

Шифр:

**ПИСЬМЕННАЯ РАБОТА УЧАСТНИКА
ОЛИМПИАДЫ ШКОЛЬНИКОВ СПбГУ
2017–2018
отборочный этап**

Предмет (комплекс предметов) Олимпиады **СОВРЕМЕННЫЙ МЕНЕДЖЕР**

Город, в котором проводится Олимпиада _____

Дата _____

Вариант 1

Математика (Современный менеджер)

Первые 6 задач оцениваются в 3 балла каждая. Остальные по 4 балла.

Часть 1. В задачах 1 – 4 Вам следует обвести в соответствующей графе правильный ответ. (Если Вы случайно выделили не ту клетку, то обведите нужный ответ и напишите его еще раз на полях.)

Задачи		Ответы			
1.	Школьник налил кружку молока (300мл), выпил треть, затем добавил кофе и выпил полкружки. Сколько молока выпил школьник?	100	150	200	300
2.	Из трех чисел первое на 20% больше второго и на 40% меньше третьего. На сколько процентов второе меньше третьего?	40	50	60	80
3.	Сумма квадратов корней уравнения $x^3 - 6x + 5 = 0$ равна:	5	6	12	19
4.	Наименьшее количество совпадений минутной и часовой стрелок за четырехчасовой промежуток времени равно:	1	2	3	4

Часть 2. В задачах 5 – 8 следует записать ответ справа от условия задачи (в пустой графе)

5.	При каких значениях параметра a система $ x + y = 2a^2$, $x^2 + y^2 = 2a(x + y)$ имеет решение?	
6.	Каждая из трех окружностей единичного радиуса проходит через центры других. Какова площадь их общей части?	
7.	Решите неравенство $(6x - 13)\sqrt{x - 1} \geq 6(x - 2)\sqrt{x - 2}$.	
8.	Окружность касается одной из сторон угла в 30° и пересекает другую сторону в точках, отстоящих от вершины угла на расстояние 2 и 8. Найдите радиус окружности.	

Часть 3. В задачах 9 – 10 следует справа в соответствующей графе написать ответ, однако дополнительно к этому следует кратко записать решение

9.	В кубе $ABCD A' B' C' D'$ через вершину A' и середины ребер AB и $B' C'$ проходит плоскость. В каком отношении она делит объем куба?	
10.	Найдите наибольшее значение функции $y = \sqrt{\frac{1}{\sin^2 x} - \sin x} + \sqrt{\sin x - \operatorname{ctg}^2 x}$	

Математика, решения заданий 9 и 10:

VOCABULARY AND GRAMMAR

1. Choose the word in bold which completes each sentence correctly.

1. On the first day of our holiday we just **enjoyed/calmed/comforted/relaxed** by the pool.
2. After leaving university I decided to **devote/take/assign/employ** myself to a career in music.
3. If you need anything during the exam, you should ask one of the **invigilators/surveyors/observers/superintendents**.
4. Situated on the river Guadalquivir, Seville **discovers/explores/offers/involves** the best of Andalusian culture.
5. I fell over while skiing and my sister had to **bring/take/fetch/carry** a doctor.
6. Before we choose a dress for you, let's **look into/look through/look up/look around** all the shops.
7. There was a wonderful smell of **cooking/roasting/baking/grilling** bread in the kitchen.
8. The shop opposite my house sells a variety of **objects/purchases/goods/productions**.
9. The average **viewer/audience/spectator/observer** watches television for about 15 hours a week.
10. Most schools in my country no longer have **corporal/capital/physical/bodily** punishment.
11. The children enjoyed rolling down the grassy **mountain/cliff/slope/stone**.
12. The view from the skyscraper **shows up/sees about/stands up/looks out** over New York harbour.

2. Choose the one underlined word or phrase (A, B, C, or D) that must be changed for the sentence to be correct.

13. (A) A no-smoking program has (B) help overweight people (C) reduce their risk of heart attacks or their (D) need for surgery by 63 percent.
14. It was (A) so nice day (B) that they (C) decided to have a picnic (D) in the field.
15. (A) I've gone to Marbella. I (B) remember it well. A (C) busy town with a (D) nice modern promenade and picturesque 'piazza'.
16. I would like to (A) congratulate you on how well you have (B) taken care of all the matters (C) related on the (D) reorganization of your department.
17. This floor (A) doesn't need (B) no more wax; (C) there's plenty (D) already.

3. Decide which answer (A, B, C or D) best fits each space.

18. I can't help _____ that we made the wrong decision.
A to think
B think
C thinking
D thought
19. The population of the earth is increasing at a tremendous rate and _____ out of control.
A they have become
B are soon going to be
C why it will be
D soon will be
20. _____ discussed by the board of directors when it was proposed again by the supervisors.
A The problem had already been
B The problem had already
C The problem is already
D The problem has already

21. _____ in Stevenson's landscapes, the more vitality and character the paintings seem to possess.
- A The brushwork is loose
 - B The looser brushwork
 - C The loose brushwork is
 - D The looser the brushwork is
22. The fire _____ to have started in the furnace under the house.
- A is believed
 - B that is believed
 - C they believe
 - D that they believe

Reading

TEXT I

Read the passage below and choose the correct answer, (A), (B), (C) or (D).

Adobe Systems is a software company which survived the dot-com crash of the late 90s. As Bruce Chizen, its CEO, recalls, 'By that time, we had already refocused our business. Our strategy had several elements. First, we said we were going to focus our key markets. In other words, we were going to concentrate on creative professionals and people who really cared about the quality of the information they communicated.' They also decided to focus on documents and to streamline the company.

'Our mission hasn't changed,' he adds, 'It's always been about developing, designing, marketing, selling software to help people to communicate better. But being able to stay with what we do well – and then growing the number of our constituents (people who use our programmes) – was a major transformation for the company.'

'The biggest growth opportunity for Adobe is around documents. On the desktop, our approach has been to use Acrobat. To date, we've only sold about 14 million new units of Acrobat. According to Microsoft, there are at least 200 million knowledge workers who have Microsoft Office. We believe at least 60 million of them want to send reliable documents – either through email, or on the web, or through networks. We think Acrobat is a great solution for that'

The company has gone through various transformations. One involved changing the way they did business. The second involved focusing on new products. And the third involved moving toward new customer bases, especially business clients.

But, as Chizen recognises, the key to successful change is the people working for the company. 'Employment was easy and attractive, so someone who left Adobe could get a job somewhere else with relatively little risk and a great deal of upside. In fact, back then, 20% of the people in the company were leaving on an annual basis, which is a lot. So the people who chose to stay really saw the potential in this company. And because we had committed employees, the motivation to change was there.'

23. How did Adobe survive the dot-com crash?
- A They changed before it happened.
 - B They changed their markets.
 - C They took on new staff.
 - D They reduced the size of the company.
24. According to paragraph 2, what is Adobe's main objective?
- A To become the world's largest software company.
 - B To become a telecommunications company.
 - C To make products which improve how people exchange information.
 - D To diversify their product range.
25. What represents Adobe's main business opportunity?
- A A new operating system.
 - B A word-processing program.

- C A program for producing web pages.
- D A program for transmitting documents.

26. Why did employees stay with Adobe?

- A They were afraid of being unemployed.
- B They thought the company had a good future.
- C They enjoyed working for Adobe.
- D They did not want to change their lifestyles.

TEXT II

Read the article below about a shop that doesn't provide packaging. Choose the best sentence to fill each of the gaps. For each gap 27–32, mark one letter (A–G). Do not use any letter more than once.

If you ever catch yourself looking at the kitchen bin guiltily, with its huge pile of plastic packets, cardboard containers and wrappers, you might be interested to know there's a whole movement that aims to go one better than even recycling: precycling, or cutting out packaging in the first place.

Among those at the forefront of this consumer revolution is *Unpackaged*, a first-of-its-kind shop that avoids all packaging and invites you to provide your own containers to stock up on essentials such as flour, cereals, nuts, pasta, rice and lentils. (27) _____ Simply weigh your container when you arrive so it can be deducted from the overall weight and then get filling. Not only will you save money, but by foregoing packaging you'll reduce the amount of material waste being either sent to landfills or incinerated.

In its large store in Hackney, East London, *Unpackaged* offers a wide range of products, as well as a bar and cafe, run by Kate de Syllas, a well-known local chef. (28) _____ She started out doing market stalls specializing in eco products and a small range of wholefoods and nuts. 'I wanted to see how people reacted. Would they bring their own containers and refill?' Conway says. 'It did really well and we ended up with two market stalls, but it was a bit impractical lugging all the stuff around.'

The company has a clear philosophy that includes sourcing organic, fair-trade products where possible, supporting artisan local producers and applying the principles of 'reduce, reuse, recycle' to all parts of its operation. (29) _____ As well as using unsold produce in the cafe, it uses black tiles with erasable white wax pencils instead of printing off labels for products.

It even has a solution for that most eco-unfriendly product, the takeaway paper coffee cup, with its 'The 1000 Cup Countdown' scheme. *Unpackaged* has promised to provide 1000 biodegradable cups, each of which comes complete with an RFID (radio frequency identification) tag that will tell you more about the company's aims and if returned, will earn you a free coffee. (30) _____

'We want to be the local store,' Conway says. 'We want them to come here rather than go to a supermarket.' (31) _____ But at the moment *Unpackaged* finds its dedicated customers are travelling from all over. 'They're coming for the atmosphere as much as what we're trying to do.'

(32) _____ 'The whole point is to take people on a journey with you,' Conway says. 'If someone comes in and they're not green and they don't have any containers, I don't want to say that I won't serve them, because they go away with such an awful view of what we do. Whereas if we say that this time we'll provide them with a small paper bag and next time they can bring their own, then it takes them two or three goes and they'll end up bringing their own.'

- (A) This commitment to reducing waste and packaging is present in every aspect of the store.
- (B) With the larger space it can now offer a greater range of products.
- (C) When it runs out of them, customers will provide their own takeaway mug or sit in for their morning cappuccino.
- (D) But what if someone new to the values of the store wanders in looking for some pasta?
- (E) Bring bottles for oils, apple juice, wine and even gin.
- (F) She hopes to spend more time developing an own line of *Unpackaged* products and she also hopes to set up other branches around London.
- (G) It was founded by Catherine Conway, who got the idea while pouring rice from a plastic packet into a jar at home.

TEXT III

You are going to read an article about the transition to university life. Choose the most suitable heading from the list A-H for each part (33-39) of the article. There is one extra heading which you do not need to use.

- | | |
|------------------------------------|------------------------------|
| A A brief overview of the semester | E Your faculty |
| B Student learning support centres | F Unit outlines |
| C Lectures, tutorials and seminars | G Your first weeks on campus |
| D Study plans and timetables | H The library |

Making the Transition to University Studies

33

It is important that you find ways to help yourself survive – and indeed thrive – as a tertiary student. Plenty of research has shown that the best way to have a valuable and enjoyable learning experience is to become familiar with the essential aspects of academic life. Our students find the following advice useful.

34

Become familiar with your faculty. Where is the main office for your faculty or department? Where are your lecturers' and tutors' offices and pigeonholes? Where should you hand in your assignments? Does your faculty have a special first-year coordinator? Who is it, and how do you contact this person? Does your faculty have a special place for first-year students? You should get to know this information as soon as possible. Even if you have been at university for a few months, don't be afraid to go and discover some basic details about your faculty. After all, you're likely to stay in the same area for at least three years.

35

Don't underestimate the importance of the university library to your success as a student. Although you may currently feel more comfortable conducting your research through the Internet, you must start becoming familiar with the library as early as you can. You will need to use more than just online resources at university, with lecturers expecting you to use a range of sources. Librarians are aware of the most recent technology and research tools, making them a valuable resource.

36

Every campus has a place for students to get free support for their studies, such as one-on-one help with study problems and seminars on subjects such as study techniques and writing and note-making skills. Take up these opportunities and use whatever facilities are available to you. Advice and self-paced tutorials are often available online, so it's worth having a look around your university's main website to see what is on offer at your campus. If you're having problems, especially in areas such as organising your life or writing your assignments, go and ask for help. It is there!

37

Read your unit descriptions as soon as you receive them. They contain essential information about the unit. Usually your lecturers will give you instructions specific to their units but, because you will hear so much information during the first couple of weeks, you may forget what they have said. Therefore, make time to read every document carefully as your success may depend on it.

38

Don't be fooled if you have very few compulsory contact hours. Create a study schedule as soon as possible. You should make a weekly one, and then use a diary or wall planner to make a whole-semester study timetable. Place all your deadlines on this semester study schedule, as well as weekly times to review lecture notes and complete required and recommended readings.

39

Although all institutions and courses vary in how and when they conduct their first year, they all go through similar processes. Here is a summary of what is likely to happen in your first semester.

- Orientation Week
- early weeks of semester
- tuition-free weeks and mid-semester breaks
- later weeks of semester
- study break.

Обществознание (Современный менеджер)

1. Установите соответствие между видами налогов и их конкретными примерами: к каждой позиции, указанной в первом столбце, подберите соответствующую позицию из второго столбца.

Примеры налогов	Виды налогов
А) подоходный налог Б) налог с продаж В) акцизный сбор Г) налог на наследство Д) налог на имущество	1. прямой налог 2. косвенный налог

Запишите в таблицу выбранные цифры под соответствующими буквами

А	Б	В	Г	Д

2. Экономические институты:
- а) регулируют производство товаров и услуг;
 - б) регулируют общественные отношения, используя властные полномочия;
 - в) регулируют распределение социальных позиций и общественных ресурсов;
 - г) регулируют преемственность культурной жизни общества.
3. В зависимости от содержания труд подразделяется на:
- а) производительный и непроизводительный;
 - б) стационарный и передвижной;
 - в) простой и сложный;
 - г) частный и общественный.
4. Предприятие Z, специализирующееся на оказании мелких бытовых услуг, объединяет 10 человек, каждый из которых лично трудится на этом предприятии и независимо от размера внесённого пая имеет один голос при решении вопросов, связанных с экономической деятельностью предприятия. Какова организационно-правовая форма этого предприятия?
- а) унитарное предприятие
 - б) производственный кооператив
 - в) хозяйственное товарищество
 - г) хозяйственное общество
5. Какая черта присуща пропорциональной избирательной системе?
- а) голосование граждан по партийным спискам
 - б) самовыдвижение кандидатов
 - в) создание нескольких избирательных округов
 - г) деятельность центрального избирательного комитета
6. Экономическое развитие страны определяется
- а) ее бюджетом
 - б) ВВП
 - в) расходами на образования
 - г) количеством предприятий
7. Найдите в приведенном ниже списке общественные явления. Укажите варианты ответа, под которыми они указаны.
- а) возникновение государства
 - б) генетическая предрасположенность к отдельным заболеваниям
 - в) проявления наследственности
 - г) формирование наций
8. В обществе с рыночной экономикой государство воздействует на экономическую жизнь через
- а) систему налогообложения
 - б) централизованное установление цен
 - в) директивное планирование производства
 - г) снабжение населения товарами