Final Lexical-Grammar Test

Foreign Language (English). Master's Degree
Year I Semester I
Specialities: 1-53 80 01, 1-40 80 05, 1-40 80 04, 1-40 80 02, 1-40 80 0, 1-27 80 01, 1-25 80 04, 1-25 80 08, 1-31 80 10

Listening

I. Listen to the part of the lecture about the main steps of the scientific method. Which answer (a or b) best describes what is said? Points 3

1. The scientific method is a way ____.
   a) to ask and answer scientific questions by making observations and doing experiments;
   b) to get new ideas and find new solutions.
2. In order to be useful, a hypothesis needs to be ____.
   a) evident;
   b) testable.
3. If your conclusion did not support, or agree with, your hypothesis, ____.
   a) it doesn't mean it was a bad experiment;
   b) it means that your experiment has failed.

II. Listen to the part of the lecture once again and define the following sentences as True or False. Points 5

1. The scientific method includes 7 main steps.
2. A hypothesis is an educated guess about how something works.
3. If a hypothesis is testable, you can actually test it and see whether it is true or not.
4. When designing an experiment, you can test some things simultaneously.
5. Thanks to the scientific method, many important discoveries have been made.

III. Order the steps of the scientific method. Points 6

1-…, 2-…, 3-…, 4-…, 5-…, 6-…

a) form a hypothesis;
b) analyze your data ;
c) ask a question;
d) draw a conclusion;
e) make observations;
f) design an experiment and test that hypothesis.

The Use of English

IV. Choose the suitable preposition for each gap. Points 10

1. Science aims for measurable results ____ testing and analysis.
   a) for b) through c) during
2. It's hard to imagine peaceful coexistence of nations ____ all-round scientific and technical cooperation among the states.
   a) without b) with c) due to

3. Models involve representing real life phenomena ____ a way that makes it easier to understand or study.
   a) on b) at c) in
4. At the same time the result of any research provides the basis ____ future research activities.
   a) for b) in c) with
5. Our country has good relationship ____ research and education establishments almost all over the world.
   a) at b) with c) in
6. My colleague is interested ____ participation in this joint project.
   a) for b) in c) on
7. International contacts in science and technology are regarded ____ a means of speeding up socio-economic progress of all the countries.
   a) above b) upon c) as
8. The program employs 142 research centers and the companies ____ 26 countries in Europe.
   a) at b) for c) from
9. For the National Academy of Sciences of Belarus, innovation is ____ the top of the agenda.
   a) at b) on c) in
10. _____ great significance are international conferences and symposia.
    a) of b) from c) because

V. Match the words that are similar in meaning. Points 5

1. diverse	a) evaluate
2. enhance	b) work out
3. perceive	c) various
4. elaborate	d) increase
5. estimate	e) realize

VI. Match the words that are opposite in meaning. Points 5

1. obscure	a) individual
2. valid	b) avertible
3. mutual	c) simple
4. inevitable	d) obvious
5. sophisticated	e) incorrect

VII. Match the words with their definitions. Points 10

1. assign, *v*	a) substructure, upon or into which anything can be put
2. launch, *v*	b) to discover the fact about sth, to calculate sth exactly
3. property, *n*	c) to make over formally, appoint, ascribe
4. distinct, *adj*	d) owning, being owned; thing owned; attribute, quality
5. framework, *n*	e) profitable, advantageous, beneficial, advisable, enviable
6. contribute, *v*	f) careful to consider every part of sth to make certain it is correct
7. determine, *v*	g) to begin, start, initiate, send in motion
8. rigorous, *adj*	h) important, consequential, weighty, crucial, vital
9. desirable, *adj*	i) to give or pay jointly with others
10. significant, *adj*	j) not identical, separate, individual; different in quality/kind, unlike

VIII. Fill in the gaps with the appropriate tense forms. Points 10

1. Belarus ____ constantly innovative and scientific-technical contacts with foreign countries.
   a) will develop b) has developed c) is developing
2. Since 2010 the Academy of Sciences ____ lots of changes in the system of legislation and regulation.
   a) has made b) is making c) made
3. After we ____ the data of our research we used it in our publication.
   a) discuss b) discussed c) has discussed
4. I think I ____ this project by the end of this year.
   a) will finish b) will have finished c) will be finishing
5. The park ____ currently with the construction of a manufacturing building.
   a) expands b) has expanded c) is expanding
6. Indeed, I ____ already for several jobs this year.
   a) have applied b)applied c) apply
7. Many researchers ____ with similar problems recently, but it still remains much to do.
   a) are dealing b) dealt c) have dealt
8. Our team ____ on this problem for more than 3 years.
   a) has been working b) works c) is working
9. In future the State Committee on Science and Technology ____ national expositions at the most important international exhibitions.
   a) organizes and holds b) organized and held c) will organize and hold
10. Advancement in IT ____ the mode of international scientific cooperation.
    a) will have changed b) changed c) has changed

IX. Complete the sentences choosing from the options (a, b, c) given. Points 10

1. The Academy of Sciences of Belarus ____ in 1929.
   a) found b) was founded c) has been found
2. Nowadays much ____ in the field of education.
   a) was done b) has done c) is being done
3. All my articles ____ on the data collected from my research experiments.
   a) were based b) have been based c) are based
4. More than 40 scientific and tech programs ____ since the moment of formation the Union.
   a) have been implemented b) were implemented c) have implemented
5. Part of the scientific process concerns what you do after data ____.
   a) collected b) has been collected c) will be collected
6. After a four-year course of study at a higher educational establishment ____ I received a Bachelor's degree.
   a) was completed b) had completed c) has been completed
7. Recently much international attention ____ to this problem.
   a) has been paid b) was paid c) will be paid
8. International contacts in science and technology ____ as a means of speeding up socio-economic progress of all the countries.
   a) are regarded b) were regarded c) will be regarded
9. Some laws ____ over time after further testing found discrepancies.
   a) had been modified b) have been modified c) modified

10. UNESCO ____ by the United Nations Conference, held in November 1945 in London.
    a) established b) was established c) will be established

X. Fill in the gaps with the appropriate modal verbs. Points 10

1. Scientific development ____ become much faster due to international cooperation.
   a) may b) ought c) cannot
2. Scientists ____ to test some new hypotheses concerning the physical world to prove them.
   a) may b) can c) have
3. Mention ____ be made of this talented scientist in this field of IT and his contribution to it.
   a) should b) has to c) may
4. The objective of any research work ____ be discovering and obtaining knowledge in different fields of science.
   a) have to b) must c) can
5. Scientific cooperation among countries ____ lead to the creation of new fields of science.
   a) could b) cannot c) have to
6. Joint international research ____ provide good possibilities for cooperation and interaction at international level all over the world.
   a) can b) have to c) must
7. International information exchange ____ provide new opportunities for coordination of scientific research.
   a) should b) may c) have to
8. Such fields of science as environmental protection, space exploration and development of nuclear energy ____ be developed effectively without joint international efforts.
   a) should b) must c) cannot
9. A new generation of lasers developed by Belarusian scientists ____ be used in a wide range of industries.
   a) must b) can c) might
10. To stay current with the new technologies of the day you ____ be very ambitious and hardworking.
    a) have to b) may c) should

XI. Read the abstract and complete the gaps with the words from the box. Points 10

efficiency	mainstream	effectively	exclusionary	promote
fails	participating	enumerate	perspective	root

Scientific Research Cooperation

Scientific research cooperation has become a 1) _____ trend of social development. It can 2) _____ resource sharing, help group members complement each other's advantages, and improve scientific research 3) _____. With the deepening of scientific research cooperation, there have also been problems such as the uneven strength of partners, gender discrimination, and group 4) _____ behavior. People often explore the causes of these problems in terms of the process of scientific research cooperation but doing so 5) _____ to solve the substantive problems 6) _____. We thus seek to trace the psychology of people 7) _____ in scientific research cooperation from the perspective of evolutionary psychology so as to analyze the 8) _____ causes of scientific research

cooperation problems. Thus, first we should discuss the importance of scientific research cooperation, then 9) _____ common problems in scientific research cooperation, analyzes them from the 10) _____ of evolutionary psychology, and proposes solutions to these problems from the perspective of regulating people's psychology.

Reading

XII. Read the article and match the headlines with the appropriate passages. Points 5

1. Address differences in operation
2. Learn the language
3. Hold frequent meetings
4. The need for multidisciplinary research cooperation
5. Discuss project plans and time management

Guiding Principles for Successful Multidisciplinary Research Collaboration

A. Solving the most critically important scientific problems or engineering groundbreaking technologies often requires teams of researchers from different backgrounds to work together. A single laboratory is unlikely to have all of the expertise necessary to address complex problems that can make a significant impact on society. This has led many granting agencies, academic and commercial institutions to encourage the development of interdisciplinary teams. These aspects introduce challenges to ensuring a team is productive and moving toward their research objectives. This article specifically focuses on practical tips that are important in building strong team dynamics and ensuring that the multidisciplinary research project is conducted in an efficient and productive manner.

B. One of the biggest challenges in working together is building a communication strategy that is aligned with all researchers. Each research discipline, and often each laboratory, has a unique 'language'. Occasionally, the same terms can be defined completely differently depending on the discipline or even from one research group to another. Commonly used jargon and terms should be clearly defined and collaborators that are relatively new to your field may require more thorough explanations.

C. The way laboratories operate can differ significantly. For example, biologists, chemists and physicists tend to use the principles of 'hypothesis' to drive research projects, but many engineers do not use this research model. To address these differences, a simple communication strategy should be developed at the beginning of the collaboration. All PIs should discuss and develop useful shared reporting tools to bridge the differences between the researchers.

D. At the beginning of any collaboration, it is important to develop a project plan. Researchers should indicate the objectives of each facet of the project, the long- and short-term goals, procedures and activities, as well as who will be needed to perform each of the activities and the amount of time needed to complete different stages. This plan will identify each researcher's activities and allow subprojects to be evaluated during the course of the bigger project.

E. It is highly recommended for groups to hold routine meetings, for example, once a month. Having more eyes and ears present, particularly from different disciplines, can bring to the forefront various assumptions that are being made in planning experiments, and stimulate conversations regarding how best to establish criteria for moving forward or interpreting datasets.

XIII. Complete the ideas choosing the correct option from the two given according to the information in the article. Points 5

1. The solution to complex problems requires…
   a) dedicated work of a single professional laboratory.
   b) productive work of researchers from various spheres.
2. The language which is used in interdisciplinary teams…
   a) may differ from discipline to discipline.
   b) should be unique and different.
3. A shared communication strategy should be developed…
   a) to eliminate the gap in scientific strategies between different laboratories.
   b) to simplify the reports with objectives, procedures and experimental results.
4. Each collaborative project should…
   a) have tangible milestones and deliverables that are clearly identified and written.
   b) involve the procedures encouraging researchers to achieve long- and short-term goals.
5. Frequent meetings of multidisciplinary teams can…
   a) be of great benefit for the researchers to participate in discussions.
   b) give an opportunity for researchers to communicate their academic progress.

XIV. Choose the summary which renders the main idea of the article best. Points 6

a) The value of a collaborative project extends to training highly qualified personnel and expanding the breadth of knowledge of even the most seasoned expert involved, which can spill over and enhance other research endeavors underway or in the future.

b) The benefits of collaboration are vast. Some will be obvious from the onset of the project, while others may go unrealized until months and years later. Like many undertakings with great potential, collaboration in science can be one of high risk in addition to high reward.

c) In collaboration, the researchers should work in synergy, complementing one another to form the essential toolset necessary to achieve the end goal. The merging of diverse fields can yield breakthroughs at a speed unachievable if those contributors were to work independently.