XXXIX Lomonosov Tournament, September 25, 2016

## History Competition

All competition tasks are for schoolchildren of any age: everyone can pick and choose what they like or know. It is enough to give a correct (and not necessarily complete) answer to any 2 of the first 8 questions or mention at least 10 historic mistakes in the task 9 or 10.

1. People say that in ancient Egypt there was an equivalent of the Silk Road. What was its route? What important goods were traveling down this road in both directions? When did it start to be used, how can the time be verified? Is this road mentioned in the novels of Ivan Efremov?
2. One historical novel is named in a strange way: $<4-20-$ $13 »$. Why is it so? What epoch is represented in the novel? Where does the action take place? What famous personalities act in the novel or at least are mentioned in it?
3. In 1382 Khan Tokhtamysh burned Moscow down. In 1392 the same Khan allowed Prince of Moscow to annex Nizhny Novgorod to his lands. Why did such a policy change occur?
4. In the summer of 1916, Southwestern Front had a brilliant offensive operation and inflicted a serious defeat of the AustroHungarian units. Name at least three Russian generals who took part in this attack. How did the things work out for them after the revolution of 1917? When and in what countries did they die?
5. It is well known that the Islamic world had long prospered one day with several Caliphs, the other day without any Caliph, but then the Caliph appeared again. Who, when and why branched or interrupted the tradition of the Caliphate? When and who restored it? Is it true that the Restorer was not a relative to the Prophet but he acted according to the law?
6. Year 1816 was marked by a global environmental catastrophe. What were its causes and consequences in different regions? Did such disasters happen in more ancient times? If so, when and where?
7. Kapitza, Keldysh, Kolmogorov, Korolev, Kurchatov. Some of these academics were captured together in an amateur photo. Where and when was it made? Guess the time with a margin of error of no more than 2 years, and the place with a margin of error of no more than 5 km . Why were not all five academics present in the snapshot?
8. Build a short chain of mutual friends between Lomonosov and Faraday. Try not to include in this chain any rulers incompetent in sciences. For each pair of neighbours in the chain specify the time and the place of their personal contact.
9. Locate the historical errors in the text. Make a list of events (facts) that actually took place in OTHER time, place or in the way that is different from what is written in the text, and explain how and where they took place and who was involved (or why they cannot have happened at all).

## 9 CENTURIES AGO

(text with mistakes; year 1116)
Prince Vladimir Svyatoslavich the Grim Eyes hosted unexpected ambassadors from Kiev in the tenth year of his governorship in his hometown Chernihiv. Who sent them? Hardly uncle Vyacheslav the Big Nest himself! The uncle would have sent some old boyars, who served the Wise Yaroslav, to his nephew. Now come some young boyars who speak evasively. They ask hintingly: isn't it high time the young Prince Vladimir to acceed to the throne where his father, grandfather and great grandfather had sat? Say, we must protect the throne from outlanders... Which ones?

Vladimir drove the nomads - the Pechenegs and the Kalmucks - take the throne of Rus' because of the seniority formula in the royal to the mountains of Caucasus or towards the Volga River a long time ago. Then allied Cumans settled with the landlord of Chernihiv: the khans Atrok, Kobyak and Kotyan's daughters became wives of Vladimir's sons. The Caesar of romans - Michael Palaiologos - got stuck in the war with Franks and Saracens; he is too busy to be involved into Russian affairs. On the contrary, he calls Vladimir to start a war with the Turks. But the Prince declined politely: why should Russian soldiers die in the Holy Land? After all, nobody promised to grant the bliss of afterlife for that! Pope Gregory had started a campaign against Jerusalem and sank into the mire of it: let him manage the campaign on his own!

However, the young kievans are quite persistent. They explicitly call Vladimir to occupy the throne while Prince Svyatoslav is still alive. Why don't they love their duke, a son-in-law of the Emperor of the Germans? Boyar Kuchko honestly answered Vladimir's straightforward question: because of the dominance of the Germans in the capital of Rus'! We would be happy to host architects and fur traders from the West. On the contrary, sly German moneylenders with full bags of silver come. They lend the money to Prince, the boyars and the common people under extortionate interest! So many owners have lost their houses and become disempowered zakups on their dear land!

The common folk is embittered by the germans, boyars and Prince Vyacheslav. If we don't hold a tough reform, forgiving the depts of all citizens immediately, a bloody riot will happen. Not only the Germans will be killed, but also the boyars' houses will be robbed as it was half a century ago, - after the death of Yaroslav the Wise. Prince Vladimir: you are responsible for the whole Rus' to the God! Come and save your father's house!

Vladimir thought hard. There won't be another opportunity to family. If after taking the throne in Kiev, he drives the German moneylenders away from Russia, who will take their place? The Greeks, the Jews, the Genoese, the Armenians? We will have to watch their foul play and cooperate with the sovereigns of the neighboring countries. These are the Khagan of the Khazars on the river Volga; the Consul of the romans in Sevastopol; the Archont David - the Georgian tzar in the Caucasus; and even the German Caesar in Cologne. Can common struggle against the untamable moneylenders reconcile the interests of these sovereigns? It is not quite clear. However, it is worth trying, now of all times, when the uniting of Rus' into a monarchy has not only military but also financial reason.
10. Locate the historical errors in the text. You need to make a list of events (facts) that actually took place in other time, place or in the way that is different from what is written in the text, and explain how and where they took place and who was involved (or why they cannot have happened at all).

## A CENTURY AGO

(a text with mistakes, year 1916).
Karl Schwarzschild, an astronomer from Göttingen, is overjoyed. Today he has excelled two geniuses - Einstein and Rutherford in understanding the physics of stars! In Oxford great Rutherford has invented his model of the atom in analogy with the solar system. In such an atom electrons are similar to planets; but what does the intra-atomic Sun consist of?

Einstein in Geneve expanded the hypothesis of Australian Rutherford: apart from well-known protons there must be neutrons in the atomic nucleus! They jump between protons sticking them together into a solid nucleus - just as photons jump between electrons in Rutherford's atom! All these physical hypotheses are
correct; however, they did not permit neither Rutherford, nor Einstein calculate the radius of an atomic nucleus.

Now the dashing Bavarian Schwarzschild knows how to do it, having reconsidered an old calculation made by Laplace on the radius of a black hole. If a massive star goes out after exhausting its hydrogen and oxygen fuel, its cold body will shrink so that all electrons press inside the nuclei of their atoms! In such case, the protons will merge with the electrons forming new neutrons so that a former bright star will become a black hole composed of neutrons and emitting nothing but gravity waves.

But astronomers have recently noticed such a black hole near Canicula! This had been done by a young American Edwin Hubble before the war. He discerned in the motion of bright Canicula such wiggling that can be caused only by the gravitation of an invisible but massive neighbour. It is clear that it is a black hole - accidentally predicted by Laplace who used the escape velocity of massive electrons or massless photons.

Eh, if only Rutherford or one of his students managed to build a telescope that can catch the gravitation waves - the same way as an ordinary telescope detects light or radio waves! Let's wait until physicists-engineers build such a miracle... And let the theoretical physicists from Niels Bohr team calculate in detail the crystallization of protons, electrons and neutrons into a black hole of varying mass. How big can it be?

For example, equivalent to the weight of the Sun? Or the Earth? Or the most massive atom - totally different from the ones observed by physicists and chemists in nature? Physicist Schwarzschild wants so much to survive into the peaceful time when all these mysteries will be solved and understood!

Alas, cylinders filled with mustard gas are already delivered to the battle line on the river Somme. Soon German scientist Karl

Schwarzschild and English scientist Henry Moseley will perish in a gas attack before getting their Nobel laurels. Instead, at the end of the war German chemist Fritz Haber - the inventor of mustard and choking gases - will receive the Nobel prize; he will be the first war criminal among the savants of the 20th century. However, Haber will also be punished by the Destiny, with the help of postwar Nazis who will implant an unnatural selection of best opportunists on racial backgrounds even among the scientists.

Don't forget to sign your work (please, write the card number, your last name, school and grade) before submitting the work. You do not have to submit the sheet with the tasks. The tasks, their solutions and the results of the competition will be published at http://turlom.olimpiada.ru after November $2 \mathbf{0}^{\boldsymbol{t h}}$.

