify a backup plan if there are delays or closures.

Tip: when you arrive early, use the extra minutes to observe workplace dynamics.

12. Make a great first impression. Don't forget the little things—shine your shoes, make sure your nails are clean and tidy, and check your clothes for holes, stains, pet hair and loose threads. Display confident body language and a smile throughout.

13. Treat everyone you encounter with respect. This includes people on the road and in the parking lot, security personnel and front desk staff. Treat everyone you don't know as though they're the hiring manager. Even if they aren't, your potential employer might ask for their feedback.

14. Practice good manners and body language. Practice confident, accessible body language from the moment you enter the building. Sit or stand tall with your shoulders back. Before the interview, take a deep breath and exhale slowly to manage feelings of anxiety and encourage self-confidence. The interviewer should extend their hand first to initiate a handshake. Stand, look the person in the eye and smile. A good handshake should be firm but not crush the other person's fingers.

15. Win them over with your authenticity and positivity. Being genuine during interview conversations can help employers easily relate to you. Showing positivity with a smile and upbeat body language can help keep the interview light and constructive.

16. Respond truthfully to the questions asked. While it can seem tempting to embellish on your skills and accomplishments, interviewers find honesty refreshing and respectable. Focus on your key strengths and why your background makes you uniquely qualified for the position.

17. Tie your answers back to your skills and accomplishments. With any question you answer, it is important that you tie your background to the job by providing examples of solutions and results

you've achieved. Use every opportunity to address the requirements listed in the job description.

18. Keep your answers concise and focused. Your time with each interviewer is limited so be mindful of rambling. Practicing your answers beforehand can help keep you focused.

19. Do not speak negatively about your previous employers. Companies want to hire problem solvers who overcome tough situations. If you're feeling discouraged about your current job, focus on talking about what you've gained from that experience and what you want to do next.

Tips for "after the interview". When the interview is over, give yourself the best chances of moving forward by doing the following:

20. Ask about next steps. After your interview, it is appropriate to ask either your interviewer, hiring manager or recruiter about what you should expect next. This will likely be a follow-up email with results from your interview, additional requirements like an assignment or reference list or another interview.

21. Send a personalized thank you letter after the interview. Ask for the business card of each person you speak with during the interview process so that you can follow up individually with a separate thank you email. If you interviewed in the morning, send your follow-up emails the same day. If you interviewed in the afternoon, the next morning is fine. Make certain that each email is distinct from the others, using the notes you took during the conversations.

IV. Find Russian equivalents of the words.

a) interview	1. должность
b) rambling	2. успешный
c) to hire	3. менеджер по набору персонала
d) body language	4. собеседование
e) recruiter	5. нанимать, искать
f) requirement	6. язык тела
g) salary	7. требование
h) position	8. преодолевать
i) to overcome	9. зарплата
j) successful	10. болтовня

V. In pairs discuss what you can do to create a positive first impression with an interviewer. Think about the following points.

1. Your appearance.
2. Body language.
3. How to 'break the ice' with an interviewer.

VI. In pairs discuss the following interview tips. Write *do* or *don't* next to each tip.

1. Arrive ten minutes earlier.
2. Speak English with a friend before the interview.
3. Bring a close friend or relative with you for support.
4. Take a copy of your CV and examples of your work with you.
5. Learn some impressive words and phrases to use in the interview.
6. Memorize long answers to questions that you anticipate being asked.

VII. Record 4.1. Silvia Carnali has been invited to the interview at the communications agency, Furerra. Before her interview she meets Nina, a human resources manager, for some interview preparation tips. Listen to the conversation. Do you agree with Nina? What tips does Nina mention that are not included in the list above?

VIII. Record 4.2. Read a paragraph, listen to the conversation and answer the following questions.

The outcome of an interview can be decided in the first 5 minutes. From the moment you arrive for an interview you are being assessed. Even before the interview itself begins you will be communicating a message about who you are. In order to create a positive impression, it is important from the moment you arrive what you say is clear, confident and enthusiastic.

1. Why is Mr. Lewis late for the interview?
2. What does Silvia read while she's waiting?
3. What useful information does Silvia get from the receptionist?
4. How does Silvia create a positive first impression with Mr. Lewis?

5. What do Alex and Karl chat about before the interview?
6. How does Alex create a positive first impression with Karl?

VIII a. Responding to questions at an interview is your opportunity to give evidence of your skills and experience, prove you know what the job entails, and demonstrate that you are the best person for the job. In pairs, discuss the following questions.

1. What questions might you expect to be asked in any job interview?

2. What advice would you give somebody about dealing with interview questions?

VIII b. Look at the following common interview questions. Write the type of question (a-c) next to each question (1-12).

a) Questions that require you to talk about yourself, your ambitions, your personality, your hobbies and interests;

b) Questions that require you to prove you have researched the job and company you have applied for work with;

c) Questions that require you to demonstrate you have the skills and experience required for the job.

1. Can you tell us something about yourself?
2. What experience do you have that is relevant for this position?
3. What did you learn during your time at university?
4. What do you see as your strengths?
5. What do you think about our website?
6. What attracted you to the position?
7. How would your colleagues describe you?
8. What sorts of projects did you work on in your last position?
9. What university did you attend and why did you choose it?
10. Now do you typically approach new projects?
11. What do you know about our company?
12. Where do you see yourself in five years' time?

VIII. In pairs, try to think of some more questions for each category (a-c). Which questions would you welcome in an interview? Which questions would you not like to be asked? In pairs, take turns to ask and answer the questions in Exercises VIII b.

Which questions are the easiest to answer? Which are the most difficult?

IX. Employers often use telephone interviews for recruitment, as a way of screening large numbers of applicants before selecting a smaller pool of candidates for face-to-face interviews. In pairs, discuss the following questions.

1. Would you prefer to have an interview face-to-face or on the telephone?

2. Why is it increasingly popular for initial interviews to be held over the phone?

3. What are the advantages of telephone interviews for the candidate?

4. When is the best time to arrange a telephone interview?

5. Why should you smile during a telephone interview?

X. Read the following article and compare the advice with your answers in Exercise IX.

Tackling telephone interviews

It is common practice these days for initial first interviews to be held over the phone. The main reason for this is that it is significantly reduces the cost for employers, who often use telephone interviews as a method of filtering candidates before moving on to face-to-face interviews. Telephone interviews also have benefits for the applicants as well. As well as the obvious financial saving, an applicant may feel more relaxed within their own environment surrounded by their CV and research materials to aid them. You also don't have to wear a suit! It is essential that you organize a time for a telephone interview that is convenient for you. You should suggest a time when you are unlikely to be disturbed, when you are in a quiet environment and you are confident that you have prepared sufficiently to convince the interviewer you are the right person for the job, or at least a second interview.

In pairs, tell your partner about a job you would like to be interviewed for. Look through units 4 and 5 and choose five questions to ask your partner, based on the job they have chosen. Then take turns to ask and answer your questions. Try to use the techniques from these units to make your answers as impressive as possible.

During the interview you should:

• Smile, as this will help you to relax and project a positive image to the interviewer and will alter the tone of your voice.

• Speak slowly and clearly. It's perfectly acceptable to take your time when answering questions.

• Give short, memorable answers.

• Use the person's title (Mr. or Ms. And their last name). Only use a first name if you are invited to.

• Keep a copy of your CV open next to you, so that it's at your fingertips when you need it.

• Have a pen and paper next to you so that you can make notes if you need to.

Remember that your goal is to try and set up a face-to-face interview. At the end of the interview ask if it would be possible to meet in person.

Exercise XI. In pairs, tell your partner about a job you would like to be interviewed for. Choose five questions to ask your partner, based on the job they have chosen. Then take turns to ask and answer your questions.

UNIT X

PROFESSIONAL IT COMMUNITY

VOCABULARY STUDY

Nouns and noun phrases

Hiring – набор сотрудников; GCSE (General Certificate of Secondary Education) entrant – абитуриент с аттестатом об окончании средней школы; exodus – массовый уход; employee – работающий по найму сотрудник; en masse – массово; gap – пробел; Artificial intelligence – искусственный интеллект; CIO (Chief Information Office) – отдел информационных технологий; CEO (Chief Executive Officer) – главный администратор; руководитель организации; enterprise – предприятие; standout – достижение; endeavor – попытка, старание; objective – цель; settings – параметры настройки; treatment – лечение; outcome – окончательный продукт; lack – нехватка, недостаток; chore – обязанности; traction – влияние, результативность; cryptocurrency – криптовалюта;

Adjectives and adjective phrases

Confident – уверенный; large-scale – крупномасштабный; digital – цифровой; bold – смелый; generative – генеративный, воспроизводящий; futuristic – футуристический, фантастичный; crucial – решающий; operational – действующий, практический; sustained – устойчивый, последовательный; cutting-edge technology – продвинутая, передовая технология; nonfungible token – невзаимозаменяемый токен;

Verbs and adverbs

Pledge – обещать; assess – оценивать; reskill – переобучить, приобрести новые навыки; face – сталкиваться; emerge – возникать; maintain – поддерживать на определенном уровне; utilize – использовать; adjust – приспосабливать; eventually – окончательно; roll out – внедрять; push down – сталкивать; gain – приобретать.

I. Match the words with the definitions below.

Pledge, adjust, cutting-edge, hire, exodus, deliver, research, realize, endeavor, maintenance, collaboration, entrant.

1. To work together or with someone else for a special purpose.
2. The movement of a lot of people from a place.
3. To make a serious or formal promise to give or do something.
4. A detailed study of a subject, especially in order to discover (new) information or reach a (new) understanding.
5. Very modern and with all the newest features.
6. To employ someone or pay someone to do a particular job.
7. A person who takes part in a competition or an exam.
8. To give, direct, or aim something.
9. To understand a situation, sometimes suddenly.
10. An attempt to do something.
11. The work needed to keep a road, building, machine, etc. in good condition.
12. To change something slightly, especially to make it more correct, effective, or suitable.

II. Using a dictionary add as many words as possible into the table.

Verbs	Adjectives	Nouns
1. adjust		
2.		industry
3. maintain		
4.	advanced	
5.		assessment
6. collaborate		
7.	confident	

III. Choose the words with similar meaning from the two groups and arrange them in pairs.

A. advanced, eventually endeavor, partnership, renew, drop, entrant, currently, futuristic, realize, organization, crucial, research;

B. fantastic, decrease, key-important, investigation, attempt, enterprise, understand, nowadays, applicant, collaboration, finally, cutting-edge, update.

IV. Complete the sentences with the words below.

Recognition, vehicles, deliveries, AI-powered, templates, capabilities, self-driving, robotaxis, augmented reality, tagged.

1. Many vendors are trying to construct the metaverse, a digital world that brings together … and virtual reality, with 3D avatars, IoT and digital twins.

2. Meta declared that it will shut down its Face … system on Facebook.

3. People using the facial recognition setting on Facebook will no longer be automatically … in photos by the end of the year.

4. Meta plans to delete more than a billion people's individual facial recognition.

5. Azure Open AI Service gives language model customers access to enterprise … such as security, compliance and scale requirements.

6. Many autonomous vehicles enthusiasts were convinced that … cars would be commonplace by now.

7. However, a few … are being tested out on the road, fully self-driving cars are still in the future.

8. There are many hurdles the … technology must overcome.

9. A chief update on autonomous vehicles is safety and ensuring that the … can operate without danger in unpredictable conditions.

10. Recently, Walmart and autonomous transportation vendor Gatik sent out driverless box trucks to make … in Arkansas to ease the endemic supply chain problems.

V. Make up your own sentences using the following words and word combinations.

Professional IT Community, advanced tech skills for work, to work from home, to reskill specialists, training opportunities, to improve the algorithms, software updates, to design systems and application, cutting-edge technologies, to gain traction in the market, blockchain technology.

VI. Translate into English.

Выбор языка программирования

Существует много споров, в которых приверженцы того или иного языка программирования доказывают его превосходство над другими в бэкенд-разработке. Но не стоит забывать, что язык – лишь инструмент, и какой выбрать – зависит от поставленной цели и уже имеющихся знаний.

Допустим, если вы уже знаете JavaScript и вообще решили освоить бэкенд после фронтенда, хорошим выбором станет Node.js:. Знаете Python? Что ж, Django также предоставляет много готовых решений для серверной части. За Java стоит браться, если перед вами сложный долгоиграющий проект, а если же веб-приложение небольшое, писать для него бэкенд на Java – всё равно что золотым молотком гвозди забивать. Неизменной классикой по-прежнему остаётся PHP, ведь на этом языке действительно разработано подавляющее большинство современных сайтов.

A. TEXT STUDY

I. Read the text and complete the exercises below.

Text A. Professional IT Community

Young people don't feel they have advanced digital skills for work. Despite increased job creation and hiring within the technology industry over the past year, the UK's IT skills gap remains.

A huge effort has been made in recent years to ensure young people have the digital skills needed for the future of work, but many young people are still not confident they have the more technical skills needed for roles in the tech industry.

Research by the Learning and Work Institute, in partnership with WorldSkills UK, found most young people know digital skills will be important for their future careers, but only 18% feel they have the more advanced tech skills employers might need from them. Number of students taking A-level computing rose in 2021.

The number of girls taking the subject remained low when compared with the number of boys, and when it came to computing GCSE entrants, the number of girls taking the subject actually dropped in 2021.

Is the tech sector facing an IT skills exodus?

The pandemic had many people, both in and outside of the technology sector, thinking about what they actually want from their lives and their careers, especially when it was proven people don't necessarily need to collect in an office to deliver good quality work.

A large number of technology workers are currently thinking of changing role or switching companies, while according to figures from CWJobs around 8% of those in the industry are looking to move out of the tech sector altogether.

As the pandemic forced many businesses to allow their employees to work from home en masse, people began to realize there is less need to gather in and around the capital.

IBM pledges to reskill 30 million people by 2030. Collaboration has long been cited as one of the best ways to develop people's digital skills, and tech giant IBM announced in 2021 it would be partnering with education providers, government departments and other organizations across 30 countries to give 30 million people worldwide new technology-based skills by 2030.

When explaining the reasoning behind the plans to deliver large-scale digital skills initiatives, IBM chairman and CEO Arvind Krishna said: "Talent is everywhere – training opportunities are not. This is why we must take big and bold steps to expand access to digital skills and employment opportunities so that more people – regardless of their background – can take advantage of the digital economy."

Despite all the work done to close skills gaps, IT leaders still can't find the skilled workers they need to fill their empty digital roles. According to the research by Skillsoft, three-quarters of IT leaders worldwide are facing critical skills gaps within their departments. To make matters worse, research by Boston Consulting Group also found a large number of IT workers have plans to move jobs within the next three years, with many looking to move as soon as possible.

II. Choose the best option to the following statements.

1. IT skills gap remains …

a) although there is a significant increase of salary.

b) despite increased job creation and hiring within the technology industry recently.

c) nonetheless a large number of IT workers have plans to promote their careers.

2. The number of girls taking the subject remained …

a) the same for a long period of time.

b) high when compared with the number of boys.

c) low when compared with the number of boys.

3. A large number of technology workers are currently …

a) being promoted in IT companies.

b) being reskilled.

c) thinking of changing role or switching companies.

4. … has long been cited as one of the best ways to develop people's digital skills.

a) Intensification

b) Collaboration

c) Time-management

5. Big and bold steps are taken to expand access to digital skills and employment opportunities so that more people …

a) can take advantage of the digital economy.

b) can earn more money.

c) can change their jobs.

III. Comprehension Check. State whether the statements are true or false. Correct if necessary.

1. Many young people are still not confident they have the more technical skills needed for roles in the tech industry.

2. The number of girls taking the A-level computing rose in 2021.

3. 55% of IT leaders worldwide are facing critical skills gaps within their departments.

4. "Training opportunities are everywhere – talent is not."

5. The pandemic forced many businesses to allow their individual employees to work from home.

IV. Fill in the necessary prepositions (on, by, at, through, of, for) and retell the text.

How to improve information technology skills

There are many resources available to help improve your IT skills and knowledge. Once you know what skills you need, you can work … developing them and improving them.

Obtain certifications. One … the best ways to improve your IT skills is to continue your education. Take a class … your local commu-

nity college, whether it's a general computer class or project management class. If you already have a degree, you can enhance your resume … taking additional IT certification classes. Many of these are available online and are one of the quickest ways to expand your IT skills.

Get on the job training. There is no better way to learn than to get hands-on training. Ask … more responsibility at your current job, and use it as a learning tool.

Practice what you already know. If you have basic skills, use them as often as you can. Research free online tools to help you work on the skills you want and need for your next job.

Establish your weak points. Take a look at your skills and determine where you need work. If you can, find a mentor that can help or read technical step-by-step guides and work … them.

Keep up-to-date with the latest technology news. Make sure you always have the latest information technology news and trends. Join IT forums and read the latest discussions. Research the most in-demand IT jobs and what certifications and education is needed for these jobs.

B. TEXT STUDY

I. You are going to read an article about researching the job market. 5 sentences have been removed from the article. Choose from the sentences A-F the one, which fits each gap (1-5). There is one extra sentence, which you do not need to use.

A. Generative AI can be used to discover new products in research and development settings.

B. Autonomic systems are designed to work in complex environments with rapidly changing conditions, such as in cybersecurity where the threat landscape is constantly shifting.

C. Smart contracts are automated agreements between participants.

D. Groombridge echoed Hopkins' thinking, adding that it's critical for CIOs heading into 2022 to have an objective for new and emerging technologies and to execute that plan.

E. The information technology skills you need for success in the workplace include both technical skills and interpersonal skills.

F. Lack of maintenance can cause the AI algorithms to eventually lose value.

Text B. Top technology trends come down to
CIO strategy in 2022

Artificial intelligence and building trust ecosystems will be top technology trends for CIOs and business leaders to pay attention to in 2022.

AI will continue to be an enterprise standout over the next three years, according to Gartner analyst David Groombridge. Whether it's generative AI that uses existing content to create new, similar content, or more futuristic endeavors such as autonomic systems that improve their algorithms automatically without software updates, AI should remain a focus area for CIOs in 2022.

But Groombridge as well as Forrester Research analyst Brian Hopkins aren't only focused on what's next technologically for businesses in 2022, they're also thinking about what CIOs need to do strategically. Hopkins said that for CIOs to take advantage of technologies like AI, it's important to focus on establishing trust with other businesses and building a network that can maximize opportunities [1].

Generative AI algorithms that assess existing data, such as text, audio or visual files, recognize the underlying pattern of that data and then replicate the pattern to generate similar content, is a top technology trends for CIOs to watch in 2022[2]. There have been uses of it to identify new medicines and it was even used to rapidly identify potential treatments for COVID.

On the operational side of AI, it will be crucial for CIOs to pay attention to AI engineering, a discipline focused on designing systems and applications to better utilize and optimize AI in the enterprise.

As businesses recognize AI's potential and rush to build products, they will likely encounter a new challenge -- maintaining the AI algorithms. As input data for models changes and as business outcomes change, the models themselves need adjusting [3].

For those who haven't considered the chore of maintaining AI algorithms over time, business leaders will be forced to go through a lengthy process of manually updating a complex interplay between data, the AI model and the applications that are using that. AI engineering seeks to operationalize all of that and ensure that there are rapid and automated ways of rolling out updates to the AI to ensure that value is sustained. Autonomic systems make their own choices and operate in-

dependently. They're able to learn and adjust their behavior in response to experiences and altered conditions.

It doesn't have to wait for that software update to be pushed down by a manufacturer; it can change its own algorithms automatically [4].

Other cutting-edge technologies that gained traction in the market nowadays but likely won't be pressing for CIOs in future include quantum computing, blockchain, nonfungible tokens and cryptocurrency. While some industries have made technologies like these an important part of their companies' technical capabilities, the impact to IT business leaders now is still low.

Building trust ecosystems. Forrester's Brian Hopkins said the game has changed when it comes to CIOs taking advantage of emerging technologies in the market.

Hopkins said the way for CIOs to do that is by building trust ecosystems, which are built through authentications that give businesses control over what data is shared and how. In a trust ecosystem, businesses work collaboratively to apply emerging technology onto their business models; by relying on an authentication process, they can trust that their data is only being used as permitted.

The authentications can be achieved through blockchain technology to create smart contracts between businesses that protect individual data [5]. Trust ecosystems and all the technologies that enable the building and keeping of trust, that's the future.

II. Read the text and answer the following questions.

1. What are the top technology trends for CIOs and business leaders in 2022?

2. What is an enterprise standout?

3. Why is it important for businessmen to focus on establishing trust with other businesses and building a network?

4. What does AI engineering focus on?

5. What is able to learn and adjust the behavior in response to experiences and altered conditions?

III. Give the main points of the text in 4-7 sentences. Use the following clichés.

The text is concerned with ... . It should be noted that ... . are considered. It should be remembered that ... . The fact that ... is stressed. The author draws the following conclusion ... .

IV. Translate from Russian into English. Wildberries начал тестировать дроны для доставки заказов

Онлайн-ритейлер Wildberries начал тестировать беспилотники для доставки товаров. Использование дронов, как ожидается, должно усилить новые эко-инициативы компании. Приоритетным направлением их использования может стать доставка товаров в труднодоступные регионы.

Беспилотные летательные аппараты работают как на бензиновом двигателе, так и с помощью перезаряжаемого аккумулятора, это зависит от модели дрона. Дальность их полета составляет 300 км, а максимальная полезная нагрузка – около 200 кг.

В Wildberries подчеркивают, что одно из основных преимуществ дронов на аккумуляторах – экологичность. Их использование позволяет сократить углеродный след. Кроме того, при доставке беспилотниками уменьшается также объем упаковки, который используется при транспортировке товара на большие расстояния.

V. Fill in the necessary prepositions and retell the text.

An overview of information technology skills

Whether you are an experienced IT professional or a new graduate working to get a leg up in the IT field, there are some specific skills and general personality traits that are necessary … you to succeed … your chosen field. While it's important to develop the technical skills required to perform in an information technology position, it is also essential to have the soft skills that help you function as part of a team. If you are looking to get started as an IT professional or advance your career, here are the IT skills you'll need.

What are information technology skills? The IT field continues to grow as technology advances and changes. With these changes, job expectations, job descriptions, and even job titles continue to change too.

Information technology skills encompass the skills employers look … when hiring … an IT position. They include both hard skills such as specialized technology knowledge such as cloud security, and coding skills, and soft skills such as good communication and organization.

Examples of information technology skills. Information technology jobs require a particular set … skills. If you have a good balance … the hard technical skills and knowledge needed to perform the specific job and the soft skills and personality traits that make you a desirable employee, you can become a well-rounded IT professional.

These IT skills make you an excellent candidate.

Cloud computing. As companies continue to move towards cloud computing, they need in-house expertise to migrate their data and create a cloud-friendly workflow. You can show recruiters that you have the skills needed … cloud computing by getting your certification from Amazon Web Services, the Google Cloud Academy, or Microsoft Azure. The certification you need will depend … the specific position and the industry, but having a certification will show employers you have the capability.

Network and information security. Companies need to protect their data, which requires qualified IT employees. A cybersecurity position requires IT job skills such as database modeling, open-source application knowledge, and proficiency … systems including Linux OS and Microsoft technologies.

Mobile engineering. Mobile engineering is a growing IT skill for companies who have employees who want the same experience … their mobile devices as their desktops. Mobile development skills will open up many job opportunities.

Full stack web development. Any IT professional should demonstrate an in-depth knowledge of programming languages such as Java, Python, and PHP.

Data mining and analysis. Data mining is big business no matter what the industry. If you have knowledge and experience … data mining and related statistical analysis such as Apache Hadoop, NoSQL, and SQL, your resume will stand out to hiring managers and recruiters.

Project management skills. Most IT departments have several projects going on. A good IT professional will have the skills to effectively work … different projects simultaneously to help make sure each one meets its deadline. Project management skills will make you an appealing candidate.

Communication. As an IT professional, you'll need to works … other information technology professionals, management, and in some cases, vendors. Good written and verbal communication skills are essential to keep your team informed, exchange ideas … colleagues and your reporting line, and keep your customers up to date … a project's progress.

Analytical skills. Many IT jobs require analytical skills. You'll need to find solutions to problems almost every day … an IT position, whether it's figuring out why a server is down or determining a specific line … code that isn't working.

Organization. Having good organizational skills will make working … an IT position more productive. Multi-tasking is necessary every day, and in order to multitask you need to stay organized.

Problem solving. Problems come up throughout your day no matter what job you do. The ability to work … these problems independently and as a team makes you a good employee. Employers value people who can take on problems, brainstorm ideas to fix them, come up … a solution, and implement it.

Negotiation. Even IT professionals need the ability to negotiate. Whether it's finding common ground while working on a project with your team members or negotiating terms with a vendor, you will need this skill in order to reach goals and build relationships.

UNIT XI

INFORMATION SYSTEMS AND TECHNOLOGIES

VOCABULARY STUDY

Nouns and noun phrases

Data – данные; subset – подмножество; degree of commonality – степень унификации; hierarchy – иерархия; transfer – перенос; semiconductor –полупроводник; definition – определение; processing – обработка; application –применение, приложение; information systems umbrella – система обобщённых компонентов информационной системы; per say – в буквальном смысле.

Adjectives

Electronically mediated communications – электронные устройства для передачи информации; multidisciplinary – многопрофильный; interdisciplinary – междисциплинарный; constituent – составляющий компонент.

Verbs

Store – хранить; retrieve – извлекать; transmit – передавать; manipulate – манипулировать, обрабатывать; facilitate – упрощать, облегчать; encompass – охватывать; establish – основывать; disseminate – распространять; implement – осуществлять; evolve– развивать, формировать; herald – объявлять, возвещать; harness– укрощать, использовать, приспосабливать под свои нужды.

I. Match the words with the definitions below.

Commonality, harness, umbrella, constituent, distribution, establish, retrieve, application, herald.

1. A way in which something can be used for a particular purpose.

2. To find and bring back something; to get stored information from a computer.

3. The sharing of a set of features, or a particular feature that is shared.

4. The process of giving things out to several people, or spreading or supplying something.

5. To cause something or someone to be accepted in or familiar with a place, position, etc.

6. Something that includes or represents a group or range of similar things.

7. Relating to one of the parts that a substance or combination is made of.

8. A sign that something will happen, change, etc.

9. To control something, usually in order to use its power.

II. Using a dictionary add as many words as possible into the table.

Verbs	Adjectives	Nouns
1. to compute		
2.		application
3. to communicate		
	programmable	
4.		establishment
5.		
6. to implement		simulation
7.		

III. Choose the words with similar meaning from the two groups and arrange them in pairs.

A. Hierarchy, information, computer, established, umbrella, multidisciplinary constituent.

B. Part, hardware, field, name, level, transfer, systems.

IV. Complete the sentences with the words below.

Transform, promising, information, implement, principles, over-lapped, software, programmable, compiling, calculations.

1. Computer programming deals with the design of … .

2. I didn't think that Information Technologies often … with bio-nomics (i.e. ecology).

3. The term «computer» was originally given to humans who performed numerical … using mechanical calculators, such as the abacus.

4. Charles Babbage was a famous English mathematician, who first proposed a … machine.

5. Social informatics is considered to be a … discipline.

6. Some of the individuals will become skillful enough to … the information into knowledge.

7. I knew all main … of predicate logic at the exam yesterday.

8. The computer and the resultant Information Age heralds a time when every person can harness more … in practical ways than ever before.

9. By the first of September they will have been working at … this program for 15 months.

10. The idea to … Information Technologies into teaching process has attracted the attention of the academic staff.

V. Make up your own sentences using the following words and word combinations.

Information and communications technology (ICT), electronically mediated communications, information distribution technologies, established name, techniques for processing, simulation of higher-order thinking, information systems umbrella, interdisciplinary computer science field.

VI. Translate into English.

Как сегодня используются компьютеры?

Сегодня компьютеры выполняют работу, которая раньше была сложной, намного проще. Например, вы можете написать письмо в текстовом редакторе, отредактировать его в любое время, проверить орфографию, распечатать копии и отправить кому-то по всему миру за считанные секунды. Все эти действия раньше заняли бы у кого-то дни, если не месяцы. Кроме того, эти примеры – лишь малая часть того, что могут сделать компьютеры.

A. TEXT STUDY

I. Read the text and answer the following questions.

1. What unites computers, television and telephones?

2. The term Information technology is a peculiar one, as it appeared in modern sense in about 3000 BC, isn't it?

3. What are computers applied in information technology for?

4. What are the categories of the Information technology?

5. What is a subset of information and communications technology?

6. How did the Sumerians in Mesopotamia store, retrieve and manipulate information?

7. What is the definition of IT?

8. Why is it possible to present a pencil and a piece of paper as an information system example?

9. What is the main function of an Information System?

Text A. Information Systems and Technologies

Information technology (IT) is the application of computers to store, study, retrieve, transmit, and manipulate data, or information, often in the context of a business or other enterprise. IT is considered as a subset of information and communications technology (ICT). In 2012, Zippo proposed an ICT hierarchy where each hierarchy level contains some degree of commonality in that they are related to technologies that facilitate the transfer of information and various types of electronically mediated communications.

The term IT is commonly used as a synonym for computers and computer networks, but it also encompasses other information distribution technologies such as television and telephones. Several industries are associated with information technology, including computer hardware, software, electronics, semiconductors, internet, telecom equipment, and e-commerce.

Humans have been storing, retrieving, manipulating, and communicating information since the Sumerians in Mesopotamia developed writing in about 3000 BC but the term IT in its modern sense first appeared in a 1958 article published in the Harvard Business Review. It's authors Harold J. Leavitt and Thomas L. Whisler commented: "The new technology does not yet have a single established name. We shall call it information technology (IT)". Its definition consists of three categories: techniques for processing, the application of statistical and mathematical methods to decision-making, and the simulation of higher-order thinking through computer programs.

The conception of IT is closely associated with Information Systems. IT falls under the information systems umbrella but has nothing to do with systems per say. IT deals with the technology involved in the systems themselves, e.g. an information system contains many in-

formation technologies such as servers, server operating systems, web server software etc.

An Information System (IS) is a large umbrella referring to systems designed to create, store, manipulate or disseminate information. An example of an information system is a pencil and a piece of paper. The two objects themselves are just tools, but together they create a system for writing information. IS is implemented within an organization for the purpose of improving the effectiveness and efficiency of the organization. Capabilities of the information system and characteristics of the organization, work systems, people and development methodologies together determine the extent to which that purpose is achieved.

As an area of study IS and IT include the multidisciplinary business field and the interdisciplinary computer science field that is evolving toward a new scientific discipline. IS and IT course is a broader field that includes computer science course as its main constituent part.

II. Choose the best option to the following statements.

1. Computers are …
a) the most important part of our life.
b) an essential part of our life.
c) very friendly to users.
2. As an area of study IS and IT includes …
a) the multidisciplinary industrial field and the interdisciplinary computer science field.
b) the multidisciplinary business field and the interdisciplinary computer science field.
c) the multidisciplinary social field and the interdisciplinary computer science field.
3. Computers have different …
a) bacterium.
b) viruses.
c) worms.
4. An example of an information system is …
a) a pencil and a piece of paper.
b) a set of writing.
c) a calculating table.
5. An information system contains …

a) many information technologies.

b) many computers.

c) many manufacturing technologies.

6. … to decision-making is the main task of an analyst-programmer.

a) The developing new solutions ...

b) The application of new software ...

c) The application of statistical and mathematical methods ...

7. The term IT is commonly used as …

a) a synonym for computers and computer networks.

b) a synonym for computers and computer software.

c) a synonym for iPod and computer networks.

8. With the help of computers users …

a) get control to the Internet.

b) get access to the Internet.

c) lose access to the Internet.

9. Information technology is …

a) the application of computers to store, study, retrieve, transmit, and manipulate data.

b) the application of computers to store, study, retrieve, transmit, and manipulate people.

c) the application of computers to store, study, retrieve, transmit, and manufacture data.

10. The term IT in its modern sense first appeared …

a) in a 1958 article published in the Harvard Business Magazine.

b) in a 1958 article published in the Harvard Business Review.

c) in a 1958 article published in the Harvard Business Review Journal.

III. Comprehension Check. State whether the statements are true or false. Correct if necessary.

1. Information technology is the theory and practice of using computers to store and analyze information.

2. Each level in the ICT hierarchy proposed by Zippo contains some degree of particularity in that they are related to technologies that facilitate the transfer of information.

3. The term computer network is very closely associated with the term Information technology.

4. Television and telephones are within the compasses of the term IT.

5. Information technology is a broad notion as it embraces computer hardware, software, electronics, semiconductors, internet, telecom equipment, and e-commerce.

IV. Fill in the necessary prepositions.

1. The term Information technology in its modern sense first appeared … a 1958 article. 2. IT deals with the technology involved … the systems themselves. 3. The term IT is commonly used … a synonym … computers and computer networks. 4. An ICT hierarchy is where each hierarchy level contains some degree … commonality in that they are related … technologies that facilitate the transfer of information. 5. Information technology is the application … computers to store, study, retrieve, transmit, and manipulate data often … the context of a business enterprise. 6. The conception of Information technology is closely associated … Information Systems. 7. Due … computers modern medicine can diagnose diseases faster and more effectively. 8. With the help of computers we get access … the Internet.

V. Fill in the necessary articles.

1. Workers use handheld computing devices to collect data at … customer site, to generate forms, to control inventory. 2. With small computing devices available for controlling … flow of information in … organization people are able to spend more time being active. 3. Computers can help … people work more creatively. 4. Multimedia combines … text with sound, video, animation and graphics, which greatly enhances … interaction between user and machine. 5. Personal computers have … potential to significantly improve … way we relate to each other. 6. Many people today telecommute – that is, use their … computers to stay in … touch with … office while they are working at … home. 7. With … proper tools, hospital staff can get … diagnosis from … medical expert hundreds or thousands of miles away. 8. … disabled can communicate more effectively with others using computers.

I. You are going to read an article about types of computers. 5 sentences have been removed from the article. Choose from the sentences A-F the one which fits each gap (1-5). There is one extra sentence which you do not need to use.

A. These devices usually do not have keyboards but rely on touchscreen technology for user input.

B. Their low cost means they're cheaper than almost any brand-new laptop you'll find at retail outlets. However, the internal components are less powerful than those in regular laptops.

C. Servers allow many computers to share a printer or other devices without the cost of having to buy one for every computer.

D. PCs were first known as microcomputers because they were a complete computer but built on a smaller scale than the huge systems in use by most businesses.

E. Many of today's great movies use supercomputers for their CGI.

F. The glasses can stream information to the lenses and allow the wearer to send and receive messages through voice commands.

Text B. Types of Computers

There are a lot of terms used to describe computers. Most of these words imply the size, expected use or capability of the computer. While the term computer can apply to almost any device that has a microprocessor in it, most people think of a computer as a device that receives input from the user through a mouse or keyboard, processes it in some fashion and displays the result on a screen. Do you know the different types of computers?

PC. A single person defines the personal computer, or PC, as any computer designed for general use by one person. While a Mac is a PC, most people relate the term with computers that run the Windows operating system. (1) Personal computers come in many forms, including the new Apple iPad.

Desktop. A PC that is not designed for portability is a desktop computer. The expectation with desktop systems is that you will set the computer up in a permanent location, like a desk or table. Most desk-

tops offer more power, storage and versatility for less cost than their portable brethren.

Laptop. Also called notebooks, laptops are portable computers that mix the display, keyboard, a pointing device or trackball, processor, memory and hard drive all in a battery-operated package slightly larger than an average hardcover book.

Tablet computer. Tablet Computers are ultra-portable computers that are even smaller than traditional laptops. (2) Recent improvements to tablet computers have allowed users to view HD video, get high quality sound, great photo capabilities, and the ability to share information, photos, and videos with anyone.

Smartphone. Smartphones are handheld-sized computers that often use flash memory instead of a hard drive for storage. (3) Smartphones are typically smaller than a paperback novel, very lightweight with a reasonable battery life. Smartphones have the same capabilities as tablet computers, but also allow users to text or make phone calls.

Workstation. Another type of computer is a workstation. A workstation is simply a desktop computer that has a more powerful processor, additional memory and enhanced capabilities for performing a special group of tasks, such as 3D Graphics or game development. They may even use multiple screens to enhance their viewing.

Server. A computer that has been optimized to provide services to other computers over a network. Servers usually have powerful processors, lots of memory and large hard drives. (4) Servers also allow users to share information and files with each other. The computers in this lab are part of a network.

Mainframe. In the early days of computing, mainframes were huge computers that could fill an entire room or even a whole floor! As the size of computers has diminished while the power has increased, the term mainframe has fallen out of use in favor of enterprise server. You'll still hear the term used, particularly in large companies to describe the huge machines processing millions of transactions every day. Mainframes store vast amounts of information.

Supercomputer. This type of computer usually costs hundreds of thousands or even millions of dollars. Although some supercomputers are single computer systems, most are composed of multiple high-performance computers working in parallel as a single system. Supercomputers are the fastest, most powerful, most expensive computers

made today. The best-known supercomputers are built by Cray Super-computers. They can perform over a trillion calculations per second.

Wearable computer. The latest trend in computing is wearable computers. Essentially, common computer applications (e-mail, database, multimedia, calendar/scheduler) are integrated into watches, cell phones, visors and even clothing. Users can use these devices for health and fitness, navigation, social networking, and gaming. Google can now augment a person's vision through special computer glasses. (5) There is also a built-in camera to record video and take pictures.

II. Read the text and answer the following questions.

1. Enlist the types of computers.
2. What are the forms of personal computers?
3. What does server provide?
4. What stores vast amounts of information?
5. What is latest trend in computing? Give examples.

III. Give the main points of the text in 4-7 sentences. Use the following clichés.

The information presented in the text ... . On the one hand ... , on the other hand ... . There was some new information for me ... . I find this text ... . I like (dislike) the text ... .

IV. Fill in the gaps with prepositions where necessary.

The first thing that you will notice ... tablet PC's is that they do not feature a physical keyboard. Many on-screen keyboards take ... the bottom half ... the screen, when being used and will give you some loss ... usable screen size. The keyboards on laptops are much better ... anyone who does a lot ... typing. The trackpad ... laptop computers is a touch sensitive area about 3 inches ... 2 inches ... size. Directly below the trackpad are two small buttons used ... right and left click.

V. Translate from Russian into English.

За последние 50 лет постоянно расширялась сфера применения компьютеров, при этом можно выделить несколько этапов этого процесса.

Первый этап: применение цифровых систем, прежде всего компьютеров, для решения сложных вычислительных задач, связанных с большим объемом расчетов. В их числе задачи моделирования процессов, которые сложно воспроизвести физически.

Второй этап: использование компьютеров совместно с теми или иными изделиями с целью мониторинга их состояния или задействование их в бизнес-процессах для надежного хранения информации, ее быстрого извлечения в удобной форме и передачи по каналам связи. Компьютеры, однако, непосредственного влияния на изделия или процессы не оказывают. Управление изделиями или процессами остается прерогативой людей. Основу компьютерного парка на втором этапе составляют персональные компьютеры и их сети.

Третий этап: встроенные компьютерные системы, управляющие работой изделий и их совокупностей, а также выделенные компьютерные системы, непосредственно функционирующие для достижения целей того или иного процесса. На третьем этапе цифровые системы имеют целевую функцию, совпадающую с целевой функцией изделия или процесса. Можно сказать, что разделить цифровую систему и изделие или процесс теперь невозможно. Компьютеры встраиваются буквально во все — от пылесосов, телефонов и микроволновых печей до высокотехнологичных производств. Более того, компьютеры теперь ближе и к человеку, они становятся персональными, а затем — с уменьшением в размерах — носимыми и мобильными. Сегодня уже есть примеры того, что микропроцессоры начали вживлять в человеческое тело.

VI. Conversational Practice. Read the dialogue.

Computers in our Life
Bernard: Hello! How are you?
Jack: Hi. I'm fi ne. And you?
Bernard: I'm OK. What are you doing?
Jack: I'm writing an essay.
Bernard: What is the essay about?

Jack: It's about the role of computers in our life.

Bernard: Oh, it's interesting. Is it positive or negative?

Jack: Of course, it's positive. Personally, I think that computers have only advantages.

Bernard: To be honest, I don't agree with you.

Jack: Why? Nowadays we can't imagine our life without them. They are our brain.

Bernard: Don't forget computers are dangerous to our health. The monitors are harmful for eyesight. Moreover, working with computers for a long time can cause epilepsy.

Jack: Due to them modern medicine can diagnose diseases faster and more effectively. They control all data on hard disks. Imagine how much paper would have to be used, how many trees would have to be cut just to store information.

Bernard: But computers have different viruses. The biggest problem is when your hard disks break down and you lose your documents.

Jack: Ok, tell me, please, how you can watch movies, listen to the music, play games without computers?

Bernard: It's the main threat. Because of this, you can be computer addict. Moreover, teenagers have access to pornography and bloody games.

Jack: With the help of computers, we get access to the Internet. There are free calls from different countries which make the world smaller. Nowadays, it takes just a minute to buy a ticket and check in hotels of other countries. You can easily shop online everywhere. Also, they are wide-spread in education. Furthermore architects, designers and engineers can't do their work properly without computers. And they … .

Bernard: Stop, please. I understood you. You are right that computer is an essential part of our life. I just want to prove you that they have disadvantages as well as advantages. It will be better to mention them too.

Jack: Do you want to say that I should write two essays?

Bernard: No, just write down pros and cons of computer in one essay while comparing them.

Jack: Good idea! Thank you very much!

Bernard: Not at all!

VII. Answer the following questions to the dialogue. Role-play the dialogue with your partner on analogy.

1. What do the friends think about the role of computers in our life? Whom do you agree with? 2. What is the main advantage of the computer? 3. Which computer capacity helps to save such natural resources as trees? Why? 4. The computers have got only positive characteristics, haven't they? 5. What can make you computer addict? 6. How can the Internet make the world smaller? 7. Whom are computer viruses dangerous for? 8. How can computers be hazardous to human health?

VIII. Open the brackets and put the right form of the verb.

1. Information is data that has been processed into a form that (has been / was / is) meaningful to the user. 2. Information systems and technologies (became / will become / have become) a vital component of businesses and organizations. 3. People (relied / rely / are relying) on information systems to communicate with each other using a variety of physical devices, information processing instructions and procedures. 4. In 2012, Zippo (has proposed / will propose / proposed) an ICT hierarchy where each hierarchy level contains some degree of commonality. 5. Humans (had stored / have been storing / will store) information since the Sumerians in Mesopotamia developed writing in about 3000 BC. 6. Summarization and message routing are the two methods that (have been increasing / will increase / increase) the sending and receiving efficiency of the system.

IX. Speak about information systems and technologies, types of computers using key words, phrases and the topic sentences.

UNIT XII

COMPUTER ESSENTIALS

VOCABULARY STUDY

Nouns and noun phrases

Central processing unit – центральный процессор; electronic circuit – электрическая цепь; firmware – встроенное ПО; RAM (Random Access Memory) – оперативное запоминающее устройство (ОЗУ); ROM (Read only memory) – постоянное запоминающее устройство (ПЗУ); circuitry – электрическая схема; floppy drive – накопитель на гибких магнитных дисках; hard drive /hard disk – жёсткий диск; fetch step – стадия выборки информации; decode step – стадия декодирования; execute step – стадия исполнения команд; writeback step – выдача результатов, выполненных процессором команд; USB port – порт универсальной последовательной шины; socket – электрическая розетка, разъем; chipset – набор микросхем; disk drive – дисковод; clock generator – генератор синхроимпульсов, тактовый генератор; PS / 2 connector – 6-штырьковый разъём.

Adjectives – non-volatile memory – энергонезависимая долговременная память; volatile memory – кратковременная память, temporary storage – ЗУ для временного хранения информации, two-dimensional motion – двумерное движение, peripheral bus – периферийная шина; performance speed / operation speed – скорость обработки информации; key matrix – клавиатурная матрица.

Verbs

Perform – выполнять; underestimate – недооценивать, приуменьшать; imply – подразумевать; define – определять; bootstrap – выполнять загрузку.

I. Match the words with the definitions below.

Screenshot, computer storage, monitor, software, punch card, firmware, magnetic drum, chipset, motherboard.

1. A set of commands which are stored on a chip rather than as part of a program because the computer uses them very often.

2. A magnetic data storage device.

3. A piece of stiff paper that was used to contain digital information in old computers.

4. A visual display unit.

5. A set of programs.

6. The main printed circuit board found in general purpose microcomputers and other expandable systems.

7. A collection of integrated circuits which are designed to function together as a unit, especially to perform a particular task within a computer system.

8. A digital image of what should be visible on a monitor, television, or other visual output device.

9. A technology consisting of computer components and recording media that are used to keep digital data.

II. Using a dictionary add as many words as possible into the table.

Verbs	Adjectives	Nouns
1. to generate		
2.		performance
3. to install		
4.	magnetic	
5.		processing
6. to store		
7.		charge

III. Choose the words with similar meaning from the two groups and arrange them in pairs.

A. processing, arithmetic/logic, computer, storage, instant, electronic, performance

B. Speed, feedback, switch, capacity, storage, unit (Ч2).

IV. Complete the sentences with the words below.

Software, operating systems, communicate, central processor unit, Digital Age, graphical user interface, online course components, networks.

1. The idea of information age is usually linked to the concept of … , Digital Revolution or Computer Revolution.

2. Professors are pushing for the … to include more of the multimedia Web experience the Net Generation students are accustomed to.

3. Computers would need … to make them do useful things.

4. Computing has made many evolutionary leaps over the decades - from the command line to the … from stand-alone PCs to a globally connected Internet.

5. PC can recognize speech and handwriting, create realistic animation, and enable people to collaborate, … and find information around the world, but we've barely scratched the surface of the PC's potential.

6. To date, tests have shown that 5G … are starting to show high performance in various scenarios, such as densely populated urban areas and indoor access points.

7. Microsoft and Google are developing new unique … that allow you to offer an interface for any screen sizes and devices of any power.

8. The basic components of a modern digital computer are: input device, output device, … mass storage device and memory.

V. Match the synonyms given below.

1. accurate 2. available 3. to communicate 4. essential 5. to provide 6. versatile 7. to perform 8. to facilitate 9. simultaneously 10. to search for.

a) to ease b) precise c) to look for d) to interact e) accessible f) at the same time g) fundamental h) to give i) to accomplish j) multipurpose.

A. TEXT STUDY

I. Read the text and answer the following questions.

1. What are the main parts of a computer?
2. What is a monitor used for?

3. What other output devices do you know?

4. What parts does a computer motherboard consist of?

5. Monitor is a visual display unit, isn't it?

6. RAM is a volatile form of computer memory, isn't it? How does it operate?

7. How do the buttons of a keyboard work?

8. Was Lenovo the first successful mouse-driven computer? What other modern computer brands do you know?

9. How does a mechanical mouse work?

10. How many stages can CPU operation be divided into? Describe all of them in detail.

Text A. What are the Main Parts of a Computer?

A computer is a complex machine that is capable of performing huge computations at an extraordinary speed. Its processing power is often compared to that of human brain. Although human intellect is the undoubted winner in this competition, the capabilities of a computer cannot be underestimated. This complex machine influenced from the design of a human brain, mainly consists of a processing unit, an arithmetic/ logic unit, computer storage, and input/ output devices along with its peripherals. All the parts make the whole system.

Central Processing Unit (CPU). Also known as the computer processor, The CPU is an electronic circuit that executes computer programs. The primary responsibility of a computer processor is to execute a sequential set of instructions that constitute a program.

CPU operation can be divided into four basic steps, namely, fetch, decode, execute, and writeback. During the fetch step, the processor retrieves program instructions from memory. In the decode step, the instruction is broken down into parts. The instruction set architecture of the CPU defines the way in which an instruction is decoded. In the execute step, CPU performs the operation implied by the program instruction. During the writeback step the CPU writes back the results of execution to the computer's memory.

Motherboard. A computer motherboard consists of sockets in which microprocessors are installed, memory slots, a chipset that acts as an interface between the CPU bus and the peripheral buses (a bus connects all the internal parts of a computer), non-volatile memory chips housing the system's firmware and a clock generator, which

helps in the synchronization of various system components. Some motherboards also include logic and connectors to support input devices like PS/2 connectors for a mouse and keyboard.

Hard Disk. A hard disk is described as a part of the computer – which stores data and provides computer users with quick access to large amounts of data. A hard disk is an electromagnetically charged surface or a set of disks that record data in concentric circles known as tracks. It is a non-volatile storage device that stores digitally encoded data. The hard disks of desktops are generally capable of storing 120 GB to 200 TB of data. Laptop hard disk drives are smaller and have lower data storage capacities.

Computer Memory. It refers to those components of a computer, which retain digital data. It forms the core of a computer and makes up the basic computer model in collaboration with the CPU. Magnetic drums and delay lines used as primary storage by computers of the early days, have metamorphosed into a miniature silicon chip, which can achieve efficient storage of large volumes of data. Random Access Memory, popularly known as RAM, is a small-sized light and volatile form of computer memory. It is capable of temporary storage of data. Registers located in a computer processor are the fastest forms of computer storage. The most frequently used information is duplicated in the processor cache of a computer, thereby improving its performance. Computers require a non-volatile primary storage to read large programs. This non-volatile memory is known as ROM or Read-only memory. It also contains the startup programs used for bootstrapping a computer. Secondary storage media such as flash memory, magnetic tape, punch cards – are also a part of computer memory.

Monitor. A visual display unit, as it is called, is an electrical equipment that displays images generated by the video output device of a computer. Modern computer monitors use LCD or even plasma screens. The display provides computer users with instant feedback in the form of text and graphic images. Monitors are the most-used output devices of a computer.

Keyboard. A keyboard is regarded as an input device for a computer. With respect to the arrangement of keys, a computer keyboard is similar to a typewriter. The keys or buttons act as electronic switches with characters printed on them, with each keypress corresponding to a written symbol. A keyboard has its own processor and circuitry, which

consists of a key matrix, which helps bring about the keyboard operation.

Mouse. A computer mouse is a pointing device that detects two-dimensional motion. Apple's Macintosh was the first successful mouse-driven computer. A mouse translates the motion of your hand into signals that a computer can recognize and respond to. There are three basic types of mice, namely, mechanical, opto-mechanical, and optical. Mechanical mice have a rubber or metal ball that can roll in all directions. Mechanical sensors in the mouse detect the direction of motion of the ball. Opto-mechanical mice differ from mechanical mice, in that they use optical sensors to detect motion. Optical mice, popularly used today, have a laser to detect movement of the mouse. They do not have mechanical moving parts and possess higher performance speeds.

II. Choose the best option to the following statements.

1. A computer is a complex machine that …
a) is the most valuable part of our life.
b) is capable of performing huge computations at an extraordinary speed.
c) is capable of performing huge calculations at an extraordinary speed.

2. Although human intellect is the undoubted winner in this competition, the capabilities of a computer cannot be …
a) underestimated.
b) underemployed.
c) underemphasized.

3. All the computer parts make …
a) the whole processing unit.
b) the whole technological process.
c) the whole system.

4. CPU is an electronic circuit that …
a) executes computer programs.
b) exists computer programs.
c) excavates computer programs.

5. A computer motherboard consists of sockets, memory slots, non-volatile memory and …
a) a clock generator.
b) a hard disk.

c) an analog system.

6. A hard disk is an electromagnetically charged surface or a set of disks that …

a) record information in disks known as tracks.

b) record data in motherboard known as tracks.

c) record data in concentric circles known as tracks.

7. Computer Memory refers to those components of a computer, which retain digital data …

a) and form the core of a computer.

b) and form the core of a storage device.

c) and form the core of a motherboard.

8. A hard disk is an electromagnetically charged surface or a set of …

a) disks.

b) concentric circles.

c) desktops.

9. RAM is a small-sized light and …

a) non-volatile form of computer memory.

b) volatile form of software.

c) volatile form of computer memory.

10. … is a pointing device that detects two-dimensional motion.

a) A monitor ...

b) A view port ...

c) A computer mouse ...

III. Comprehension Check. State whether the statements are true or false. Correct if necessary.

1. A keyboard is regarded as an output device.

2. There are four basic types of mice.

3. Monitors are seldom used as output devices of a computer.

4. Magnetic drums are used for processing information.

5. A hard disk is an electromagnetically charged surface or set of discs that record data in concentric circles known as tracks.

6. Some motherboards have logic and connectors to support input devices like PS/2 connectors.

7. Mechanical mice, popularly used today, have a laser to detect movement of the mouse.

8. CPU operation can be divided into three basic steps.

9. The processing power of a computer is equal to that of a human brain.

10. Hard disk is a non-volatile storage device that stores digitally encoded information.

IV. Translate the following words and word combinations into your native language. Try to memorize them.

1. a set of commands; 2. a visual display unit; 3. circuit board; 4. circuitry; 5. concentric circles; 6. digital information; 7. digitally encoded data; 8. video output; 9. plasma screen; 10. firmware; 11. instant feedback; 12. integrated circuit; 13. key matrix; 14. optical sensor; 15. performance speed;16. primary storage; 17. processing power; 18. processing unit; 19. punched card; 20. secondary storage media; 21. storing device; 22. two-dimensional motion.

V. Continue the phrases.

1. Monitors are mostly used … .
2. A complex machine known as a computer mainly consists of … .
3. CPU operation can be divided into four basic steps, namely, … .
4. Random Access Memory is a small-sized light … .
5 Under an electrical equipment displaying images generated by the video output of a computer, it's easy to recognize … .
6. A non-volatile primary storage required by computers to read large programs is known as … .
7. A computer keyboard is similar to … .
8. A pointing device that detects two-dimensional motion has three basic types such as … .
9. Mechanical sensors in the mechanical mouse detect … .
10. As far as opto-mechanical mice use optical sensors to detect motion, they differ from … .

VI. Insert the missing words.

1. The display provides computer users with … in the form of text and graphic images.

2. During … the processor retrieves program instructions from memory.

3. A keyboard is regarded as … for a computer.

4. The keyboard buttons act as … with characters printed on them.

5. A hard disk … in concentric circles known as tracks.

6. Due to its … a computer is often compared to the human brain's power.

7. A mouse … the motion of your hand into … that a computer can recognize and respond to.

8. … is a small-sized light and volatile form of computer memory.

9. A clock generator helps in the … of various system components.

10. … is an electronic circuit that executes computer programs.

11. … house the system's firmware.

12. A hard disk is described as a part of the computer disk drive, which … data and provides computer users with … to large amounts of data.

13. … contains the startup programs used for bootstrapping a computer.

14. Computers require … to read large programs.

15. …possess high performance speeds, but they do not have mechanical moving parts.

B. TEXT STUDY

I. Read the text and fill in the gaps with the words from the list.

a) activities; b) computer; c) data; d) devices; e) function; f) hardware; g) information; h) instructions; i) machine; j) memory; k) output; l) peripherals; m) program; n) sections; o) software; p) system; q) the central processing unit.

Text B. What is a Computer?

A computer is an electronic … which can accept data in a certain form, process the data, and give the results of the processing in a specified format as … . First, data is fed into the computer's … . Then, when

the program is run, the computer performs a set of … and processes the data. Finally, we can see the … on the screen or in printed form. A computer … consists of two parts: hardware and software. … is any electronic or mechanical part you can see or touch. … is a set of instructions, called a … , which tells the computer what to do. There are three basic hardware … : the central processing unit (CPU), main memory and peripherals. Perhaps the most influential component is … . Its … is to execute program instructions and coordinate the … of all the other units. In a way, it is the "brain" of the … . The main memory holds the instructions and … which are being processed by the CPU. … are the physical units attached to the computer. They include input / output and storage … .

II. Choose the right preposition.

1. To be capable … performing huge computations … an extraordinary speed; 2. to be compared … a human brain; 3. the winner … the competition; 4. the capabilities … a computer; 5. to be influenced … the design … a human brain; 6. a computer motherboard consists … sockets; 7. to take a look… the major parts of a computer; 8. the responsibility … a computer processor; 9. the set … instructions; 10. to be divided … four basic steps; 11. to be implied … the program instruction; 12. to write back the results … the computer's memory; 13. a connector … a mouse and keyboard; 14. to record data … concentric circles; 15. the motion … your hand; 16. basic types … mice; 17. to roll … all directions; 18. to differ … the mechanical mice; 19 to use sensors … detect motion.

III. Fill in the necessary articles.

I think each and every one of us must know about … evolution of … computers. It is one of … most useful machines ever created by … humans. …invention of … computer was just … beginning of … ever-increasing thirst for knowledge. I guess, even … inventor of … computer mustn't have realized … potential that … machine would have. Today, almost … all of our work is done by … computing machine. Computers are enhancing technological growth at … rapid rate.

IV. Conversational Practice. Read the dialogue. Role-play the dialogue with your partner on analogy. Use set expressions and phrases given below.

Frankly speaking, as far as I know, for sure, right you are.

Computers in our life

Jim: What's the most important part of the computer?

Paul: The most important part of your computer isn't the hard disk or the monitor or the printer. The most important part is the data you use.

Paul: It's the only part of your computer that can't be replaced. If you didn't make a back-up copy of it – and something bad happens to your computer – you will never see your data again.

Jim: I should buy a back-up device.

Paul: That's a very good idea.

V. Open the brackets and put the right form of the verb.

1. Similar in operation to desktop computers, laptop computers (are being miniaturized / are miniaturized / had been miniaturized) for mobile use. 2. Information system (implements / is being implemented / is implemented) within an organization for the purpose of improving the effectiveness and efficiency of the organization. 3. When the users' hands and sensory organs (engage / are engaged / have been engaged) in other activities, wearable computers are of great help in tracking human actions. 4. During the writeback step the CPU (is written back / writes back / has been written back) the results of execution to the computer's memory. 5. Computer users (are providing / will be provided / are provided) with quick access to large amounts of data by a computer hard disk. 6. A keyboard (has regarded / is regarded / regards) as an input device for a computer.

VI. Translate from Russian into English.

1. Портативные компьютеры обладают расширенной функциональностью, они компактны и эргономичны. 2. Зарядное устройство отвечает за подзарядку компьютера? 3. Какие периферийные устройства составляют аппаратное обеспечение компьютера? 4. Какими устройствами ввода, вывода и хранения информации ты пользуешься? 5. Устройства ввода информации переносят инфор-

мацию на компьютер. К ним относят клавиатуру, мышку, сканнер, микрофон и веб камеру, не так ли? 6. Устройства вывода выводят обработанную информацию. Они включают такие периферийные устройства как монитор, принтер, колонки, не так ли? 7. Какие устройства хранения информации ты знаешь? 8. Восьмиядерные процессоры современных компьютеров, мощная аккумуляторная батарея, семнадцатидюймовый экран с высоким разрешением полностью соответствуют ожиданиям самых требовательных пользователей. 9. Меню быстрого доступа команд открывается нажатием правой или левой клавиши на сенсорной панели мыш-ки? 10. Какие производители являются лидерами на рынке мобильных электронных устройств сегодня?

VII. Speak about the main parts of a computer using key words, phrases and the topic sentences. Describe your ideal computer.

UNIT XIII

GENERATIONS OF COMPUTERS. ARTIFICIAL INTELLIGENCE

VOCABULARY STUDY

Nouns and noun phrases

vacuum tubes – вакуумные трубки; malfunction – несрабатывание, технический сбой; predecessor – предшественник, прототип машины; silicon – кремний; hallmark – критерий, характерная особенность; semiconductor – полупроводник; networks – сети; voice recognition – распознавание голоса; artificial intelligence ─ искусственный интеллект; quantum computation – квантовые вычисления;

Adjectives and collocations

punched cards – перфорированные карты; superior – старший, превосходящий; integrated circuits – интегрированные электросхемы; accessible – доступный; rectangular – прямоугольный;

Verbs, Adverbs

run – вести, руководить; affect – воздействовать, влиять; result in – приводить к результату; take up – начинать; usher – объявлять, возвещать; attain – достигать; handle – управлять, обращаться; drastically – решительно; eventually – окончательно.

I. Match the words with the definitions below.

Predecessor, computation, portable, spreadsheet, miniaturization, power, recognition, hallmark.

1. The process of making something very small using modern technology.
2. Electricity, especially when considering its use or production.
3. A typical characteristic or feature of a person or thing.
4. A piece of computer software used for showing rows and columns of numbers or other data, and for doing calculations with this data.
5. A machine, system, law, etc. that has been replaced by a new one.

6. The act or process of calculating an answer or amount by using a machine.

7. Light and small enough to be easily carried or moved.

8. The fact of knowing someone or something because you have seen or heard him or her or experienced it before.

II. Using a dictionary add as many words as possible into the table.

Verbs	Adjectives	Nouns
1. to power		
2.		generation
3. to operate		
4.	reliable	
5.		industry
6. to miniaturize		
7.		processing

III. Choose the words with similar meaning from the two groups and arrange them in pairs.

A. lowest-level programming, input, widespread, atomic, integrated, punched, voice, artificial, portable, object-oriented.

B. Circuit, intelligence, card, language, energy, recognition, device, use.

IV. Complete the sentences with the words below.

Amplification, cards, circuitry, predictions, programming, input, current, light bulbs.

1. The first generation computers used vacuum tubes for … and switching purposes.

2. The tubes were made of sealed glass containers, the size of ….

3. The sealed glass allowed … to flow wirelessly from the filaments to metal plates.

4. Vacuum tubes also started and ended … by switching on and off when turned on or off.

5. Initially, technicians manually perforated … with holes.

146

6. These machines were intended for low-level operations and thus … was done using only binary digits 0s and 1s; the systems could solve only one problem at a time.

7. Among many things, the ENIAC was used to study the feasibility of thermonuclear weaponry, firing of ballistic artillery and engine thermal ignition, and elsewhere, for weather … .

8. Second generation computers saw advancement in data … and output procedures.

V. Make up your own sentences using the following words and word combinations.

Major technological development, enormous size, assembly languages, integrated circuit, silicon chips, palm of the hand, object-oriented languages, voice recognition, superconductors, artificial intelligence, quantum computation, molecular and nanotechnology, biological computing.

VI. Translate into English.

1. Современные компьютеры универсальны, компактны и точны. 2. Компьютеры обрабатывают информацию с очень высокой скоростью. Они делают миллионы точных арифметических расчетов и геометрических измерений в секунду. 3. Если объем оперативной памяти компьютера невысок, пользователь ПК вынужден сохранять данные на флеш-накопитель. 4. Многозадачность – это способность компьютеров выполнять несколько операций одновременно. 5. Компьютеры позволяют пользователям выйти в Интернет и перемещаться по веб страницам с высокой скоростью. 6. Необходимая информация и обновления доступны для скачивания через любой Интернет-браузер. 7. Интернет-приложение позволяет пользователям общаться друг с другом по Скайпу, участвовать в онлайн конференциях и взаимодействовать на форумах. 8. Необходимо устанавливать на компьютер хорошую антивирусную программу, чтобы обезопасить личные данные от атак хакеров. 9. Основные приложения Майкрософт Офис позволяют вам набирать текст, выделять его, копировать, вырезать, удалять, редактировать и сохранять. 10.Современные компьютерные технологии оказывают противоречивое влияние на систему образования. С одной стороны, они облегчают репрезентацию инфор-

мации, так как студенты имеют свободный доступ к учебным материалам и могут делать контрольные работы в онлайн режиме. С другой стороны, компьютеры негативно влияют на учебную деятельность студентов, поскольку они используют их в основном не для получения основных знаний, а для развлечения. 11. Сейчас программные средства позволяют пользователям ПК улучшать качество фотографий, создавать высококачественную графику и редактировать веб сайты. 12.Сегодня люди очень зависимы от мобильных устройств.

A. TEXT STUDY

I. Read the text and answer the following questions.

1. What did first generation computers rely on? Give the examples of the first-generation computing devices.

2. When was the transistor invented?

3. What are its advantages over the vacuum tubes?

4. What was the hallmark of the third generation of computers?

5. Describe the fourth generation of computers.

6. When was the Macintosh introduced?

7. What are fifth generation computers based on?

8. What are sixth generation of computers different from other generation computers?

9. What may future generation computers be?

Text A. Generations of Computers

The history of computer development is often referred as to the different generations of computing devices. Each of the six generations of computers is characterized by a major technological development that fundamentally changed the way computers operate, resulting in smaller, cheaper, more powerful and more efficient and reliable computing devices. As a result of the miniaturization, speed, power and memory of computers have proportionally increased. New discoveries are constantly being developed that affect the way we live, work and play.

First generation (1940-1956): vacuum tubes. The first computers used vacuum tubes and were often enormous, taking up entire rooms. They were very expensive to operate and in addition to using a great

deal of electricity, generated a lot of heat, which was often the cause of malfunctions. First generation computers relied on machine language, the lowest-level programming language understood by computers, to perform operations, and they could only solve one problem at a time. Input was based on punched cards and paper tape, and output was displayed on printouts. The UNIVAC and ENIAC computers are the examples of the first-generation computing devices.

Second generation (1956-1963): transistors. Transistors replaced vacuum tubes and ushered in the second generation of computers. The transistor was invented in 1947 but did not see a widespread use in computers until the late 1950s. The transistor was far superior to the vacuum tube, allowing computers to become smaller, faster, cheaper, more energy-efficient and more reliable than their first-generation predecessors. Second-generation computers moved to symbolic, or assembly languages, which allowed programmers to specify instructions in words. High-level programming languages were also being developed at this time, such as the early versions of COBOL and FORTRAN. The first computers of this generation were developed for the atomic energy industry.

Third generation (1964-1971): integrated circuits. The development of the integrated circuit was the hallmark of the third generation of computers. Transistors were miniaturized and placed on silicon chips, called semiconductors, which drastically increased the speed and efficiency of computers. Instead of punched cards and printouts, users interacted with the third generation computers through keyboards and monitors and interfaced with an operating system, which allowed the device to run many different applications at one time with a central program that monitored the memory. Computers for the first time became accessible to a mass audience because they were smaller and cheaper than their predecessors.

Fourth generation (1971-1982): microprocessors. The microprocessor brought the fourth generation of computers, as thousands of integrated circuits were built onto a single silicon chip. What in the first generation filled an entire room could now fit in the palm of the hand. The Intel 4004 chip, developed in 1971, located all the components of the computer – from the central processing unit and memory to input/output controls – on a single chip. In 1981 IBM introduced its first computer for the home user, and in 1984 Apple introduced the Macintosh. This generation of computers allows users to use the computer for

word processing, spreadsheets, file managing and graphics. The computer languages like C, C++, and DBase are used in this generation to perform the accurate operations. The concept of networking and CD-ROM came into existence in the fourth generation. As these small computers became more powerful, they could be linked together to form networks, which eventually led to the development of the Internet. Fourth generation computers also saw the development of the GUI and the mouse.

Fifth generation (1982-present): artificial intelligence. Fifth generation computing devices, based on artificial intelligence, are still in development, though there are some applications, such as voice recognition, that are being used today. The use of parallel processing and superconductors is helping to make artificial intelligence a reality. Quantum computation and molecular and nanotechnology will radically change the face of computers in years to come.

Now we use the *Fifth Generation of Computers* which were started around 1982. These generation computers use the high level of languages like Perl, Python, C, JAVA, etc. Moreover, the Ultra Large Scale Integration technology was introduced in 5th generation computers which leads to the development of a microprocessor chip with several millions of chips on it.

It introduces the laptops, notebooks, PC's, desktops, and many more during this period. Besides, these computers are based on Artificial Intelligence. The fifth-generation computers perform the parallel processing with fast results. In this generation of the computers, the new languages are introduced like object-oriented languages like C++, JAVA, etc. The new operating systems are developed MS Window, Linux; Linux based components are developed. Example of fifth generation computers are Notebook, Laptop, Desktop, Ultra book, Chrome book, and many more.

Advantages of Fifth Generation of Computers. The fifth generation of the computer is much faster than fourth generation of computers. Whereas, these computers smaller and give fast results as compared with other generation computers. Moreover, these computers are portable so that, you can carry the devices anywhere and access at any time. Easy to handle these portable devices. With this generation computers, you can perform the multiple operations at a time with no slow down. The new version technologies are improved to repair the problems of

computers. The fifth-generation computers introduce an improvement in semiconductor technology and Artificial Intelligence.

Sixth Generation of computers is different from, other generation computers in terms of size, speed and tasks that they perform. These computers are called intelligent computers based on artificial intelligence or artificial brains. Whereas, it uses the semiconductors as the raw material to its processors. Moreover, the sixth generation introduces the voice recognition which takes dictation and recognizes the words. By using the voice recognition, you can search and send the messages quickly and easily. Although people need to speak slowly and clearly to work properly. With the 6th generation computers, the complex problem solving is possible and researches are ongoing to find the ways to solve the problems more efficiently and easily.

In the military, the AI helps soldiers to solve unexpected problems arise in many situations around the world. Additionally, it helps to prevent the many of world's spy network problems. In the automobile technology, robots are used for manufacturing.

Future Generation Computers may be neurons and attains the human level intelligence. We all have the image that the computer is a rectangular box either on desk or packet. We can think that computers are in cars or refrigerators. Whereas, you can operate the refrigerator with your phone or communicate with a light bulb. In fact, in the coming years, your light bulb will become the computer which performs operations and projects the information instead of light. Similarly, biological computing performs the operations using DNA or RNA and understand the biotechnology as one computer.

II. Describe the features of the six generations of computers.

The five generations of computers are characterized by electrical current flowing through the processing mechanisms listed below:
- The first within vacuum tubes
- The second within transistors
- The third within integrated circuits
- The fourth within microprocessor chips
- The fifth unveiled smart devices capable of artificial intelligence.
- The sixth introduces the voice recognition which takes dictation and recognizes the words.

III. Choose the best option to the following statements.

1. Each of the six generations of computers is characterized by …
a) a size of a device.
b) a specific feature that influences the computer performance.
c) a major technological development that fundamentally changed the way computers operate.

2. The first computers used …
a) vacuum tubes and were often enormous, taking up entire rooms.
b) a great deal of electricity, generated a lot of heat, which was often the cause of malfunctions.
c) all of the above.

3. The transistor was invented …
a) in 1947.
b) the late 1950s.
c) the early 1960s.

4. Transistors were miniaturized and placed on …
a) conductors.
b) silicon chips.
c) semiconductors.

5. The fifth-generation computers perform …
a) the parallel processing which fast results.
b) simultaneous output and input.
c) all of the above.

IV. Comprehension Check. State whether the statements are true or false. Correct if necessary.

1. Future generation computers may be neurons and attains the human level intelligence.

2. There are computers in cars, refrigerators different devices.

3. The AI help people to solve unexpected problems arise in many situations around the world.

4. The fourth-generation computers introduce an improvement in semiconductor technology and Artificial Intelligence.

5. Fourth generation computers also saw the development of the GUI and the camera.

6. The fifth-generation computers perform the parallel processing with fast results.

V. Open the brackets and put the right form of the verb.

1. Supercomputers are optimized (to be executed / to be executing/ to execute) a few number of programs.

2. A desktop computer is designed (to be using / to have been used / to be used) on a single location.

3. Thanks to computer technology, we have been able (have achieved / to achieve / to be achieving) storage and processing of huge amounts of data.

4. The portability and capacity of laptops (operating / to operate / to be operated) on battery power have proven to be of great help to mobile users.

5. Tablets are mobile computers that are very handy (to have been used / to use/ to be using).

VI. Fill in the necessary articles.

Charles Babbage was … English polymath. Considered by some to be … 'father of the computer', Babbage is credited with the invention of … first mechanical computer that eventually led to … complex electronic design, though all … essential ideas of modern computers are to be found in … Babbage's analytical engine. His varied work in other fields has led him to be described as 'pre-eminent' among … many polymaths of … century. Parts of … Babbage's incomplete mechanisms are on … display in … Science Museum in … London. In 1991 … functioning difference engine was constructed from … Babbage's original plans.

B. TEXT STUDY

I. You are going to read an article about AI. 5 sentences have been removed from the article. Choose from the sentences A–F the one which fits each gap (1-5). There is one extra sentence which you do not need to use.

A. The rational agent approach tries to make the best possible choice in the current circumstances.

B. A popular example of a reactive AI machine is IBM's Deep Blue, which is a machine that beat Garry Kasparov, a Grandmaster in chess in 1997.

C. To distil the essence of the human mind, there are 3 approaches.

D. The terms were coined by John Searle in order to differentiate the performance levels in different kinds of AI machines.

E. By definition, they have narrow capabilities, like recommending a product for an e-commerce user or predicting the weather.

F. The human agent ideally should not able to conclude that they are talking to an Artificial Intelligence.

How does AI work, Types and Future of it?

Artificial Intelligence is the simulation of natural intelligence in machines that are programmed to learn and mimic the actions of humans. These machines are able to learn with experience and perform human-like tasks.

Artificial Intelligence Definition. AI is an intelligent entity created by humans. AI is capable of performing tasks intelligently without being explicitly instructed. AI is capable of thinking and acting rationally and humanely.

We can base the human-likeness of an AI entity with the Turing Test, Cognitive Modelling Approach, Law of Thought Approach, Rational Agent Approach.

The basis of *the Turing Test* is that the Artificial Intelligence entity should be able to hold a conversation with a human agent. (1) To achieve these ends, the AI needs to possess these qualities:

Natural Language Processing to communicate successfully.

Knowledge Representation to act as its memory.

Automated Reasoning to use the stored information to answer questions and draw new conclusions.

Machine Learning to detect patterns and adapt to new circumstances.

Cognitive Modelling Approach tries to build an Artificial Intelligence model-based on Human Cognition. (2)

Introspection: observing our thoughts, and building a model based on that Psychological Experiments: conducting experiments on humans and observing their behavior.

Brain Imaging: Using MRI to observe how the brain functions in different scenarios and replicating that through code.

The Laws of Thought are a large list of logical statements that govern the operation of our mind. The same laws can be codified and applied to artificial intelligence algorithms. Also, there are some actions

that we take without being 100% certain of an outcome that an algorithm might not be able to replicate if there are too many parameters.

The Rational Agent Approach acts to achieve the best possible outcome in its present circumstances. According to the Laws of Thought approach, an entity must behave according to the logical statements. But there are some instances, where there is no logical right thing to do, with multiple outcomes involving different outcomes and corresponding compromises. (3)

To understand how Artificial Intelligence actually works, one needs to deep dive into the various sub domains of Artificial Intelligence and understand how those domains could be applied into the various fields of the industry.

Machine Learning teaches a machine how to make inferences and decisions based on past experience. It identifies patterns, analyses past data to infer the meaning of these data points to reach a possible conclusion without having to involve human experience.

Deep Learning teaches a machine to process inputs through layers in order to classify, infer and predict the outcome.

Neural Networks work on the similar principles as of Human Neural cells. They are a series of algorithms that captures the relationship between various variables and processes the data as a human brain does.

Natural Language Processing is a science of reading, understanding, interpreting a language by a machine. Once a machine understands what the user intends to communicate, it responds accordingly.

Computer Vision algorithms try to understand an image by breaking down an image and studying different parts of the objects.

Cognitive Computing algorithms try to mimic a human brain by analyzing text/speech/images/objects in a manner that a human does and tries to give the desired output.

Artificial Intelligence can be built over a diverse set of components and will function as an amalgamation of Philosophy, Mathematics, Economics, Neuroscience, Psychology, Computer Engineering, Control Theory and Cybernetics, Linguistics.

There are 3 Types of Artificial Intelligence: Artificial Narrow Intelligence (ANI), Artificial General Intelligence (AGI), Artificial Super Intelligence (ASI) Artificial Narrow Intelligence (ANI) is the most common form of AI that you'd find in the market now. These Artificial Intelligence systems are designed to solve one single problem and

would be able to execute a single task really well. (4) By definition, they have narrow capabilities, like recommending a product for an e-commerce user or predicting the weather. This is the only kind of Artificial Intelligence that exists today. They're able to come close to human functioning in very specific contexts, and even surpass them in many instances, but only excelling in very controlled environments with a limited set of parameters.

AGI is still a theoretical concept. It's defined as AI which has a human-level of cognitive function, across a wide variety of domains such as language processing, image processing, computational functioning and reasoning and so on. An AGI system would need to comprise of thousands of Artificial Narrow Intelligence systems working in tandem, communicating with each other to mimic human reasoning.

Artificial Super Intelligence (ASI) is seen as the logical progression from AGI. It would be able to surpass all human capabilities. This would include decision making, taking rational decisions, and even includes things like making better art and building emotional relationships.

Extensive research in Artificial Intelligence also divides it into two more categories, namely Strong Artificial Intelligence and Weak Artificial Intelligence. (5) Here are some of the core differences between them.

Weak AI. It is a narrow application with a limited scope. This application is good at specific tasks. It uses supervised and unsupervised learning to process data. Example: Siri, Alexa.

Strong AI. It is a wider application with a vaster scope. This application has an incredible human-level intelligence. It uses clustering and association to process data. Example: Advanced Robotics.

II. Translate the following words and word combinations into your native language. Try to memorize them.

Cluster, supervised learning, to mimic, cognitive function, amalgamation, infer and predict the outcome, variable, inference, capture, vast, circumstance, instance, explicitly, entity, approach, introspection, MRI, detect, replicate.

III. Read the text and answer the following questions.

1. What is the definition of Artificial Intelligence?

2. What approaches and tests can we base the human-likeness of an AI entity with?

3. What do you need to understand how Artificial Intelligence actually works?

4. What are subdomains of Artificial Intelligence?

5. Describe three types of Artificial Intelligence?

6. Characterize Weak AI and Strong AI, give examples.

IV. Paraphrase the following sentences. Make use of the words from the list instead of the words given in italics.

Indispensable, drag, shortcut menu, performance, boot time, technical specifications, storage capacity, portable, application open time, meet the needs, enhanced, scroll.

1. Laptops are *essential* part of nearly all people's life. So, you can hardly imagine a person who can do without them. 2. Mobile devices today are compact and *movable*. 3. *Upgraded* software and functionality are strong points of modern computers. 4. It is rather difficult to find high quality mobile devices with long-run *productiveness*. 5. One of the most important *technical parameters* of a mobile device is a long-life battery. 6. A computer's long *load time* and *attachment open time* tell a user about some hardware and software problems. 7. *Space for saving files* is usually insufficient for most computer users. 8. The latest computers completely *correspond* to users' needs. 9. According to the manual, you need to press the left button of the touchpad and *move* the cursor *from top to the bottom* to look through the web page. 10. If you want to call for *contextual menu*, select an item and click the right touchpad button. 11. You can also copy a file by *pulling* it *over* to the new location point.

V. Arrange the words in the proper order to make questions.

1. installed / she / a new / has / or / the updates / application? 2. the function / is /what / of / the / CPU? 3. are / who / you / e-mail / sending / this / to? 4. sent / who / this / me / reference? 5. have/ a 3.0USB port/ does / or / PC/ your / a 2.0USB port? 6. add / a water-proof / manufacturers / do / to / the assembly / membrane / parts /a laptop / of? 7. what / work / platform / on / this / computer / does? 8. boot / has / time / doesn't it / your / laptop / a quick? 9. manual / is / what / about / this? 10. enhanced / created / who / software / this?

VI. Ask questions to get these answers.

1. .... ?
The touchpad is placed on the keyboard.
2. .... ?
Yes, the keyboard does.
3. .... ?
The right button does.
4. .... ?
Capacitive battery is used to meet all the above mentioned specifications and users' preferences.
5. .... ?
Terry clicked the right button of the mouse.
6. .... , ... ?
Yes, the shortcut menu does.
7. .... , ... ?
Yes, the input devices will.
8. . ... ?
No, am not. I am closing the application.
9. . ... ?
I'm reloading the computer.

VII. Give the main points of the text in 4-7 sentences. Use the following clichés.

The information presented in the text ... . On the one hand ... , on the other hand ... .There was some new information for me ... . I find this text ... . I like (dislike) the text ... .

Unit XIV

COMPUTER NETWORKS

VOCABULARY STUDY

Nouns and noun phrases

A hub – концентратор; switch – коммутатор; cabling – кабельное соединение; token – аппаратный ключ, генератор одноразовых паролей в системах аутентификации; terminator – оконечное устройство; Media Access Control address – уникальный идентификатор для контроля доступа к носителю информации; stream – поток ; encryption – шифровка, кодирование; lock-down cables – блокирующие кабели; swipe-card – бесконтактная карта доступа; CCTV (Close Circuit Television) – система скрытого видеонаблюдения;

Adjectives and collocations

Stand-alone – изолированный, независимый; copper wiring – медный кабель; a junction box – кабельная коробка; data packet collisions – конфликт пакетов данных. Попытка двух (или более) станций одновременно начать передачу пакета в сети; hexadecimal number – шестнадцатеричное число; packet switching technology – технология пакетной коммутации, т.е. технология маршрутизации и передачи данных, по которому всё сообщение разбивается на небольшие фрагменты, пакеты, каждый из которых последовательно один за другим пересылается по коммуникационным каналам самостоятельно, возможно, по разным путям. В пункте назначения происходит сборка пакетов; upper-case/lower-case letters – буквы верхнего/нижнего регистра; peer-to-peer network – сеть с равноправными узлами;

Verbs, Adverbs

Back and forth – вперед - назад; allocate – распределять, предназначать; transmit – передавать; expand – расширять; troubleshoot – выявлять и устранять неисправности; temporarily – временно; keep track – отслеживать; authenticate – аутентифицировать, проверять на подлинность; log onto – входить в систему.

I. Match the words with the definitions below.

Router, network, back up, deliver, storage device, queue, via, network interface card (NIC).

1. The way computers and peripherals are physically connected together.

2. It is needed to connect computers and other peripherals to a network.

3. A piece of electronic equipment that connects computer   networks to each other, and sends information between networks.

4. A piece of computer equipment in which information and instru ctions can be kept.

5. By way of, or by use of.

6. To make a copy of information in a computer that is stored sepa rately.

7. A line of people or things waiting for something.

8. To provide a service, to take goods, etc. to a place.

II. Using a dictionary add as many words as possible into the table.

Verbs	Adjectives	Nouns
1. to access		
2.		packet
3. to link		
4.	secure	
5.		collision
6. to identify		
7.		cabling

III. Choose the words with similar meaning from the two groups and arrange them in pairs.

A. cable, fiber-optic, storage, wireless, data, data packet, backed up.

B. packets, collisions, files, connections, network, facility.

160

IV. Complete the sentences with the words below. You may have to change some words slightly.

Peer-to-peer, fiber-optic, hub, LAN, backbone, hotspot, server, capability, router, setting up.

1. All the PCs on a ... are connected to one ... , which is a powerful PC with a large hard disk that can be shared by everyone.

2. A ... is a more complex device that usually includes the ... of hubs.

3. In the ... model each client can download and share files with other users.

4. To access the Internet via a ... , you'll need an Internet device that has Wi-Fi capability.

5. A ... is an intermediary device which enables communication between all devices on a network.

6. ... an e-mail account is easy, and it's free.

7. A ... cable has been installed on a large scale, enabling vast amounts of data to be transmitted at a high speed using light signals.

8. A ... is the largest 'pipe' (cable or channel) that carries the heaviest data traffic at highest possible speed, and which connects every main server or device on the network.

V. Make up your own sentences using the following words and word combinations.

A Computer Network system, to be linked through a hub or switch, shared hardware and software, network cabling, network topology, data packet collisions, client-server network, peer-to-peer network, common network topologies: ring, line (bus) and star.

VI. Translate the following sentences into English.

1. Самый простой и наименее дорогой способ соединить компьютеры в вашем доме – это установить беспроводную сеть, которая использует радиоволны вместо проводов. 2. Глобальные сети соединяют компьютеры линиями связи и программными протоколами, позволяя пользователям обмениваться данными быстро и надежно. 3. Если ты введешь правильный пароль, то у тебя будет доступ к сети. 4. В прошлом телефонные сообщения передавались по металлическим проводам, а сейчас передаются по оптоволо-

конным кабелям. 5. – Мой ноутбук подключается к Wi-Fi, но сила сигнала очень низкая. Что вы можете посоветовать? – Используйте свой компьютер максимум тридцать метров от маршрутизатора. 6. – Ваши специалисты уже подключили все компьютеры к локальной сети? – Нет еще. Техники устанавливали сеть целый день вчера, но наша сетевая структура требует большого количества устройств. 7. Компоновка большинства домашних сетей представляет собой систему, основанную на замкнутом цикле. 8. На прошлой неделе в нашем офисе была установлена сложная сеть, включающая сервер, сетевой аппаратный узел, несколько принтеров и ряд компьютеров. 9. Благодаря Wi-Fi сегодня легко получить доступ к Интернету из кафе, отеля, аэропорта и других общественных мест.

A. TEXT STUDY

I. Read the text and answer the following questions.

1. What is a Computer Network?
2. What are the types of network connections?
3. What are the advantages of networking stand-alone computers into a LAN?
4. What hardware is needed to network stand-alone computers into a LAN?
5. What is a hub, a switch, a wireless access point?
6. What are the roles of the computers in client-server and peer-to-peer networks?
7. What are ring, bus and star network topologies?

Text A. Computer Topology

A Computer Network is a system of connected computers, peripherals and communication devices that can exchange data and share resources. If the network is limited to a single building or group of buildings then it is described as a Local Area Network (LAN). Computers in a LAN can be linked together directly but more commonly are linked through a hub or switch. The network connections can be cable, fiber-optic, or wireless (infra-red, microwave or radio). A router acts as an interface between networks, passing data packets back and forth between them.

Hardware such as printers can be shared by all the computers on the network. Some software and files such as databases can be shared by different users. Users can work together as networked computers can communicate with each other easily and quickly via email or internal messaging systems. An Internet connection can be shared. File storage facilities can be shared and files therefore accessed from any networked computer. Improved security as there is central control over user access, which programs, data and hardware users have access to. Files can easily be backed up centrally.

A typical computer network interface card for a cabled network connection. A network adapter such as a network interface card (NIC) is needed to connect computers and other peripherals to a network, either by cable or wirelessly. Each connected device is allocated an IP address to uniquely identify it on a TCP/IP network. Cabling is needed in a non-wireless network to connect the computers and peripherals together, either directly or through a hub/switch. Typically network cabling will be copper wiring or a mixture of this and fiber-optic cable. The amount of cabling needed depends on the network topology (the way computers and peripherals are physically connected together).

A hub is used to link computers and peripherals together in a cabled network that uses a star network topology. A hub is a junction box but it does not manage any of the traffic that comes through it, any data packet entering any port is sent out to all the connected ports. This can result unnecessary data packet collisions which slow the network considerably as the amount of data traffic rises.

A switch is used in the same way as a hub but the switch uses the IP address of the data packet to direct the data to the correct device, rather than being sent out to all the connected ports. This greatly reduces data packet collisions resulting in a faster network than the equivalent one using a hub.

A wireless access point is a device that allows computers and printers etc. to connect to a wired network using radio waves rather than cabling, provided they are equipped with a wireless NIC. This allows a network to build with few or no cables and makes it simple to add further wireless devices.

Client-server network. On a client-server network there are two types of computers with two distinct roles. One or more server computers which have the role of: controlling access to shared files; installing software on the client computers; allowing the client computers to ac-

cess networked printers and managing print queues; controlling client computer access to the Internet; controlling user access to the network by verifying usernames and passwords'; controlling the levels of access to files and software once users have once logged onto the network; storing, delivering and sending email.

Multiple client computers (workstations) are then connected to the server computers. These are where the user actually works. Some servers may have a more specialized role such as a print server, dedicated to controlling access to shared printers on the network and queuing print jobs in the order that they were sent by the users.

Peer-to-peer networks. In a peer-to-peer network computers are simply linked together, either using cables and a hub or with a wireless connection. All the computers in the network have equal status so there is no server controlling the network. Provided that sharing has been enabled, any computer on the network can access data from of any other computer and any computer on the network can use a printer connected to any other computer. A peer-to-peer network will be cheaper to set up and, provided there are only a small number of computers, will be easier to manage than server-based networks. However, they are less secure and peer-to-peer networks are used mainly by home users and small companies who do not have the necessary technical staff to maintain a client-server network.

A network topology is the name given to the way in which devices are physically connected in a network. There are three common network topologies: ring; line (bus) and star.

Ring topology. This is typically a peer-to-peer network. The devices are connected in a ring and data travels in one direction using a control signal called a 'token'. To send data, a computer must wait for the token to reach it, attach the data to the token, and then return both to the network. When the token reaches the intended destination, the receiving device removes the data from the token and returns it to the network so the process can start again.

Advantages. Not greatly affected by adding further devices or heavy network traffic as only the device with the 'token' can transmit data so there are no data collisions. Relatively cheap to install and expand.

Disadvantages. Slower than a star topology under normal load. If the cable fails anywhere in the ring or any device fails then the whole network will fail because the token cannot be passed around the ring.

164

This is the hardest topology to troubleshoot because of the difficulty of tracking down where in the ring the failure has occurred. It is inconvenient to modify or expand because to add or remove a device means the network has to be shut down temporarily. The special network interface cards needed to connect devices are expensive.

Bus (line) topology. This is typically a peer-to-peer network. Devices are connected to a main (bus) cable using special T-connectors. If data is being sent between devices, then the other devices cannot transmit. The bus cable must have a terminator fitted at each end to prevent reflected signals.

Advantages. The simplest and cheapest to install and extend. Well suited for temporary networks with not many devices. Very flexible as devices can be attached or detached without disturbing the rest of the network. Failure of one device does not affect the rest of the bus network. Simpler than a ring topology to troubleshoot if there is a cable failure because sections can be isolated and tested independently.

Disadvantages. The bus cable has a limited length and if it fails then the whole network will fail. Performance of the network slows down rapidly with more devices or heavy network traffic as data cannot be transmitted while the bus is in use by other devices. Slower than a ring network.

Star topology. This is typically a client-server network. A central computer (server) is connected to the other devices either through a switch or hub.

Advantages. The most reliable because the failure of one device does not affect other devices. Simple to troubleshoot because only one device is affected by a cable break between the switch and the device. Adding further devices does not greatly affect performance because the data does not pass through unnecessary devices. Easy to add extra devices by plugging their cables into the hub/switch.

Disadvantage. Uses the most cable which makes it more expensive to install than the other two topologies. The extra hardware required such as hubs/switches further increases the cost. If the hub/switch fails then the whole network will fail. When used as a client-server network then the whole network will fail if the cable link between the server and the hub/switch fails.

II. Compare the features of the network.

Topology	LINE (BUS)	RING	STAR
Performance with few devices or low network traffic	Medium	Slow	Fast
Change in performance with many devices or high network traffic	Most affected	Least affected	Some effect but the switch/hub can be upgraded easily
Ease of troubleshooting (compared to other topologies)	Fairly easy	Hard	Easy
Cost of installation (compared to other topologies)	Low	High	High
Ease of setting up and modifying (compared to other topologies)	Easy to set up and modify	Easy to set up but harder to modify	Easy to set up and modify
Problems to the network caused by cable or device failure	Failure of the bus cable causes total failure. Failure of a PC has no affect.	Cable or PC failure causes total network failure.	Failure of the cable to the client PC only affects that PC. Failure of the hub/switch or the server causes total network failure.

III. Choose the best option to the following statements.

1. The network connections can be …
a) fiber-optic.
b) wireless (infra-red, microwave or radio).
c) all of the above.

2. Data packet collisions can

a) shut down the network.

b) accelerate the network insignificantly as the amount of data traffic rises.

c) slow the network considerably as the amount of data traffic rises.

3. The switch uses the IP address of the data packet to…

a) direct the data to the correct device.

b) be sent out to all the connected ports.

c) reduce data packet collisions.

3. Any computer on the network can …

a) provide sharing facilities.

b) access data from of any other computer.

c) use a printer connected to any other computer.

4. Bus network is …

a) the simplest and cheapest to install and extend.

b) well suited for temporary networks with not many devices.

c) very stable.

5. Star network …

a) uses the most cable which makes it expensive to install.

b) requires no extra hardware.

c) fails if the hub/switch fails.

IV. Complete the sentences using the Present Simple or Future Simple (Active or Passive Voice).

1. If you (to add) memory to a computer, it (to run) faster.

2. Files and peripherals (to share) by all the workers when our company (to set up) a LAN.

3. If you (not to save) your document, you (to lose) the information.

4. The keyboards (not to use) in future if voice-recognition systems (to become) more sophisticated.

5. If David (not to have) enough computer knowledge, he (to need) to hire a qualified technician to install a LAN.

6. If your network (not to protect), unauthorized users (to break) into the system easily.

7. If the central server (to fail), the whole network (to fail).

I. Read the text and answer the following questions.

1. What is a Wide Area Network (WAN)?
2. What do the terms IP addressing, MAC addressing, data packet and protocols mean?
3. What do data packets serve for?
4. Enlist the types of protocols and their function.
5. Enlist the network security techniques?
6. Which technique is the most reliable one? Give your reasoning.

Text B. Computer Networks

A WAN covers a much larger geographical area than a LAN. The largest WAN is the Internet itself as it is a global network of linked computers and LANS. Smaller examples of a WAN would include a national ATM network used by a bank to allow customers to access cash. Many supermarkets and other large companies operate their own national WANs.

IP Addressing. An Internet Protocol (IP) address is a unique address number that is allocated to devices on a computer network that uses the Internet Protocol.

Each address has to be unique as it is used to identify a particular device on a network, allowing data to be sent to the correct device and returned to the device that requested it. An IP address can be private, (for use on a LAN) or public (for use on the Internet or another WAN).

MAC Addressing. In computer networking, a Media Access Control address (MAC address) is a unique 48-bit number assigned by the manufacturer to any hardware device used to connect to a network. MAC addresses are limited to being used on a LAN. Because they are so long, MAC addresses are usually displayed as 8 hexadecimal numbers, for example 00-0C-E7-5D-A8-AD.

Data Packets. Modern computer networks, including the Internet, carry data by breaking it down into a series of distinct units called data packets, rather than sending it as a continuous stream of data. A typical data packet might contain 1,000 to 1,500 bytes.

In complex networks such as the Internet, a series of packets sent from one computer to another may follow different routes to reach the same destination and may arrive out of order. This technology is called

packet switching and makes the network more efficient because the network can balance the load across various pieces of equipment and if there is a problem with one piece of equipment in the network then packets can be routed around it.

Protocols. A communications protocol is a description of the format that digital data has to be in and the rules for hardware/software to communicate that data. The protocol may also define how devices authenticate themselves and may define how error checking and correction takes place.

Examples include the Internet Protocol Suite, the set of communications protocols used for the Internet and similar networks. It is commonly also known as TCP/IP, named from two of the most important protocols in it:

The Internet Protocol (IP) – used to route data packets between networks and over the Internet.

The Transmission Control Protocol (TCP) – used to exchange data directly between two networked computers.

Some other common Internet Protocols.

HTTP (HyperText transfer Protocol): used on the World Wide Web for transferring web pages and files contained in web pages such as images.

FTP (File Transfer protocol): employed for transferring files from one computer to another.

SMTP (Simple Mail Transport Protocol): used for email.

UDP (User Datagram Protocol): a simpler transmission model than TCP, leaving checks for reliability, ordering, or data integrity to the applications exchanging the data. This increases the speed data is exchanged making it more suitable for real-time systems, streaming media, Voice over IP (VoIP) and many online games.

TLS/SSL (Transport Layer Security / Secure Sockets Layer): Encryption protocols used with secure communications over the Internet.

Network security techniques. A network needs security to prevent unauthorized access to the information stored on the network and unauthorized access to hardware managed by the network.

User access levels. Most network security involves users having different levels of user access to the network. The network manager will have full access to all the hardware and software on the network but other users may be restricted to certain areas of the network, only

have READ access to files or be unable to install new software and hardware.

This user access is controlled by the user having to log onto the network with a unique username which is then associated with a particular set of permissions.

Suitable passwords. A password is used in combination with the username to prevent unauthorized access to a network. A suitable (strong) should ideally not be a dictionary word and should include a mixture of upper-case and lower-case letters, numbers and even symbols so it is unlikely to be guessed. Many network authentication systems will require users to regularly change their passwords and block the use of previous passwords. Stored passwords on the network should be encrypted.

Access restrictions. Users can only log in during certain hours of the day and from certain computers. HTTP is a secure web connection.

Encryption. Files can be encrypted making the data meaningless without the correct numerical key to decrypt it. This is particularly important with wireless networks and sensitive data such as online financial transactions.

Physical security. CCTV, door locks, laptop lock-down cables and swipe-card systems etc. can be used to physically restrict access to networked computers.

Firewall. This can be a device or be software-based. Its purpose is to control network transmissions between networks. It is commonly used to block unauthorized access hacking to a network from the Internet, while allowing legitimate network traffic through.

Antivirus software. Many viruses are designed to bypass security systems and having up-to-date antivirus software installed will reduce this risk.

Proxy server. This can be a device or be software-based and uses a set of rules to check that the file, connection or web page the user requests is acceptable. It can filter network traffic by IP address or protocol. If the request is valid then the proxy server makes the connection on behalf of the user.

Wi-Fi access restrictions should be in place to allow only legitimate computers to connect to the network. All data transmitted over Wi-Fi should be encrypted using the highest level available.

170

Filtering. Certain websites can be blocked by filtering. However, this only increases security if the sites are known security risks, for example they distribute viruses.

II. Comprehension Check. State whether the statements are true or false. Correct if necessary.

1. An IP address can be private (for use on the Internet or another WAN), or public (for use on a LAN).

2. MAC addresses are used on any computer network.

3. Modern computer networks carry data by breaking it down into a series of data packets.

4. A communications protocol is a description of the format that digital data has to be in and the rules for hardware/software to communicate that data.

5. TLS/SSL is employed for transferring files from one computer to another.

6. A password is used in combination with the encryption to prevent unauthorized access to a network.

7. Proxy server is used to physically restrict access to networked computers.

8. Filtering can block certain websites.

III. Insert the missing words.

Frequency, satellite, transmit, wireless, receiver.

We can categorize … (1) communication into 3 ways as mentioned below:

Radio waves. The signals which have transmitting frequency ranging from 3KHz to 1 GHz are called radio waves. These are omnidirectional as when an antenna … (2) the signals, it will send it in all the directions. If one sends the radio wave signals, then any antenna having the receiving properties can receive it.

Its disadvantage is that, as the signals are transmitted through radio waves, it can be intercepted by anyone, hence it is not suitable for sending classified important data. It is used in AM, FM radio, television.

Microwaves. The signals which have transmitting … (3) ranging from 1GHz to 300GHz are called microwaves.

These are unidirectional waves, which means that when the signal is transmitted between the sender and … (4) antenna then both need to

be aligned. Microwaves have fewer interference issues than the radio wave communication. It is very widely used in … (5) and wireless LAN communication. There are two types of microwave communication. Terrestrial microwave. Satellite microwave. The only disadvantage of the microwave is that it is very costly.

Infrared waves. The signals which have transmitting frequency ranging from 300GHz to 400THz are called infrared waves. It can be used for short distance communication, like infrared remote control as infrared with high frequencies can't penetrate the rooms and thus prevents the interference between one device to another.

IV. Complete the sentences with the correct tense form of the verbs in brackets.

a) Active Voice

1. They (to test) the program and (to detect) the bugs by 3 p.m. tomorrow. 2. This company (to play) an important role in multimedia development since its very inception. 3. She never (to be able) to fix the problem. 4. They (not to install) the updates yet. 5. You ever (to watch) TV on the Internet? 6. He (to study) some high-level computer languages by next year.

b) Passive Voice

1. After the program (to be improved) it (to be published) as an updated version. 2. All the articles on programming languages (to be translated) by next Friday. 3. Five networks for large companies (to be set up) recently. 4. The program already (to be translated) into machine language. 5. A flowchart (to be designed) by 3 pm yesterday. 6. The printer fault (not to be fixed) yet.

V. Give the main points of the texts A and B. Use the following clichés.

The text is about … . In the next paragraph … . The text elucidates … . It should be noted, that … . The text gives a good insight into … . To conclude … .

VI. Speak about computer networks.

172

UNIT XV

INTERNET

VOCABULARY STUDY

Nouns and noun phrases

Decade – десятилетие; attention span – устойчивость внимания; survey – исследование, опрос; accolade – похвала; incentive – мотив, стимул; mailing list – список рассылки электронных почтовых сообщений; assignment – задание; syllabus (pl. syllabi) – программный, учебный план;

Adjectives and collocations

Broadband – широкополосная сеть; instant messaging – система мгновенного обмена сообщениями; collaborative – совместный, способный к сотрудничеству; fancy – особенный; ubiquitous – повсеместный, распространённый;

Verbs and adverbs

Withstand – противостоять; transfer – переносить; instantly – мгновенно; simultaneously – одновременно; consume – потреблять; lack – испытывать нехватку; crave – настойчиво стремиться, желать; scramble – смешивать.

I. Match the words with the definitions below.

Query, domain name, sophisticated, colon, slash, bookmark, compatibility, feedback.

1. The part of an email or website address on the internet that shows the name of the organization that the address belongs to.

2. Reaction to a process or activity, or the information obtained from such a reaction.

3. A question, often expressing doubt about something or looking for an answer from someone.

4. It is a way of thinking, a system, or a machine, which is complicated or made with great skill.

5. The fact of being able to be used with a particular type of computer, machine, device, etc.

6. The symbol: used in writing, especially to introduce a list of things or a sentence or phrase taken from somewhere else.

7. The address of a web page that is kept on your computer so that you can find it again easily.

8. The symbol / used in writing to separate letters, numbers, or words.

II. Using a dictionary add as many words as possible into the table.

Verbs	Adjectives	Nouns
1. to separate		
2.		symbol
3. to communicate	attached	
4.		transmission
5.		
6. to link		maintenance
7.		

III. Choose the words with similar meaning from the two groups and arrange them in pairs.

A. Electronic, research, click, share, Instant, homework, crave, search;

B. assignments, engine, hyperlink, messaging, rewards, files, mail, skills.

IV. Complete the sentences with the words below. You may have to change some words slightly.

Digital data, IP address, router, access, Wi-Fi, link, attached file, voice call.

1. By clicking on a ..., you might be taken to another website.

2. Traditionally, telecoms companies make most of their profits from ... .

3. It's possible to store a lot more ... on a DVD.

4. The ... will connect your computer to the Internet via your phone line.

5. With the e-mail we received some ... .

174

6. Most public libraries provide free ... to the Internet for library members.

7. With ... , you can watch live news and sport, download and share large files quickly.

8. In order to be able to connect to the Internet a computer needs an ... .

V. Translate the following sentences into English.

1. Интернет предоставляет доступ к невероятному количеству информации. 2. – Какой интернет-браузер ты используешь? – Я предпочитаю Гугл Хром, так как он, с моей точки зрения, самый надежный.3. В Интернете компьютеры соединены друг с другом сетью оптоволоконных кабелей или спутников. 4. Для чего используется маршрутизатор? – Он позволяет вам создать беспроводную сеть. 5. Когда вы ищите что-нибудь в Интернете, вы путешествуете в киберпространстве. 6. Хороший способ поддерживать связь с друзьями или семьей – это использовать различные системы мгновенных сообщений. 7. Если у вас есть доступ в Интернет, вы можете читать новости, и проверять прогноз погоды в сети, смотреть фильмы, музыкальные видео в сети, играть в интерактивные игры и делать покупки через Интернет. 8. – Сколько времени потребуется, чтобы скачать этот видеофайл из сети? – Все зависит от скорости Интернета и размера файла. 9. – Как данные передаются по Интернету? – Вначале, с помощью межсетевого протокола файл необходимо разбить на небольшие порции данных, известных как пакеты данных, а затем данные восстанавливаются, как только достигают места назначения. 10. Ридер – это устройство, которое вмещает тысячи электронных книг, при этом оно легче большинства бумажных аналогов.11. Последнее, что вам необходимо сделать – это переустановить пароль.

A. TEXT STUDY

I. Read the text and match the headings (a-d) with the paragraphs (1-4).

a) Components of the Internet.
b) The origin of the net.
c) What the Internet is.

d) How the net works.

Text A. The Internet

1. The Internet is a global network connecting millions of computers. The largest number of Internet users is in China, followed by the United States and India. In the early days, most people just used the Internet to search for information. Today the Internet helps many people communicate, work, learn, and have fun.

2. The Internet enables computers to send one another small packets of digital data. For that to work, they use a common 'language' called TCP/IP (Transmission Control Protocol / Internet Protocol). If you are on the net, you have an IP address. This address is a way to identify a computer on the Internet. Packets of Internet data are transmitted through a variety of cables, routers and host computers on the way to their destination.

3. The Internet began in 1969 as ARPAnet, a U.S. Department of Defense project to create a computer network that could withstand a nuclear war. During the next two decades, the network that evolved was used mainly by universities, scientists and the government for research and communications. The nature of the Internet changed in 1992, when the U.S. government offered Internet access to the general public. The number of users grew rapidly into the millions and then hundreds of millions. The main reasons for this massive increase were the huge growth of the personal computer market, the invention of the World Wide Web by Tim Berners-Lee in the early 1990s, and the widespread adoption of broadband in the 2000s.

4. The Internet consists of multiple data systems. The most popular and important systems are:

WWW, the World Wide Web, a collection of files or pages containing links to other documents on the Internet. Most Internet services are now integrated on the Web.

E-mail, or electronic mail, for the exchange of messages and attached files. Mailing Lists are a combination of e-mail and discussion groups. Subscribe to a list and messages are distributed to your e-mail box.

Instant messaging (IM), a system for sending public and private messages to other users in real time over the Internet. You can chat privately with a friend, family member or business colleague. The latest

IM programs also incorporate telephone, video and file-sharing facilities and are becoming an alternative to traditional video conferencing programs. The most popular instant messaging services include Skype, WhatsApp, Viber, Telegram, etc.

File Transfer Protocol (FTP), a system for transferring data files between computers via the Internet. Video conferencing, a system that allows transmission of video and audio signals in real time, so users can exchange data, talk and see one another on the screen. Some services also let you do video conferencing, such as Skype and Facebook Video Calling. VoIP (Voice over Internet Protocol), or Internet Telephone, a system that lets people make voice calls over the Internet.

II. Read the text again and decide if the following statements are true or false.

1. The Internet is a network of networks.

2. The largest number of Internet users is in the UK.

3. Computers need to use the same File Transfer Protocol to communicate with each other.

4. Every computer connected to the Internet is given a unique address or IP number.

5. The Internet began as a military experiment.

6. The huge growth of personal computer market was one of the reasons for rapid growth of Internet users.

7. Tim Berners-Lee invented a broadband technology in the early 1990 s.

8. Mailing Lists are based on programs that send messages on a certain topic to all the computers whose users have subscribed to a list.

9. Many IM services now offer audio and video capabilities.

III. What Internet system do these people use?

1. I don't want to spend too much money on international phone calls, so I've found a cheaper way to talk to my friend from Canada.

2. I like receiving daily updates and headlines from newspapers on my computer.

3. I want to read people's opinions about current sporting events and express my views.

4. I'd like to check my students' draft essays on my computer and send them back with my suggestions.

5. I have designed a web page and want to transfer the data to my reserved web space.

6. I'd like to avoid flying to Hong Kong to attend the meeting but I want to see what's going on there.

IV. Fill the gaps with the correct prefix from the list.

ir- , in- , up-, re- , dis- , down-, de- , con

1. The printer was not working because someone had ... connected it by mistake. 2. As the results are ... regular, the program will have to be ... written. 3. Flash drives are ... expensive and ... usable. 4. Once you finish your program, you will have to test it and ... bug to remove all the mistakes. 5. If your mobile device has an Internet ... nection, you can ... load apps directly onto it. 6. Did you buy a full version of the OS or just an ... grade? 7. If your computer crashes, you may have to ... boot it.

B. TEXT STUDY

I. Read an article about net generation and decide which statement is true, false or not given.

1. As the Net Generation Survey found, 75 % students message instantly while doing schoolwork.

2. The trend towards collaborative work is an inherent feature of Net Generation.

3. The blogs of Net Generation can't be referred to their online diaries causing emotional honesty in their online communications.

4. Net generation students expect open and personal connection with their professors.

5. Net Generation students are confident that evolving technology can cope with the challenges that affect the world.

6. Net generation students are keen on dealing with vital global environmental issue.

7. The majority of college professors tend to think that students are failing at small group discussions.

8. Students and professors are pushing for the online course components to include more of the multimedia Web experience the Net Generation is accustomed to.

9. Net Generation workers are indifferent to the expression of approval for their achievements.

10. For many of them, work will never be the center of their lives, and they search out employers who understand the importance of maintaining a healthy work-play balance.

Text B. How Net Generation Students Work

Net Generation students are infamous for their multitasking skills and short attention spans. Growing up online, they're trained to quickly and simultaneously consume and process information from multiple media sources – and to ignore anything "boring" or otherwise uninspiring.

The Net Generation quickly shifts attention from one project to the next, always putting a high priority on speed. Sometimes that speed comes at a cost. Educators and researchers have found that the Net Generation lacks depth in its research and critical skills. Research shows that Net Generation college students are strong visual learners and weaker textual learners. One study examined a library class at California State University – Hayward, where students frequently ignored lengthy text directions for homework assignments. When the assignments were rewritten using images first, student scores increased. More than anything, Net Generation students are excellent collaborators. They're natural at networking and love to work in teams. For the Net Generation, collaboration can occur in the same classroom or with team members across the world. They're comfortable starting and maintaining online relationships and becoming "good friends" with people they've never met in person. The Net Generation is constantly connected. Not just to the Internet, but to each other. The powerful combination of cell phones, text messaging, instant messaging and e-mail means that Net Generation students are always mid-conversation with one or more friends either online, in person or both at the same time.

Social networking is a fancy word for a Net Generation way of life. The Net Generation Survey found that 69 percent of college students surveyed had a Facebook account. Net Generation students are open and emotionally honest in their online communications. For many, their blogs are literally online diaries, where no topic is taboo. With the popularity of YouTube, more and more students are posting blogs, or video blogs, that cut out the middle man by talking straight to

the viewer. In contrast with cynical Generation X, the Net Generation is optimistic, positive and driven to succeed. High achievers, they crave rewards and accolades for their hard work. They're aware of the many significant problems affecting the world, but they're confident that through youthful innovation and ever-improving technology, these problems will be solved.

Net Generation students are no stranger to community service. Volunteer projects have been a part of their academic and extracurricular life since kindergarten. Because of this, they value work that has meaning and improves the lives of others. Net Generation college students are strongly motivated by academic projects that have a real-world component, particularly those that address a major issue like the environment, homelessness or poverty.

College campuses were some of the earliest adopters of ubiquitous high-speed wireless networks. That's because students expect to be connected anywhere and everywhere. To that end, many colleges are trying to make other essential student services available online around-the-clock. These services include adding money to meal accounts, making doctor's appointments at the student health center and renewing library books online. Net Generation students expect the same availability from college administrators, staff and professors. They want to e-mail the director of the study abroad program and receive an answer quickly. Net Generation students work fast and make plans even faster. They need institutional infrastructures that can keep up with their pace.

College professors understand the traditional "lecture, read and test" method is failing to reach the Net Generation college student. Large lecture courses are regularly broken up into small group discussions. Microsoft PowerPoint presentations are popular, as are posting all presentations, lecture notes, assignments and syllabi online.

Businesses are also scrambling to understand and work alongside a new breed of employee. The focus should be on the product, not the process. Net Generation workers are still going to multitask. They'll have their iPod on, six browser windows open and three instant messaging conversations going while they're writing software code. The free flow of ideas is essential. An entry-level employee should be able to instant message a senior executive with an idea and expect a response. Employees should be able to set up virtual teams within offices and across different locations to develop new ideas independently.

Net Generation workers are used to the awards and accolades showered upon them as overachieving high school and college students, and the workplace should be no exception. Net Generation workers expect quick feedback from superiors and incentives for jobs well done, like extra vacation time or prizes.

II. Speaking practice.

a) Say which of the following ideas about the Internet may be considered as advantages and disadvantages. Think of any other pros and cons of the Internet.

Public facility, worldwide, the information may not be true or correct, spend too much time playing games, make free calls, visit many interesting websites, make new friends, downloading software may contain viruses.

b) Split into four groups and get ready to speak on one of the issues given below.

1. The definition of the Internet. 2. How the Internet works. 3. The origin of the Internet. 4. Major components of the Internet.

c) Most information on the Internet is on websites. Which features from the list below would you choose to make a good website? Give reasons for your choice.

1. Simple and user-friendly navigation. 2. Complex design and a lot of animation. 3. Fast-loading pages. 4. Brightly-coloured text. 5. Minimal scroll. 6. Fresh content. 7. Low resolution photography. 8. Cross-platform / browser compatibility.

III. What do the abbreviations URL, HTML, HTTP, CSS, PHP stand for? Read the text and check your answers.

World Wide Web

Nowadays, the terms "Internet" and "World Wide Web" are often used interchangeably-but they're actually not the same thing. The Internet is the physical network of computers all over the world. The World Wide Web is a virtual network of websites connected by hyperlinks. Websites are stored on servers on the Internet, so the World Wide Web is a part of the Internet. A web browser is a kind of application you use to access the World Wide Web. Any Internet-connected device like a laptop, tablet or smartphone should come with a browser pre-installed.

PCs come with Internet Explorer, and Macs come with Safari. If you prefer to use a different browser, you can download Firefox, Google Chrome, or Opera. Web pages are written with a simple coding system, called HTML (Hypertext Markup Language). A browser takes the HTML and translates it into the content you see on the screen. Websites often have links to other sites, also called hyperlinks. A web browser lets you navigate from one link to another. It also allows you to create bookmarks (or Favorites) for sites you like. To get to a webpage, you can type the URL (Uniform Resource Locator) into the browser address bar. The URL, also known as the web address, tells the browser exactly where to find the page. However, most of the time, people get to a webpage by following a link from a different page or by searching for the page using a search engine. If you type keywords or a phrase into a search engine, it will display a list of websites relevant to your search terms. A set of transfer rules, called HTTP (Hyper Text Transfer Protocol) is used to link Web files together across the Internet. This is why web page addresses begin with http, followed by a colon and two slashes.

Today, many web pages are not written in advance, but created dynamically in response to someone's input. This happens to answers to search engine queries and, for example, on shopping sites where people search for products within specific price ranges. As websites are becoming more sophisticated, web developers are using many more versatile tools. These include CSS (Cascading Style Sheets) and scripting languages such as JavaScript and PHP (Hypertext Preprocessor)

IV. Using the words in italics complete these instructions about the process of navigation.

Web page, search engine, web browser, client, URL, website, surf, web server.

1. Start up your computer and connect to the Internet.
2. Open your ... .
3. Type the ... to access a website.
4. Your web browser sends the request to the correct ... .
5. The server looks for the document and sends it to the ... computer.
6. Your web browser displays the selected ... ... on the screen.

7. From the home page of the ... you can ... to other pages by clicking on hyperlinks.

8. If you want to find more websites use a ... .

V. Read a short text about E-mail and study the way we say e-mail addresses.

An Internet e-mail address has a user name, the @ (at) symbol, and a domain name. The user name is the name you choose. The domain name has two parts separated by a dot (.). The first part is the network that receives the e-mail and the second is the top-level domain (TLD) which shows the type of organization, such as commercial (.com) or educational (.edu). Sometimes the TLD is a country code, such as .it (Italy).

VI. Say these e-mail addresses.

1. s_luc@redtop.com.fr
2. wills547@yahoo.co.uk
3. client-info@tech.store.com.de
4. n.tigers@callserve.com
5. mary-jones@hotmail.co.uk

VII. Translate the following sentences into English.

1. С главной страницы веб-сайта вы можете перемещаться по нему, нажимая мышью на гиперссылки в тексте или на изображения. 2. Содержание электронного сообщения обычно включает текст, а также изображения, аудио-, видео- и программные файлы как прикрепленные. 3. Если у вас есть любое устройство, поддерживающее Интернет, вам остается только открыть браузер и начать просмотр в сети. 4. Электронная почта – это один из самых старейших и самых универсальных способов, чтобы общаться и обмениваться информацией в Интернете. 5. У вас обычно попросят адрес электронной почты при заказе билетов и гостиницы по Интернету или заполнении какой-нибудь формы заявления. 6. – Что тебе не нравится в этом сайте? – Он медленно загружается, и фон текста – черный. 7. Некоторые сайты магазинов используют виртуальную реальность, чтобы рекламировать свою продукцию в сети. 8. Этот принтер полностью совместим с любым ведущим

программным обеспечением. 9. Сегодня существуют тысячи различных поисковых систем, доступных в Интернете. 10. Небезопасно открывать почтовые сообщения от неизвестных отправителей. Они могут содержать вирусы.

VIII. Match the prefixes in column A to the correct endings in column B.

column A	column B
DOWN	reader, -commerce, -mail
RE	time, -load
E	crime, -space, -slacking
UP	write, -boot, -set, -usable
CYBER	grade, -date, -load

IX. Complete these definitions with the words from Exercise VIII.

1. ... is to modify data in a file so that it has the most recent information.

2. ... is the buying and selling of products and services over the Internet.

3. ... is when a network or a computer is not working or unavailable for use.

4. ... is to start the computer again.

5. ... is the environment in which communication over computer networks occurs.

6. ... is to add or replace hardware or software in order to expand the computer's power.

7. ... is using a company's Internet access for activities which are not work-related, e.g. emailing friends, playing games, etc.

X. Practise conditional sentences.

a) Transform the following sentences according to the model.

Model: He runs round the park every morning, so he keeps very fit. If I ran round the park every morning, I would keep fit, too.

1. He lives in the South, so he can grow a lot of flowers. 2. He lives near his work, so he is never late. 3. He goes to bed early, so he

always wakes up in time. 4. They have a maid, so they can enjoy themselves.

b) Put the verbs in brackets into the correct form.

1. If he worked more slowly, he (not make) ... ... so many mistakes. 2. I could give you his address if I (know) ... it. 3. I (keep) … a gardener if I could afford it. 4. What would you do if the lift (get) ... stuck between two floors? 5. He (not go) ... ... there, if his family were not invited. 6. If I (know) ... her better, I (introduce) ... you.

c) Answer the questions, using complete conditional sentences.

1. If you had been born in 1960, how old would you have been in 1975?

2. If you had been late for this lesson, would you have apologized to the teacher?

3. What would you have done if there had been a holiday yesterday?

4. Could you have answered these questions correctly if you had been absent at the last lesson?

d) Put the verbs in brackets into the correct tenses. Don't forget that there exist mixed types of conditional sentences.

1. I had a sandwich for lunch. If I (have) ... a proper lunch, I (not feel) ... ... so hungry now. 2. He told his friend, "I'm not feeling very well. I (not be) ... ... here today if I (not promise) ... ... to come". 3. I can hardly keep my eyes open. If I (go) ... to bed earlier last night, I (not be) ... ... so tired now. 4. He looked at his watch while he was driving and thought, "If I (not stop) ... ... to get petrol, I (be) ... home now". (use might)

IX. Speak about Internet, instant messaging systems, file transfer protocols and e- male using key words, phrases and the topic sentences.

UNIT XVI

COMPUTER SOFTWARE.
PROGRAMMING LANGUAGES

VOCABULARY STUDY

Nouns and noun phrases

control flow – последовательность управляющих команд; computation – вычисление; spreadsheet software – программное обеспечение для табличных расчётов; freeware – бесплатное программное обеспечение; trial period – срок пробного пользования, период тестирования; charge – плата за оказываемые услуги; shareware – условно-бесплатное программное обеспечение; proprietary software – программное обеспечение собственной разработки; paradigm – категория; utility – служебная программа; script – сценарий; essence сущность; back end developer – разработчик серверной части приложения; retail – розничная торговля; acronym – акроним, вид аббревиатуры, образованной начальными звуками; shortcut – быстрая клавиша;

Adjectives

non-essential – несущественный; instant – мгновенный; open-source – с открытым исходным кодом; concurrent – для использования в многопоточной среде; relevant – релевантный, уместный; in-demand – востребованный; flexible – гибкий; robust – устойчивый к сбоям и ошибкам; numerical – численный;

Verbs and adverbs

Execute – выполнять, запускать; ultimately – в конечном итоге; cause – быть причиной, вызывать; carry out – выполнять; edit – редактировать; debug – отладить, устранить ошибки; purchase – покупать; maintain – поддерживать в рабочем состоянии; distribute – распространять; track – отслеживать.

I. Match the words with the definitions below.

Environment, programming language, trial period, source code, encompass, alter, requirement, familiar, assembler, feature.

1. Testing period of time to discover how effective or suitable something or someone is.

2. Language for writing software.

3. The system in which a computer or computer program operates.

4. The set of computer instructions that have been written in order to create a program or piece of software.

5. A typical quality or an important part of something.

6. To include several different things.

7. A program that changes computer instructions into machine code (a set of numbers that gives instructions to a computer).

8. An official rule about something that it is necessary to have or to do.

9. Easy to recognize because of being seen, met, heard, etc. before.

10. To change something, usually slightly, or to cause the characteristics of something to change.

II. Using a dictionary add as many words as possible into the table.

Verbs	*Adjectives*	*Nouns*
1. to alter		
2.		requirement
3. to execute		
4.	original	
5.		interpreter
6. to assemble		
7.		accessibility

III. Choose the words with similar meaning from the two groups and arrange them in pairs.

A. Load, debug, end-user, open-source, pass, provide, translate, programming language.

B. Application, software, programming language, editor, instruction, environment, software.

IV. Complete the sentences with the word collocations below that describe the advantages of high-level languages.

Easy to detect and remove errors; Machine Independence; Built-in library functions; Easy to understand; Easy to learn; Easy to write program.

There are several advantages of high-level programming languages. The most important advantages are:

a) … – the high-level languages are easier to learn than low level languages. The statements written for the program are similar to English-like statements.

b) … – the program written in high level language by one programmer can easily be understood by another because the program instructions are similar to the English language.

c) … – in high level language, a new program can easily be written in a very short time. The larger and complicated software can be developed in few days or months.

d) … – the errors in a program can be easily detected and removed. mostly the errors are occurred during the compilation of a new program.

e) … – Each high-level language provides a large number of built-in functions or procedures that can be used to perform specific task during designing of new programs. In this way, a large amount of time of programmer is saved.

f) … – program written in a high-level language is machine independent. It means that a program written in one type of computer can be executed on another type of computer.

V. Make up your own sentences using the following words and word combinations.

A collection of computer programs, to execute the software, high-level programming languages, different classes of computer software, provide an environment or platform, test, debug, compiler, interpreter, assembler, Freeware, Shareware, Open Source Software, Closed Source Software, Utility Software.

VI. Translate into English.

Программное обеспечение – наряду с аппаратными средства-

ми, важнейшая составляющая информационных технологий, включающая компьютерные программы и данные, предназначенные для решения определенных задач.

В компьютерном жаргоне часто используется слово «софт» от английского software, которое в этом смысле впервые применил в журнале American mathematical Monthly математик из Принстонского университета Джон Тьюки (John W. Tukey) в 1958 г.

По назначению ПО разделяется на системное, прикладное и инструментальное. Системное программное обеспечение реализует связь аппаратного и программного обеспечения, выступая в качестве «межслойного интерфейса», с одной стороны которого аппаратура, а с другой приложения пользователя. Прикладное программное обеспечение призвано решать прикладные задачи пользователя. Например, финансовое управление, сеть поставок, управление транспортными расходами. Инструментальное программное обеспечение предназначено для использования в ходе проектирования, разработки и сопровождения программ. Виды инструментального ПО: текстовые редакторы, компиляторы, интерпретаторы, линковщики, отладчики, ассемблеры.

По способу распространения (доставки, оплаты, ограничения в использовании) ПО подразделяются на:

Freeware – бесплатное ПО, являющееся собственническим. Условия его распространения могут запрещать его копировать, изменять, распространять;

Shareware – условно-бесплатное ПО. Пользователю предлагают пробную версию с напоминанием о необходимости оплаты использования программы. Основной принцип этого ПО: "попробуй, прежде чем купить";

Proprietary ware – собственническое ПО. Правообладатель сохраняет за собой монополию на его использование, копирование, модификацию.

A. TEXT STUDY

I. Read the text and answer the following questions.

1. What does software include?
2. What does software execution mean?
3. What operations do computers carry out?
4. Who introduced the term 'software'?

5. What does system software coordinate?

6. Give examples of application software.

7. What software is used for creating both the system as well as application software?

8. Characterize some additional subcategories of software.

Text A. Different classes and types of computer software

Computer software is a general term used to describe a collection of computer programs, procedures and documentation that perform some tasks on a computer system. Software includes websites, programs, video games, etc. that are coded by programming languages like C, C++, etc. The term "software" is sometimes used in a broader context to mean anything which is not hardware (which encompasses the physical interconnections and devices required to store and execute (or run) the software) but which is used with hardware, such as film, tapes, records, etc.

In computers, software is loaded into RAM and executed in the CPU. Once the software is loaded, the computer is able to execute the software. This involves passing instructions from the application software, through the system software, to the hardware which ultimately receives the instruction as machine code. Each instruction causes the computer to carry out an operation – moving data, carrying out a computation, or altering the control flow of instructions. Software is usually written in high-level programming languages that are easier and more efficient for humans to use (closer to natural language) than machine language. The term "software" was first used by John. W. Tukey in 1958.

A software is a collection of programs that help one to communicate with the hardware of the computer. There are different classes of computer software which are useful for several purposes.

System Software coordinates the complete system hardware and provides an environment or platform for all the other types of software to work in. It is the most basic type of software in any computer system, which is essential for other programs, applications and indeed for the whole computer system to function. For desktop computers, laptops and tablets System software examples are Microsoft Windows 10, Mac OS, Linux, Ubuntu, devices drivers, etc. For smartphones: Apple's iOS, Google's Android, Windows Phone OS.

Application Software comprises those programs that help the user perform tasks of his/ her choice. They are non-essential software which are installed and run depending upon the requirements, in the environment provided by the system software. Application software examples are MS Office, Open Office, Media Players, educational software, media development software, antivirus software, etc.

There are some examples of application software that allow you to do specific work. MS Excel is spreadsheet software that you can use for presenting and analyzing data. Photoshop is a photo editing application software by Adobe. You can use it to visually enhance, catalogue and share your pictures. Skype is an online communication app that you can use for video chat, voice calling and instant messaging.

Programming software is used to write, test, debug, and develop other software programs and applications. They are used for creating both the system as well as application software.

Programming software is used by software programmers as translator programs. They are facilitator software used to translate programming languages (i.e., Java, C++, Python, PHP, BASIC) into machine language code. Translators can be compilers, interpreters and assemblers. You can understand compilers as programs that translate the whole source code into machine code and execute it. Interpreters run the source code as the program is run line by line. And assemblers translate the basic computer instructions – assembly code – into machine code.

Different programming language editors, debuggers, compilers and Integrated Development Environments (IDE) are examples of programming software. For example: Eclipse – a Java language editor; Coda – programming language editor for Mac; Notepad++ – an open-source editor for Windows; Sublime Text – a cross-platform code editor for Mac, Windows, and Linux.

There are five additional subcategories of software. These are: Freeware; Shareware; Open Source Software; Closed Source Software; Utility Software.

Freeware software is any software that is available to use for free. They can be downloaded and installed over the internet without any cost. Some well-known examples of freeware are: Google Chrome; Skype; Instagram; Snapchat; Adobe reader. Although they all fall under the category of Application or end-user software, they can further be categorized as freeware because they are free for you to use.

Shareware, on the other hand, are software applications that are paid programs, but are made available for free for a limited period of time known as 'trial period'. You can use the software without any charges for the trial period but you will be asked to purchase it for use after the trial ends. Shareware allows you to test drive the software before you actually invest in purchasing it. Some examples of Shareware that you must be familiar with are: Adobe PhotoShop; Adobe Illustrator; Netflix App; Matlab; McAfee Antivirus.

Open Source Software is a type of software that has an open-source code that is available to use for all users. It can be modified and shared with anyone for any purpose. Common examples of open source software used by programmers are: LibreOffice; PHP; GNU Image Manipulation Program (GIMP).

Closed Source Software. These are the types of software that are non-free for the programmers. For this software, the source code is the intellectual property of software publishers. It is also called 'proprietary software' since only the original authors can copy, modify and share the software. Following are some of the most common examples of closed-source software: .NET; Java; Android; Microsoft Office; Adobe PhotoShop.

Utility software is considered a subgroup of system software. They manage the performance of your hardware and application software installed on your computer, to ensure they work optimally. Some features of utility software include: Antivirus and security software; File compressor; Disk cleaner; Disk defragmentation software; Data backup software.

There can be multiple ways to classify different types of computer software. The software can be categorized based on the function they perform such as Application software, System software, Programming Software, and Driver software. They can also be classified based on different features such as the nature of source code, accessibility, and cost of usage.

II. Study the table, analyze and describe different types of software.

Application Software Type	Examples
Word processing software: Tools that are used to create word sheets and type	Microsoft Word, WordPad, AppleWorks and Notepad

documents etc.	
Spreadsheet software: Software used to compute quantitative data.	Apple Numbers, Microsoft Excel and Quattro Pro
Database software: Used to store data and sort information.	Oracle, MS Access and FileMaker Pro
Application Suites: A collection of related programs sold as a package.	OpenOffice, Microsoft Office
Multimedia software: Tools used for a mixture of audio, video, image and text content.	Real Player, Media Player
Communication Software: Tools that connect systems and allow text, audio, and video-based communication.	MS NetMeeting, IRC, ICQ
Internet Browsers: Used to access and view websites.	Netscape Navigator, Microsoft Edge, and Google Chrome
Email Programs: Software used for emailing.	Microsoft Outlook, Gmail, Apple Mail

III. Choose the best option to the following statements.

1. In computers, software is loaded into … and executed in the CPU.

a) ROM

b) RAM

c) CPU

2. Each instruction causes the computer to … an operation.

a) execute

b) promote

c) change

3. Software is usually written in … languages.

a) mark up

b) assembler

c) high-level

4. The software can be categorized based on … .

a) different features such as the nature of source code, accessibility, etc.

b) the function they perform.

c) all of the above.

5. ... can be modified and shared with anyone for any purpose.
a) Utility software ...
b) Shareware ...
c) Open source software ...

IV. Choose the correct word to fill the spaces.

1. Turn on your computer. It will usually take a few minutes to ...
a) boot itself.
b) boot up.
c) get booted.
2. Windows XP, Macintosh OSX and Linux are ...
a) operating systems.
b) operating tools.
c) operators.
3. On my computer, I have a picture of my cat as the ...
a) desktop background.
b) desktop picture.
c) desktop scene.
4. Microsoft Word, Adobe Acrobat and CorelDraw are programs or ...
a) applicators.
b) appliers.
c) applications.
5. To open Microsoft Word, click on the ...
a) picture.
b) symbol.
c) icon.
6. I keep all my digital photos in a ... called "Photos".
a) folder
b) packet
c) box
7. Is it possible to open Microsoft Excel ... in Word?
a) texts
b) files
c) pages
8. In Microsoft Word, to start typing a new letter, open a new ...
a) document.
b) page.

c) paper.

9. When you ... a document, it's sent to the recycle bin.

a) destroy

b) erase

c) delete

10. Deleted documents stay in the recycle bin until you ... it.

a) wash

b) empty

c) clean

11. In Windows, the icon is just a ... to the application. If you delete the icon, the application will still be on your computer.

a) connector

b) shortcut

c) link

12. If the computer crashes, you can try pressing the ... button.

a) restart

b) recommence

c) replay

13. When I've finished using my computer, I always ...

a) close it down.

b) shut it down.

c) shut it off.

14. If I leave my computer on without using it, after a while it goes into ... mode.

a) stand down

b) waiting

c) standby

B. TEXT STUDY

I. Read the text and answer the following questions.

1. What is a programming language used for?

2. What are the types of programming languages?

3. Characterize some of the most relevant and in-demand languages?

Text B. Types of programming languages

A programming language is a computer language that a programmer uses to develop software programs, scripts, or other sets of instructions for computers to execute. Although many languages share similarities, each has its own syntax. Once a programmer learns the languages rules, syntax, and structure, they write the source code in a text editor or IDE. Then, the programmer often compiles the code into machine language that can be understood by the computer. Scripting languages, which do not require a compiler, use an interpreter to execute the script. Each of the different programming languages mentioned can be broken into one or more of the following types (or paradigms) of languages.

High-level (most common) / low-level; Declarative / imperative / procedural; General-purpose / domain-specific; Object-oriented / concurrent; Command / Compiled / Script language; Answer set. A language can also be broken into one of five generation languages. Today, there are hundreds of different programming languages.

Application and program development involve programs you work with on a daily basis. For example, the Internet browser you are using to view this web page is considered a program. If you are interested in developing a program, consider the following languages: C, C#, C++, Java, Swift, Visual Basic.

Artificial intelligence or related fields involve creating the character interactions in computer games, portions of programs that make decisions, chatbots, and more. If you're interested in developing an AI, consider the following languages: AIML, C, C#, C++, Prolog, Python.

Database developers create and maintain databases. If you're interested in creating or maintaining a database, consider any of these: DBASE, FoxPro, MySQL, SQL, Visual FoxPro.

Game development involves creating computer games or other entertainment software. If you're interested in developing a game, consider these: C, C#, C++, DarkBASIC, Java.

Computer drivers and programming hardware interface support are a necessity for hardware functionality. If you're interested in developing drivers or software interfaces for hardware devices, consider these: Assembly, C.

Internet and web page development are the essence of the Internet. Without developers, the Internet would not exist. If you're interested in

creating web pages, Internet applications, or other Internet-related tasks, consider these languages: HDML, HTML, Java, JavaScript, Perl, PHP, Python, XML.

There are dozens of programming languages used in the industry today. Let us overview some most important, relevant and in-demand of these languages.

Python is an advanced programming language that is interpreted, object-oriented and built on flexible and robust semantics. Python was developed in the late 1980s in the Netherlands and first released to the public in 1991. Python is used by developers, software engineers, back end developers, Python programmers, also by employers in information technology, engineering, professional services and design in scientific and numeric computing; desktop graphical user interfaces (GUIs). Python lets you work quickly to integrate systems as a scripting or glue language. It's also suited for Rapid Application Develop (RAD). NASA uses Python in its Integrated Planning System as a standard scripting language. It is simple to learn and easily read.

Java is a general-purpose, object-oriented, high-level programming language with several features that make it ideal for web-based development. Originally known as Oak, Java was developed in 1990 at Sun Microsystems to add capabilities to the C++ language. Java was developed according to the principle of WORA (Write Once Run Anywhere). The language was introduced to the public in 1995 and is now owned by Oracle. It is used by software engineers, Java developers, by employers in communications, education, finance, health sciences, hospitality, retail, Internet of Things (IoT), Cloud Computing, etc.

Java is used to develop enterprise-level applications for video games and mobile apps, as well as to create web-based applications with JSP (Java Server Pages). When used online, Java allows applets to be downloaded and used through a browser, which can then perform a function not normally available. Programs that use or are written in Java include Adobe Creative Suite, Eclipse, Lotus Notes, Minecraft and OpenOffice. Java is the core foundation for developing Android apps. Its features are application portability, robust and interpreted language, extensive network library.

Ruby is an open-sourced, object-oriented scripting language that can be used independently or as part of the Ruby on Rails web framework. Designed in 1995, it is used by software engineers, data science engineers, employers in technology, engineering, professional services,

design, science and quality control, Web App Development, Robotics, Networking. Ruby is used for simulations, 3D modeling, and to manage and track information. Amazon, Twitter were created using Ruby on Rails. It is free to use, copy, modify and distribute.

HTML is the standard markup language used to create web pages; it ensures proper formatting of text and images (using tags) so that Internet browsers can display them in the ways they were intended to look. HTML was created by physicist Tim Berners-Lee in 1990 to allow scientists to share documents online. Is used by Web developers, technical editors, email designers, software engineers. HTML is used to create electronic documents (pages) displayed online. Visit any page and you will see an example of HTML in action. The diversity and complexity in the structure and appearance of today's sites is made possible with HTML. It is free and accessible, multiple versions are available.

JavaScript is a client-side programming language that runs inside a client browser and processes commands on a computer rather than a server. Despite its name, JavaScript is not related to Java. JavaScript was designed by Netscape and originally known as LiveScript, before becoming JavaScript in 1995. It used by Khan Academy, Linkedin, Yahoo, etc. JavaScript is used primarily in Web development to manipulate various page elements and make them more dynamic, including scrolling abilities, printing the time and date, creating a calendar and other tasks not possible through plain HTML.

C Language is a structure-oriented, middle-level programming language mostly used to develop low-level applications. It was developed in 1972 at Bell Labs specifically for implementing the UNIX system. It eventually gave rise to many advanced programming languages, including C++, Java C#, JavaScript and Pearl. It is used by employers in Microsoft, Apple, Oracle, in Embedded Systems, Systems Programming, Artificial Intelligence, Industrial Automation, Computer Graphics, Space Research, Image Processing and Game Programming. C Language is used to develop systems applications that are integrated into operating systems such as Windows, UNIX and Linux, as well as embedded software. Applications include graphics packages, word processors, spreadsheets, operating system development, database systems, compilers and assemblers, network drivers and interpreters.

C++ is a general purpose, object-oriented, middle-level programming language and is an extension of C language, which makes it pos-

sible to code C++ in a "C style". In some situations, coding can be done in either format, making C++ an example of a hybrid language.

C# (pronounced C-sharp) is a multi-paradigm programming language that features strong typing, imperative, declarative, functional, generic, object-oriented and component-oriented disciplines. C# helps developers create XML web services and Microsoft .NET-connected applications for Windows operating systems and the internet. It is similar to Java in capabilities and ideal for beginners.

PHP (Hypertext Preprocessor) is an open-source scripting language designed for creating dynamic web pages that effectively work with databases. It is also used as a general-purpose programming language.

SQL (Structured Query Language) is a database query language that allows adding, accessing and managing content in a database. It is the language that allows programmers to perform the common acronym CRUD (Create; Read; Update; Delete) within a database.

Swift is Apple's newest open-source, multi-paradigm programming language for iOS and OS X apps. Swift integrates Objective-C's named parameters and object-oriented model, while including an advanced compiler, debugger and framework infrastructure.

II. Comprehension Check. State whether the statements are true or false. Correct if necessary.

1. When a programmer learns the languages rules, syntax, and structure, he/she can write a programming language in a text editor or IDE.

2. Scripting languages use a compiler as well as an interpreter to execute the script.

3. Database developers involve creating the character interactions in computer games.

4. Python lets you work quickly to integrate systems as a scripting or glue language.

5. Java was developed according to the principle of interchangeability.

6. C++ was developed in 1972 at Bell Labs specifically for implementing the UNIX system.

7. C# helps developers create XML web services and Microsoft NET-connected applications for Mac OS.

8. Swift is Apple's newest open-source, multi-paradigm programming language for iOS and OS X apps.

III. Insert the missing words.

Close, drag and drop, find, free up, installed, launch, password, renamed, running, save, search, start menu, uninstalling, user, window.

1. I couldn't open the document you emailed me. I don't have Microsoft Word ... on my computer.

2. Click on that icon to ... Google Chrome.

3. I ... an important document, and now I can't find it.

4. If your computer is ... several applications at the same time, it's more likely to crash. It's better to ... the applications. You're not using.

5. You can access all the applications on your computer from the ... .

6. You can view two Word documents on the screen at the same time. You just open a new ... .

7. It's easy to move files into a folder. You can just ... .

8. I asked the computer to ... for files with «English» in the name, but it didn't ... any.

9. This is a shared computer. Each ... has their own ... .

10. You can ... space on your hard drive by ... applications you never use.

11. If you ... your photos as JPEGs instead of TIFFs, you'll use a lot less memory.

IV. Match the words with the punctuation marks and symbols.

1. Full stop 2. comma 3. exclamation mark 4. question mark 5. single quotes 6. double quotes 7. dollar sign 8. percentage sign 9. ampersand 10. asterisk 11. hash 12. brackets 13. left bracket 14. square brackets 15. underscore 16. hyphen 17. plus sign 18. equals sign 19. colon 20. semicolon 21. «at» sig 22. forward slash 23. backward slash 24. Arrow

a. ! b. @ c. , d. & e. . f. = g. 'Hello' h. → i. *j. "Hello" k. _ l. - m. ? n. / o. ( ) p. $ q. \ r. [ ] s. % t. (u. # v. : w. + x. ;

V. Speak about different types of computer software and programming languages.

UNIT XVII

OPERATING SYSTEMS

VOCABULARY STUDY

Nouns and noun phrases

Utilization – использование; allocation – размещение, распределение; detection – обнаружение; pen drive – флеш-накопитель; process scheduling – многозадачный режим, диспетчеризация процессов; collective – совокупность; request – запрос; response – ответ, отклик; aid – помощь; buffer delay – задержка буфера; accounting – учёт использования ресурсов; constraint – ограничение; delay – задержка;

Adjectives and collocations

Predictable – предсказуемый; unauthorized – неавторизованный, неразрешенный; similar – похожий;

Verbs, Adverbs

Occur – происходить, случаться; perform batch job – выполнять работу в пакетном режиме; assign – назначать.

I. Match the words with the definitions below.

Allocation, batch, capability, unauthorized, assign, disastrous, impact, queue, requirement.

1. A group of things that are dealt with or produced at the same time, or a group of people who are similar in some way.

2. To give a particular job or piece of work to someone.

3. Extremely bad or unsuccessful.

4. The process of giving someone their part of a total amount of something to use in a particular way.

5. The ability or power to do something.

6. Without someone's official permission to do something or be in a particular place.

7. An official rule about something that it is necessary to have or to do.

8. A powerful effect that something, especially something new, has on a situation or person.

9. A list of jobs that a computer has to do.

II. Using a dictionary add as many words as possible into the table.

Verbs	Adjectives	Nouns
1. to manage		
2.		detection
3. to perform		
4.	attached	
5.		allocation
6. to predict		
7.		requirement

III. Choose the words with similar meaning from the two groups and arrange them in pairs.

A. Keep, sense, multi-programming, internal, device, error, process, unauthorized;

B. Memory, user, scheduling, management, general, a track, environment, prevention.

IV. Complete the sentences with the words below. You may have to change some words slightly.

Data, virus attack, log, response time, frequency, unauthorized access, password, task, boost, system performance.

Security is provided by OS to the user data and prevents (1). Data can be protected by giving the (2) to the files. When an unknown user checks the files, OS asks for the password and hence the (3) is protected. The system itself is protected with a password. This helps in checking the persons who (4) into the system.

System performance is maintained with the help of the OS. It monitors the (5) taken by the system after the service request. If there is any unusual variation in the time, OS monitors the (6) and brings the issue into the user's notice. High variation or very low variation can be the result of any (7). The user is notified to bring the necessary changes. Various applications or tasks and the number of users doing the (8) are

accounted for by OS. This helps to know the number of users and the (9) of application usage.

V. Correct the definitions. Put the derivatives of the word LOAD given in italics into their proper places in the sentences.

1. If you have something *overloaded* you have the information or software applications loaded for you before you start using it. 2. If you have something *freeloaded* you want the information to be shown on the screen again, usually because there has been a problem or because you want the information to be as new as possible. 3. If you have something *downloaded* you copy or move programs or information to a larger computer system or to the Internet. 4. If you have something *uploaded* you copy or move programs or information into a computer's memory, especially from the internet or a larger computer. 5. If you have something *reloaded* you load it onto your computer without being charged. 6. If you have something *preloaded* your computer is supplied with too much information to be processed.

VI. Translate the following sentences into English.

1. Операционная система организует работу как программного, так и аппаратного обеспечения ПК: одновременный запуск нескольких приложений, обработку и выполнение команд центральным процессором, сохранение файлов на ПК или внешнем жестком диске, управление памятью компьютера и другие функции. 2. Таким образом, набор ключевых функций ОС включает в себя установку программных утилит для настройки работы приложений и устройств компьютера. 3. Операционная система выполняет ключевую роль в обеспечении работы как встроенных, так и загружаемых приложений. 4. По статистике, пользователи операционной системы Windows составляют около 90%, в то время как Mac пользуется только около 10%. На самом деле, первая является более доступной и дешевой для пользователей ПК, а последняя более дорогой. 5. Многие программисты пользуются операционной системой Linux, главное преимущество которой, – ее открытый доступ, позволяющий пользователю редактировать системные утилиты. Данная ОС является более надежной, защищенной от шпионских расширений и менее подверженной вирусным атакам. 6. Командный интерфейс менее удобен в использовании, чем гра-

фический интерфейс, так как каждое меню быстрого доступа, всплывающее и выпадающее меню предлагают пользователю широкий выбор опций, доступных нажатием клавиши мышки. 7. – Какая операционная система установлена на твоем смартфоне? – Это Андроид. Она поддерживает различные приложения и регулярно обновляется.

A. TEXT STUDY

I. Read the text and answer the following questions.

1. What is the definition of an Operating System?
2. How does an operating system manage hardware resources?
3. What are the functions of OS?
4. What allocates and de-allocates the device efficiently?
5. What is a File System?
6. What is job accounting used for?
7. What can a broad family of operating systems be categorized into?
8. What types can Real Time systems be classified into?

Text A. Operating Systems

An Operating System (OS) is a powerful program that manages and controls the software and hardware on a computing device so as to make the device behave in a predictable but flexible way. An OS acts an interface between a user and a device. Thus, in general sense, an OS is that software which helps a user to run other applications on his computing device.

All the computers and computer-like devices comprise Operating System, including laptop, desktop, or any other smart computing system like a smart phone or a smart watch. Some of the popular OS are Linux, OS X, WINDOWS, VMS, OS/400, AIX, z/OS, etc.

The OS performs multiple functions and management. It manages computer's hardware resources by performing required services:

Front end management of hardware resources. It manages Input and Output devices such as a mouse, keyboard, display monitors, scanners and printers; it manages network devices such as routers, modems and network connections; it manages storage devices, both internal and external drives.

Back end utilization of software applications for managing hardware resources. It manages the allocation of internal memory between multiple applications. An OS sends message about the status of operation and any error that may have occurred to the interactive user. It helps in performing batch jobs for example, printing etc. Depending on the capability of devices that can offer parallel processing, a program is managed by OS such that it can run on more than one processor at a time.

The functions of an OS include: Memory Management. Device Management. Processor Management. File Management. Controls System Performance. Security. Error Detection. Coordination among Software and Users. Job accounting.

Memory Management. One of the main functions of OS is to manage the primary and secondary memory. All the memory devices such as hard disk, pen drive etc. are managed by OS. Memory management keeps an eye on each and every memory location, in any case either it is allocated or it is not allocated (free). Memory allocation to the processes is also decided and checked by Operating System. It decides and checks which process will obtain memory and at what time.

Device Management. An OS with help of their respective drivers manages device communication. Following activities are performed by an Operating System for device management: It keeps a track of all devices. This task is performed by I/O controller. It decides which process will get the device, when and for how long. It allocates and de-allocates the device efficiently.

Processor Management. In a multi-programming environment, it is OS which decides which process will get the processor when and for how long. This task is called Process Scheduling. Following activities are done by OS for processor management: It keeps a track of processor tasking and checks the status of process. Traffic controller performs this task. It allocates the processor and also de-allocates processor when a process is complete and not required.

File Management. In a file system, generally directories are organized for usage and easy navigation. Following activities are performed by an OS under file management: It keeps a track of location, information, status etc. This collective is known as File System. It decides who will get the resources. It allocates and de-allocates the resources.

Controls System Performance. An OS records delays between a request and response of the system.

Security. An OS by using password and other similar techniques prevents and checks unauthorized users to access the data and program.

Error Detection. By using various error detecting aids an operating system helps in prevention of errors.

Coordination among Software and Users. It Coordinates and assigns compilers, assemblers, interpreters and other software to users.

Job accounting. It keeps a track of resources and jobs used by different users all the time.

Types of Operating Systems

The broad family of operating systems can be categorized in to four types based on their controlling and supporting systems. These types of Operating System are: *Real Time Operating System* (RTOS); *Single User Single Task* OS; *Single User Multi Tasking* OS; *Multi User* OS.

A *Real Time Operating System* (RTOS) intends to provide real time applications that process data without buffer delays. A Real Time Operating System is a time bound operating system which has fixed time constraints. Processing has to be done within the defined time constraints or the system will definitely fail. Examples of Real Time systems are Air Traffic Control Systems, Command Control Systems etc.

Real Time systems are classified in three types depending on two factors i.e. on factors inside the computer system and factors outside the computer system. A missed deadline in Hard Real Time Systems is disastrous. In case of Soft Real Time Systems it may lead to a significant loss. In Firm RTOS, the deadline is specified but missing it does not cause a big impact.

Command Control systems and Air traffic control systems are best examples of Hard Real Time systems. Online transaction systems, like booking a movie ticket or airline reservation systems are best examples of Soft Real Time systems. Multimedia applications is one example of Firm RTOS.

Single User Single Task Operating System. As the name indicates, Single User Single Task OS is a system in which only one program is executed at one time. It manages the computer in a way that one user can successfully perform one thing at a time. There is a problem with these types of Operating System that the program has to be arranged in a queue.

Single User Multi Tasking Operating System. Most people use this Operating-System on their computers, laptop and desktops today. Best examples of these types of Operating System are Apple's Mac OS platform and Microsoft's Windows. This Operating System will allow a single user to operate several programs at the same time. For example, a Windows user may be writing an e-mail while printing a word document while downloading a file from Internet.

Multi User Operating System allows various different users on different desktop or computer to access a single System. A user at the terminal or desktop, through a network takes access of the system and other system attached machines such as printers.

The Operating System takes care of all the requirements of the various users in a balanced manner. Also, it ensures that each of the programs being used has a separate and sufficient resource so that problem of one user doesn't affect the entire community of users.

II. Choose the best option to the following statements.

1. An OS acts an interface between …
a) a user and a troubleshooter.
b) a device and a developer.
c) a user and a device.
2. The OS performs multiple functions and management. It manages.
a) computer's hardware resources.
b) computer's software resources.
c) computer's spyware resources.
3. The functions of an OS include ...
a) memory Management. Device Management. Processor Management.
b) file Management. Controls System Performance. Security. Error Detection.
c) all of the above
4. File management keeps a track of …
a) location, information, status etc.
b) input/output devices.
c) processor tasking and checks the status of process.
5. Real Time systems are classified in three types ...
a) Hard Real Time Systems, Soft Real Time Systems, Firm RTOS.

b) Single User Single Task system; Single User system; Multi-Tasking system.

c) Command control systems; Traffic control systems; Air traffic control systems.

III. Comprehension Check. State whether the statements are true or false. Correct if necessary.

1. An OS is that hardware which helps a user to run other applications on his computing device.

2. Back end utilization of software applications for managing hardware resources manages the allocation of external memory between multiple applications.

3. One of the main functions of OS is to manage the primary and secondary memory.

4. An OS records errors between a request and response of the system.

5. Operating System will allow a single user to operate several programs alternatively.

6. An OS by using password and other similar techniques prevents and checks unauthorized users to access the data and program.

7. OS keeps a track of processor tasking and checks the status of process for error detection.

8. Real Time systems are classified in three types depending on two factors i.e. on factors inside the computer system and factors outside the computer system.

IV. Complete the sentences with one of the words in the necessary form.

Utilities, configuration, core, modify, tend, distribute, drop-down, account for, preloaded, pull-down, upgrade, enhanced, task bar, platforms.

1. There are several ... functions that the operating system performs such as starting and shutting down a computer, ... provision, devices ... and others.

2. Operating systems usually come... on any computer you buy, but it is possible to ... it.

3. Apple and Windows OSs have developed ... software being regularly upgraded.

4. A user gets access to system functions by selecting program icons as well as other items from ... and ... menus and the ... .

5. In fact, most computing resources are built on the Windows and Apple ... .

6. Linux is the only open-source operating system, the flavor of which is the possibility for any user to ... and ... it.

7. Apple computers, which ... 9.5% of the operating systems market, ... to be much more expensive.

V. Choose the necessary modal verb.

1. The senior manager (can/is to/ might) check the ongoing updates of a new system. 2. To be loaded successfully the file (have to/ could/ should) be free of viruses. 3. The Start menu (may/should/ought to) provide a customizable list of programs for the user. 4. The start menu of a new OS Windows (had to/could/might) be expanded to encompass various My Documents folders. 5. Social bookmarking websites (are to/can/may) centralize online services, which allow users to store and share Internet bookmarks. 6. A screenshot reader is a form of assistive technology (AT) which (have to/can/ should) be very useful for people who are blind.

VI. Speaking. Choose an operating system and speak about its usability. Use the prompts below. Share your opinion with the groupmates.

Usability, interface, advantages and disadvantages, most common applications, ease of use and prospects of developing.

B. TEXT STUDY

I. Read the text and answer the following questions. Entitle the text.

1. What did IBM contact Bill Gates for?

2. Was MS-DOS successful enough to dominate the IBM PC market?

3. Who invented the GUI (Graphical User Interface)? What is GUI?

4. What did Steve Jobs embark on an Apple?

209

5. What company was strongly influenced by the success of the Macintosh?

6. What was the first iOS for Apple's mobile operating system?

7. What new features were added to the OS Windows 7?

8. When did Google launch Chrome OS?

9. What are we to expect in the future OS?

Text B. History of Operating Systems

In the early 1980s, IBM designed the IBM PC and looked around for software to run on it. People from IBM contacted Bill Gates to license his BASIC interpreter. They also asked him if he knew of an operating system to run on the PC. Gates suggested that IBM contact Digital Research, then the world's dominant operating systems company. Consequently, IBM went back to Gates asking if he could provide them with an operating system.

When IBM came back, Gates realized that a local computer manufacturer, Seattle Computer Products, had a suitable operating system, DOS (Disk Operating System). Gates then offered IBM a DOS/BASIC package, which IBM accepted. IBM wanted certain modifications, so Gates hired the person who wrote DOS, Tim Paterson, as an employee of Gates' company, Microsoft, to make them. The revised system was renamed MS-DOS (Microsoft Disk Operating System) and quickly came to dominate the IBM PC market.

Although the initial version of MS-DOS was fairly primitive, subsequent versions included more advanced features, including many taken from UNIX. CP/M, MS-DOS, and other operating systems for early microcomputers were all based on users typing in commands from the keyboard. That eventually changed due to research done by Doug Engelbart at Stanford Research Institute in the 1960s. Engelbart invented the GUI (Graphical User Interface), complete with windows, icons, menus, and mouse. These ideas were adopted by researchers at Xerox PARC and incorporated into machines they built.

One day, Steve Jobs, who co-invented the Apple computer in his garage, visited PARC, saw a GUI, and instantly realized its potential value, something Xerox management famously did not. Jobs then embarked on building an Apple with a GUI. This project led to the Lisa, which was too expensive and failed commercially. Jobs' second attempt, the Apple Macintosh, was a huge success, not only because it

was much cheaper than the Lisa, but also because it was user friendly, meaning that it was intended for users who not only knew nothing about computers but furthermore had absolutely no intention whatsoever of learning.

When Microsoft decided to build a successor to MS-DOS, it was strongly influenced by the success of the Macintosh. It produced a GUI-based system called Windows. For about 10 years, from 1985 to 1995, Windows was just a graphical environment on top of MS-DOS. However, starting in 1995 a freestanding version of Windows, Windows 95, was released that incorporated many operating system features into it, using the underlying MS-DOS system only for booting and running old MS-DOS programs. In 1998, a slightly modified version of this system, called Windows 98 was released. Nevertheless, both Windows 95 and Windows 98 still contain a large amount of 16-bit Intel assembly language.

Another Microsoft operating system is Windows NT (NT stands for New Technology), which is compatible with Windows 95 at a certain level, but a complete rewrite from scratch internally. It is a full 32-bit system. Version 5 of Windows NT was renamed Windows 2000 in early 1999. That did not quite work out either, so Microsoft came out with yet another version of Windows 98 called Windows Me (Millennium edition).

On March 6, 2008, iPhone OS 1 was the first iOS for Apple's mobile operating system. No official name was given to the system. Apple stated that the iPhone ran on a version of its desktop operating system macOS, then known as Mac OSX. When Apple released the iPhone software development kit (iPhone SDK), it then named the operating system as iPhone OS which later on became iOS.

On September 23, 2008, Android was released. Android is a Mobile OS which was developed by Google. Based on the Linux Kernel and other Open Source software. It is designed mainly for Touchscreen devices although there are other renditions of the OS. Android is IOS's first major competitor.

On October 22, 2009, Microsoft launched Windows 7 internationally to the public.

Windows 7 was intended to be an upgrade of Windows Vista, its predecessor and addressed Vista's poor critical reception while maintaining its hardware and software compatibility.

New features were also added to the OS such as Libraries, HomeGroup – a file sharing system, support for multi-touch input, "Action Center" interface for an overview of maintenance information and system security, and edits were made to the User Account Control to make it less intrusive.

On May 2011 Google launched Chrome OS which is a Linux Kernel based OS. It is a free software which uses the Google Chrome web browser as it's a primary user interface (UI) and supports web applications.

Its User Data runs directly off of the cloud, making it the first OS to be cloud-based.

After reviewing some of the most well-known operating systems through the generations, it is evident that there has been a huge advancement in the world of operating systems and how these systems have become more user-friendly and graphics-oriented in order to deliver the best product for engagement to the end user.

Looking at all the OS predecessors there is a lot more to expect in the future.

We are currently on the precipice of AI, robotics, and blockchain and these sectors will lead us towards different dimensions of Operating Systems.

II. Comprehension Check. State whether the statements are true or false. Correct if necessary.

1. The initial version of MS-DOS included advanced features, including many taken from UNIX.

2. Steve Jobs invented the GUI (Graphical User Interface), completed with windows, icons, menus, and mouse.

3. Jobs' second project, called Lisa, was a huge success.

4. Lisa was user friendly, meaning that it was intended for users who not only knew nothing about computers but furthermore had absolutely no intention whatsoever of learning.

5. Windows NT was a complete rewrite from scratch internally.

6. Android is a Mobile OS which was based on the Linux Kernel and other Open Source software.

7. On October 22, 2009, Microsoft launched Windows NT internationally to the public.

8. Chrome OS is a free software which uses the Google Chrome web browser as it's a primary user interface (UI) and supports web applications.

III. Match the words having a similar meaning.

1. to upgrade; 2. a wide selection of; 3. crucial; 4. to coordinate; 5. to be prone to attacks; 6. security; 7. embedded; 8. modern; 9. to navigate; 10. to install; 11. compatible.

a) vulnerable to viruses; b) a wide variety of; c) the latest; d) to route; e) to update; f) consistent with another; g) essential; h) to set up; i) safety; j) to control; k) built-in.

IV. Complete the sentences by giving the opposite form of the adjective in italics.

Example: Windows OS is more secure to use than Mac OS. – Windows OS is less secure to use than Mac OS.

1. Torch browser is the least reliable to surf the Internet. 2. Apple platforms are cheaper than those of Windows. 3. Smartphones are sold at more affordable prices than 10 years ago. 4. Asus computers are far less playful, and less powerful than they used to be 3 years ago. 5. This software is the best I have ever used before. 6. Sony focuses on the worst, less coherent, the least usable features for its users.

V. Complete the gaps in this text on OS using these linking words and phrases.

Although, because, but, in addition, such as, therefore.

The user is aware of the effects of different application programs … operating systems are invisible to most users. They lie between application programs, … word processing, and the hardware. The supervisor program is the most important. It remains in memory, … it is referred to as resident. Others are called non-resident … they are loaded into memory only when needed. Operating systems manage computer resources, … the central processing unit. … , they establish a user interface, and execute and provide services for application software. … input and output operations are invoked by application programs, they are carried out by the operating system.

VI. Fill in the article and answer the questions.

1. What is the difference between application software and OS?
2. Why is the supervisor program the most important OS program?
3. What is the difference between resident and non-resident programs?
4. What are the main functions of an operating systems?

Operating Systems: hidden software

When … brand new computer comes out of … factory assembly line, it can do nothing. … hardware needs software to make it work. Are we talking about applications software such as word processing or spreadsheet software? Partly. But … applications software package does not communicate directly with the hardware. Between … application software and … hardware is … software interface - … operating system. … operating system is … set of programs that lies between applications software and … computer hardware.

… most important program in … operating system, … program that manages … operating system, is … supervisor program, most of which remains in memory and is thus referred to as resident. … supervisor controls … entire operating system and loads into … memory other operating system programs (called non-resident) from disk storage only as needed.

… operating system has three main functions.

Manage … computer's resources, such as … central processing unit, memory, disk drives, and printers; establish … user interface; execute and provide services for application software. Keep in … mind, however, that much of … operating system is hidden from … user. In particular, … first listed function, is taken care of without user being aware of … details.

Furthermore, all input and output operations, although invoked by … applications program, are actually carried out by … operating system.

VI. Give the main points of the text B. Use the following clichйs:

The text is about … . In the next paragraph … . The text elucidates … . It should be noted, that … . The text gives a good insight into … . To conclude … .

UNIT XVIII

COMPUTER VIRUSES

VOCABULARY STUDY

Nouns and noun phrases

Vulnerability – уязвимость, незащищенность; partition table – таблица разбиения дисков; decline – уменьшение; removal – удаление; header – верхний колонтитул; footer – нижний колонтитул; Multipartite virus – комбинированный вирус; registry – реестр;

Adjectives and collocations

malware program – вредоносная программа; self-replicating – самовоспроизводящийся; bootable – загрузочный; overall – итоговый; overwrite virus – вирус в режиме наложения записи; conventional – обычный; high-end software – профессиональное, высокопроизводительное ПО; unsolicited – нежелательный; non-replicating – не воспроизводящийся; legitimate – законный; remote access – удаленный доступ;

Verbs, Adverbs

Intentionally – намеренно; trigger – запускать; inject – вводить; breach – находить брешь; propagate – распространять; embed – встраивать; robust – устойчивый к сбоям; shut down – завершать работу; inherently – внутренне.

I. Match the words with the definitions below.

Malicious, malware, damage, identity, threat, to pretend, to scare, to spread, scam, to disguise, to replicate, to prevent, to encrypt, 14) firewall.

1. Physical harm that is done to an object.
2. Who you are, your name, date of birth, etc.
3. To cause great fear, frighten.
4. To make something unrecognizable by changing its appearance
5. Intended to do harm.
6. An illegal trick with the purpose of getting money from people.
7. Malicious software.

8. A computer system or program that automatically blocks an unauthorized access to a computer when it is connected to the Internet.

9. To claim that something is true, when it is not.

10. To convert data into a special code to prevent unauthorized access.

11. A danger that something unpleasant might happen to people.

12. To gradually reach a larger area or more people.

13. To stop something from happening.

14. To make an exact copy, reproduce.

II. Using a dictionary add as many words as possible into the table.

Verbs	Adjectives	Nouns
1. to boot		
2.		partition
3. to infect		
4.	restored	
5.		location
6. to encrypt		
7.		extension

III. Choose the words with similar meaning from the two groups and arrange them in pairs.

A. Partition, root, overload, encryption, remote, malware, inject, web scripting.

B. Virus, access, a code, directory, program, table, key, the network.

IV. Match the words with a similar meaning. Check any unknown words in a dictionary.

1. to delete; 2. malicious; 3. charges; 4. to replicate; 5. scam; 6. identity; 7. secure; 8. damage;

a) expenses, costs; b) to duplicate; c) harm; d) to remove; e) safe; f) harmful; g) fraud; h) personal information.

V. Match the words. Check that you know the meanings of the phrases. Then complete the sentences below.

1) commit; 2) unauthorized; 3) phishing; 4) antivirus; 5) security; 6) self-replicating; 7) built-in; 8) verify;

a) program b) firewalls c) access d) email e) information f) crimes g) software h) warning.

1. Virus is a ... that interferes with a computer's hardware or operating system. 2. Some computers come with security software. Windows 7 and Mac OS X already have ... . 3. ... can protect you from infected email attachments, Internet worms, and fake websites. 4. Cyber-criminals ... by stealing people's money or their identity data. 5. ... is disguised to look like official communications from a legitimate website. 6. Once installed, spyware programs can have ... to user's activities – such as Internet surfing habits and browser activity. 7. If you ... about your identity on a fake website, scammers can use these details to withdraw money from your bank account. 8. When you visit a malicious site your browser will display a red ... message.

VI. Translate the following sentences into English.

1. Существует ряд Интернет угроз, с которыми мы можем столкнуться в сети: кража личных данных, шпионское программное обеспечение, фальшивые антивирусы и другие вредоносные программы. 2. Хорошее антивирусное программное обеспечение должно предлагать защиту в режиме реального времени. 3. – Что может заблокировать несанкционированный доступ к компьютеру из сети? 4. Однажды установив антивирусное программное обеспечение, вам необходимо обновлять его регулярно. 5. – Я не уверен, какой антивирус подойдет для моего компьютера. Что вы можете мне посоветовать? – Попробуйте загрузить бесплатную пробную версию вот этого программного обеспечения. Оно предоставляет защиту высокого уровня без замедления работы вашего устройства. 6. – Тебе бы лучше сделать резервные копии твоих файлов в сети, другими словами, в облаке. – Какая разница? – Когда ты хранишь информацию в облаке, она сохраняется на сервере в Интернете. Ты всегда можешь иметь доступ к своим файлам, даже если компьютер поврежден. 7. Вам не следует открывать почтовые приложения, полученные от незнакомых людей или нажимать на ссылку, содержащуюся в письме. Иначе вы можете

стать жертвой кибермошенничества. 8. – Мне помочь тебе с программой по шифрованию? – Да, пожалуйста. Я не могу полностью разобраться в ней.

A. TEXT STUDY

I. Read the text and answer the following questions.

1. Why do most programs catch viruses?
2. What criteria can computer viruses be categorized according to?
3. Enlist the types of viruses and characterize them briefly.
4. What can each type of virus affect? Give examples.
5. What are the protection measures against each type of virus?
6. What are logic bombs?

Text A. Computer Viruses

A computer virus is a malware program that is written intentionally to gain access to a computer without its owner's permission. These kinds of programs are primarily written to steal or destroy computer data. Most systems catch viruses due to program bugs, the vulnerability of operating systems, and poor security practices.

There are different types of computer viruses that can be categorized according to their origin, spreading capabilities, storage location, files they infect and destructive nature. Do you know the first-ever computer virus (named Creeper) was an experimental self-replicating program written by Bob Thomas at BBN Technologies in 1971?

1. Boot Sector Virus. Boot Sector virus infects the storage device's master boot record (MBR). Any media, whether it is bootable or not can trigger this virus. These viruses inject their code to hard disk's partition table. It then gets into the main memory once the computer restarts. Booting problems, unstable system performance and inability to locate hard disk are common issues that may arise after getting infected. However, it has become rare since the decline in floppy disks. Modern operating systems come with an inbuilt boot sector safeguard. The virus can affect any file after getting into the main memory. Examples: Form, Disk Killer, Stone virus, Polyboot. B. Protection: Make sure that the disk you are using is write-protected. Do not start/restart the computer with unknown external disks connected.

2. Direct Action Virus. This virus quickly gets into the main memory, infects all programs/files/folder defined in Autoexec.bat path and then deletes itself. It can also destroy the data present in hard disk or USB attached to the computer. While these viruses are found in hard disk's root directory, they are capable of changing location on every execution. In most cases, they don't delete system files but alter the system's overall performance. It can affect all .exe and .com file extension. Example: VCL.428, created by the Virus Construction Laboratory. Protection: Use antivirus scanner. Direct action virus is easy to detect and all infected files can be restored completely.

3. Overwrite Virus. Overwrite viruses are very dangerous. They have affected a wide range of operating system including Windows, DOS, Macintosh, and Linux. They simply delete the data (partially or completely) and replace the old code with their own. They replace the file content without changing its size. It is easy to detect as the original program stops working. Once the file gets infected, it can't be restored and you will end up losing all data. It can affect any file. Examples: Grog.377, Grog.202/456, Way, Loveletter. Protection: The only way to get rid of this virus is to delete all the infected files, so it's better to keep your antivirus program updated, especially if you are using Windows.

4. Web Scripting Virus. A web scripting virus breaches web browser security and allows attackers to inject client-side scripting into the web page. They propagate quite faster than other conventional viruses. It is used to attack large sites like social networking, user review or email. It has the potential to send a large amount of spam, fraud activity, and damage files on sever. It can affect any web page by injecting hidden code in header, footer or root access file. Examples: DDos, JS.fornight. Protection: Use malicious software removal tool in Windows, disable scripts, use cookie security or install real-time protection software for the web browser.

5. Directory Virus. Directory Virus (also known as Cluster virus) infects the file by changing the DOS directory information. In this case, DOS points to the virus code rather than pointing to the original program. When you run a program, DOS first loads and executes the virus code before running the actual program code. It becomes very difficult to locate the original file after getting infected. It can affect: The entire program in the directory. Example: Dir-2. Protection: Install the antivirus to relocate the misplaced files.

6. Polymorphic Virus. The polymorphic virus encodes themselves using different encryption keys and algorithms each time they infect a program or create a copy of itself. Because of different encryption keys, it becomes very difficult for the antivirus software to find them. In other words, it is a self-encrypted virus which is designed to avoid detection by scanners. It can affect any file. Examples: Whale, Simile, SMEG engine, 1260. Protection: Install advanced, high-end antivirus software.

7. Memory Resident Virus. These viruses live in primary memory (RAM) and get activated whenever you switch on the computer. They affect all files currently running on the desktop. Basically, it allocates memory, blocks original scripts, and runs its own code when any program is executed. It can affect any file running on PC and files that are being copied or renamed. Examples: Randex, Meve, CMJ. Protection: Install strong antivirus software.

8. Macro Virus. There are a few software such as a word processor that allows a macro program to embed in documents. This virus is written in the macro language, so it may run automatically when the document is opened and it can easily spread to other files too. It depends on the application rather than the operating system. They are generally hidden in documents that are more likely shared via email. It can affect: .mdb, .PPS, .Doc, .XLs files. Examples: Bablas, Concept and Melissa virus. Protection: Disable macros and don't open emails from unknown sources. Alternatively, you can install modern antivirus software that can detect macro virus easily.

9. Companion Virus. Companion Viruses were more popular during the MS-DOS era. Unlike traditional viruses, they do not modify the existing file. It creates a copy of a file with a different extension (usually .com) which runs in parallel with the actual program. For example, if there is a file named abc.exe, this virus will create another hidden file named abc.com. And when the system calls a file 'abc', the .com (higher priority extension) runs before the .exe extension. It can perform malicious steps such as deleting the original files. Can affect: All .exe files. Examples: Stator, Terrax.1096. Protection: Can be easily detected because of the presence of additional .com file. Install reliable antivirus software and avoid downloading attachments of unsolicited emails.

10. Multipartite virus. The Multipartite virus infects and spreads in multiple ways depending on the operating system. They usually stay in

memory and infect the hard disk. Once it gets into the system, it infects all drives by altering applications' content. You will soon start noticing performance lag and low virtual memory available for user applications. It can affect: Files and boot sector. Examples: Ghostball, Invader. Protection: Clean boot sector and entire disk before reloading the data. Do not open attachments from a non-trusted internet source and install quality antivirus software.

11. FAT Virus. FAT stands for file allocation table which is a section of storage disk that is used to store information, such as the location of all files, total storage capacity, available space, used space etc. A FAT virus alters the index and makes it impossible for the computer to allocate the file. It is powerful enough to force you to format the whole disk. It can affect any file. Example: The link virus. Protection: Avoid downloading files from non-trusted sources, especially those identified as "attack site" by browser or search engine. Use robust antivirus software. Other malware that are not Virus but are equally dangerous.

12. Trojan Horse. Trojan Horse (or Trojan) is a non-replicating type of malware that looks legitimate. Users are typically tricked into loading and executing it on the system. It can destroy/modify all the files, crash the computer, modify the registry, and is strong enough to give hackers remote access to your PC. Examples: ProRat, ZeroAccess, Beast, Netbus, Zeus. Protection: Use reliable high-end antivirus software and update it regularly.

13.Computer worms. Worm is a standalone malware program that replicates itself in order to spread to other computers. It relies on networks (mostly emails) and security holes to travel from one system to another. Unlike viruses, it overloads the network by replicating or sending too much data, forcing the hosts to shut down the server. Example: Code red, ILOVEYOU, Morris, Nimda, Sober, WANK. Protection: Use antivirus and anti-spyware software.

Logic Bombs. They are not a virus but inherently malicious like worms and viruses. It is a piece of code intentionally inserted (hidden) into a software tool. This code is executed after certain criteria are met.

II. Comprehension Check. State whether the statements are true or false. Correct if necessary.

1. A malware program is written intentionally to steal money from bank account without its owner's permission.

2. Booting problems have become rare since the decline in floppy disks.

3. In most cases, boot sector viruses don't delete system files but alter the system's overall performance.

4. Once the file gets infected by overwrite viruses, it can't be restored and you will end up losing all data.

5. Logic Bombs are used to attack large sites like social networking, user review or email.

6. When you run a program, DOS first loads and executes the virus code before running the actual program code.

7. Memory resident virus is a self-encrypted virus which is designed to avoid detection by scanners.

8. Companion viruses are generally hidden in documents that are more likely shared via email.

9. Companion viruses can be easily detected because of the presence of additional .com file.

10. FAT virus stays in memory and infect the hard disk.

11. Trojan Horse can destroy/modify all the files, crash the computer, modify the registry, and is strong enough to give hackers remote access to your PC.

III. Do a brief quiz below to test your knowledge about Internet Security.

Internet Security Quiz

1. Viruses, worms, and Trojans are all examples of ...

a) pets that can be seen in a zoo.

b) phishing.

c) malware.

d) scareware.

2. What is malware?

a) Hardware that controls a computer without the user's knowledge.

b) Faulty software.

c) Hardware that detects and removes viruses from a computer.

d) Software created to cause harm to a computer system or data.

3. What is a virus?

a) A program that makes user feel unwell.

b) A program which replicates itself and spreads to other computers via attachments.

c) A program that monitors user's activities.

d) A program that stops a computer from working.

4. Malware can be downloaded through ...

a) spam emails.

b) infected computers.

c) unsafe websites.

d) all of the above.

5. What is spyware?

a) Malware that harms your computer by deleting or altering files and stopping programs from running.

b) Malware that tricks you into thinking it is software you need to buy.

c) Malware that collects information from a computer and sends it to cybercriminals.

d) Malware that pretends to be a trusted file.

6. What is the purpose of phishing?

a) Controlling computer without user's knowledge.

b) Sending a program that replicates itself and spreads to other computers via attachments.

c) Sending a malicious link disguised as a security warning.

d) Sending an email that is designed to trick the user into giving away personal information.

7. What should be used to remove malware from a computer?

a) A filter.

b) Antivirus software.

c) Encryption.

d) A firewall.

8. How can one safeguard against phishing?

a) Install a firewall.

b) Don't believe everything you read on the Net.

c) Make backup copies of your files regularly.

d) Don't follow a link from the email you don't trust.

9. What is the purpose of a firewall?

a) To detect viruses on a system and prevent them from attacking it and spreading.

b) To prevent unauthorized connections coming into and out of a network.

c) To prevent from illegal copying and distribution of copyrighted software, information, music, etc.

d) To prevent a hacker from logging on to the computer.

10. Which of the following is a simple way to stay safe online?

a) Don't open email attachments from unknown people.

b) Run and update antivirus programs.

c) Don't give out personal information.

d) All of the above.

IV. Rephrase the sentences using modal verbs.

Example: It's a good idea to back up the files. You'd better back up the files.

1. I advise you to transfer files via a secure connection. 2. Do not download unknown files. 3. Students are obliged to be on time for all their classes. 4. It isn't a good thing to open email attachments from people you don't know. 5. I advise you to turn on a firewall. 6. You don't need to contact technical support. Jim has already called them. 7. It's necessary to use mail encryption to send sensitive data. 8. It is the best thing to keep your antivirus software updated. 9. It's a good idea to set user access levels on your laptop. 10. You are not allowed to make any changes to the system. 11. Don't use a public Wi-Fi for shopping and banking. 12. It's necessary for you to create a strong password to stop criminals from accessing your private information.

V. Correct the mistakes.

1. I have e-mail some urgent letters. 2. You can't to access the network. 3. You don't must be late for the exam. 4. Sasha can't remove malware from his computer yesterday. 5. Do I could use your laptop?

B. TEXT STUDY

I. Read the text and answer the following questions.

1. Prove that Google Chrome is the most popular web browser in the world.

2. Why do you need to clear your cache?
3. What are extensions used for?
4. What are malware and adware extensions?
5. What way does a top-performing web browser benefit business?

Text B. How to Make Google Chrome Superfast

Google Chrome is the most popular web browser in the world with over 2 billion installs, 1 billion users, and 53% share of the market. Its speed is one of its most notable advantages over other existing browsers, as well as one of the reasons why it's preferred by most netizens. But even the fastest browser experiences some performance drops from time to time. If your Chrome has slowed down, here are simple hacks to get it back into tip-top shape in no time.

Clear your browsing data. Chrome stores a cached copy of a website you visit, so it can load the page faster when you visit it again. It also keeps a database of your browsing history and cookies for the same purpose. As you visit more and more websites, these pieces of data accumulate in Chrome and can slow the browser down.

Thankfully, the solution to this is easy: clear your cache. To do this, simply access your browsing history by entering chrome://history on your address bar. From the left panel, select Clear browsing data. Choose which data will be deleted by clicking on the checkboxes of all items you want to delete, like cached images or cookies. You can also select the time range that will be affected by the deletion. You can delete your history for the past hour, the last 24 hours, the last 7 days, the last 4 weeks, or from the beginning of time. Once you've selected the files you want to delete and their corresponding time range, click Clear data.

Disable extensions. Extensions are downloadable programs from the Chrome Web Store that you can add to your browser to give it more functionality and a personalized touch. For example, you can add an extension that blocks ads, one that shortens URLs, or one that shows you your most important tasks of the day. While these extensions are useful, they can slow Chrome down when there are too many installed at once.

Most extensions will show on Chrome's address bar, and you can quickly uninstall them by right-clicking on their icons and selecting Remove from Chrome. You can also manage all extensions by typing

chrome://extensions on your browser and hitting Enter. From there, you'll find a list of all the extensions you have (even those you don't remember installing). Simply scroll through the list and click Remove to delete the extensions you don't need.

Remove ads and malware. Sometimes, Chrome slows down because of malware or adware extensions. Extra toolbars, recurring pop-up ads, and web pages redirecting to other addresses are clear indications of these. Google once had a downloadable app developed for Chrome that scans and removes unwanted programs called the Clean Up Tool. In 2018, Google discontinued that app and made malware scanning even easier. Just go to chrome://settings/cleanup on your browser, and click on Find to find and remove harmful software on your computer.

A top-performing web browser benefits your business in many ways, including upping employees' productivity and speeding up communication processes. It's therefore critical that yours is fast and reliable. If your web browser is performing poorly or takes forever to load a page, don't hesitate to get in touch with us so we can identify and fix the problem right away.

II. Comprehension Check. State whether the statements are true or false. Correct if necessary.

1. Google Chrome performance is one of its most notable advantages over other existing browsers.

2. As you visit more and more websites, these pieces of data accumulate in Chrome and can accelerate the browser up.

3. Once you've selected the files you can restore the information easily.

4. Extensions are reloadable programs from the Chrome Web Store.

5. Most extensions will show on Chrome's address bar.

6. One can quickly install extensions by right-clicking on their icons and selecting Update from Chrome.

7. Chrome may slow down because of malware or adware extensions.

8. If your web browser is performing poorly, ask your provider for help.

III. Fill in many / much, a lot of / lots of / few / little / a few / a little.

Sometimes more than one option is suitable.

1. There are ... various operating systems for you to choose from.

2. There were not ... convenient means of communication 20 years ago.

3. Is there ... difference between HDMI cables and HDMI Ethernet switch?

4. There are only ... applications supported by this OS.

5. There is very ... battery charge left. Bring up the charge adapter please.

6. You had better install a good anti-virus system because there ... phishing attacks on the Internet now.

7. There is too ... free space on my memory stick to copy this software. I need to use a different one.

8. There were quite ... adequate ideas in his speech regarding our project.

9. There used to be very ... service at this company and it was very bad.

10. There are ... useful laboratories equipped with cutting-edge computing machines at the BSTU.

11. There were ... good gadgets in the shop, that quite ... customers wanted to buy.

IV. Fill in some, any, no and their compounds in the sentences. Sometimes more than one option is suitable.

1. There is ... important about our research I must tell you.

2. There is ... need to reinstall Windows, as it has a high performance.

3. Do you know if ... attends courses on programming?

4. ... special was added to a new version of this smartphone.

5. Are there ... commentaries on this application usage?

6. Can you provide users with ... more Internet security?

7. All people will benefit from ... you do at your job.

8. You can use ... authorized version of Windows, they are all quite reliable.

9. There is ... wrong with the operating system of this computer. You must repair it immediately.

10. There are not ... chances for ... hackers' attacks with this antivirus system.

11. Can you give us ... more time to finish our presentation?

V. Put the verbs in brackets in the correct (Active or Passive) form using the Present Simple or Future Simple Tense.

Google Spreadsheet (be) a free web best application similar to Microsoft itself. You (create) and (edit) spreadsheets for all kinds of projects including contact lists. To get started, the create button (click) and a spreadsheet (choose). First, we (have) a toolbar, where different shortcuts (access). The print command, undo and redo options (include) as well as the self-format and font size (control) by the user. To view even more options the menus above the toolbar (use). Thus, you (give) access to many additional features. You (navigate) back to Google drive to title up your spreadsheet so that it is easier to find a file again in the future. There (be) no save button, because Google spreadsheet (use) the auto save feature, which automatically (save) your file any time you (make) a change. Finally, you (find) a comments button and a share button. You (allow) to collaborate with other Google Drive users and you quickly (manage) your sharing options. Each spreadsheet (consist) of cells, columns and rows for your data. A cell (be) the interaction of a row and a column. There (be) also the formula bar where text, formulas and functions for a specific cell (enter). At the very bottom of the window additional sheets (add) to your spreadsheet by clicking a plus button.

VI. Speak about computer viruses and internet security measures using key words, phrases and the topic sentences.

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