

ЧАСТЬ 4. ДЕЛОВАЯ ИГРА (СОВРЕМЕННЫЙ МЕНЕДЖЕР)

Номер участника:

1414

САНКТ-ПЕТЕРБУРГСКИЙ ГОСУДАРСТВЕННЫЙ УНИВЕРСИТЕТ

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ПИСЬМЕННАЯ РАБОТА УЧАСТНИКА
ОЛИМПИАДЫ ШКОЛЬНИКОВ СПбГУ
2019–2020

заключительный этап

Предмет (комплекс предметов) Олимпиады

СОВРЕМЕННЫЙ МЕНЕДЖЕР

Город, в котором проводится Санкт-Петербург

Дата 14.03.2020

ВАРИАНТ 1

ЧАСТЬ 1. АНГЛИЙСКИЙ ЯЗЫК (СОВРЕМЕННЫЙ МЕНЕДЖЕР)

TASK 1

Read the passage below about leadership and choose the correct answer, (A), (B), (C) or (D) for each question (1-5).

First time leader

Taking on a leadership role for the first time is tough. There is always pressure on you to do the right things, and to be seen to be doing them. But, unless there's something that needs sorting out urgently, your first few months in the role will be better spent in understanding the people and the situation. One easy mistake to make is to think that you, as leader, the top person with the top salary, have the sole responsibility and the know-how to solve every single problem yourself. And you can be sure that others will encourage you to think that way, **since it takes the pressure off them**, and it satisfies their natural urge to leave the solving of problems to others. Instead try using existing resources to identify the current position and the ways to change it for the better.

Start by consulting widely, beginning with the people who now report to you direct, as these are most likely to be the people with the expertise and experience to tackle some of the problems that are identified. A series of one-to-one meetings, though time-consuming, will be worthwhile, especially if they are structured to provide you with the information you need to make decisions later on. Two useful questions are: 'What do you see as the biggest problem facing the department now?' and 'What one change would make the most difference to our success?' From their answers you can build up a picture of your people, as well as of the issues. Some will consider the needs of the department as a whole, while others may just concentrate on their own particular concerns. You will also have had personal contact with each person and can judge who you will work well with in the future.

Overlap in their responses is a useful pointer to the priorities needing your attention. If there is no duplication in problems or solutions, it means that you have inherited a disunited group which will need some team-building and restructuring. If no clear picture emerges, it means that your people are part of the problem: you will need to make them aware of this.

At the same time, consult with customers. Be open to criticism and to praise. Compare the views of your department with this external viewpoint and see where the biggest gaps are. This will help to identify areas for action.

While you are data-gathering, have a look at the figures. Apply different measures from the standard ones. You probably lack knowledge about which company products are profitable, and you recognize that staff costs are a key factor. So, ask for an analysis of profitability per employee. There will be some grumbling that the new figures involve extra work, but the analysis will reveal how many and what kind of staff your company really needs.

Finally, a key issue for you as a new leader is to establish priorities. If you have done your research well, you will have identified a number of areas for action. Bring your senior team together and tell them about your research findings, both the problems and the suggested solutions.

Together, plot the solutions on a big graph, with one axis relating to the amount of difference the action would make; and the other axis to the ease of implementation. This will prompt useful discussion on the issues and the means of resolving them. In selecting priorities, you might well gain volunteers to tackle some of the tasks.

Agree actions, assign responsibilities and establish dates for completion and progress reviews.

1. How should you structure your first meetings according to the writer?
 - A Explain to each member of staff the problems facing his or her department.
 - ☒ B See people individually and ask each one the same questions.
 - C Ask each member of staff to help in setting priorities for action.
 - D Bring everyone into the discussion to get an agreed plan of action.
2. Getting the same answers from different people during your research tells you that
 - A the people who are under you clearly do not work well together.
 - B a lot of your department's problems are caused by the people themselves.
 - C you have identified the most urgent issues needing your attention.
 - ☒ D your department is working well despite a number of problems.
3. It is useful to talk to customers about the performance of your department because
 - A they are likely to be more honest and open than your own staff.
 - B it makes your customers feel that their opinions are important to you.
 - C it gives you an opportunity to criticize or praise them.
 - ☒ D you can evaluate what they say against what your own staff told you.
4. What might you learn from the kind of financial analysis that the writer recommends?
 - ☒ A that you need to employ fewer people, or people with different skills
 - B that you can increase profitability by using different measures
 - C that this kind of financial analysis involves a lot of extra work
 - D that financial data must be combined with other information to give a full picture
5. According to the writer, using a graph as part of the meeting with senior staff is a good way to
 - A set deadlines for completing the work and reporting back.
 - B give feedback to your staff on the results of your research.
 - ☒ C get your staff talking about the issues and what to do about them.
 - D show which members of staff should tackle the various problems.

TASK 2

Explain the meaning of the phrase "since it takes the pressure off them" from the text in about 20-50 words.

This phrase describes the situation when the staff can get rid of their problems and the necessity of solving them, because the another person can do it instead them. In other words, leaving problems to another person.

ЧАСТЬ 3. ТЕСТИРОВАНИЕ (СОВРЕМЕННЫЙ МЕНЕДЖЕР)

БЛАНК ОТВЕТОВ

ЗАДАНИЕ 1

№	ОТВЕТ
1.	4
2.	9
3.	5
4.	9
5.	10
6.	7
7.	10
8.	5
9.	5
10.	9
11.	7
12.	5
13.	8
14.	7
15.	5

ЗАДАНИЕ 2

№	ОТВЕТ
1.	27
2.	26
3.	25
4.	16
5.	62
6.	23
7.	51
8.	7
9.	8
10.	12
11.	2
12.	13
13.	42
14.	9
15.	13
16.	21
17.	15
18.	17
19.	63
20.	14
21.	24
22.	3
23.	11
24.	7
25.	36
26.	24
27.	18
28.	64
29.	37
30.	49
31.	256
32.	4
33.	5
34.	2
35.	4

ЗАДАНИЕ 3

Блок №1	
№	ОТВЕТ
1.	0
2.	2
3.	1
4.	3
5.	2
6.	3
7.	3
8.	2
9.	3
10.	3

Блок №2	
№	ОТВЕТ
1.	2
2.	2
3.	3
4.	1
5.	2
6.	3
7.	2
8.	2
9.	3
10.	2

son makes their lives easier and more comfortable.

TASK 3

Write your answer to the question below in **100-150 words** in an appropriate style. Use your own words as far as possible. Make sure your answer is well-structured, argumentative and logical.

Which piece of advice about first time leadership, given by the author, is the most valuable? Why?

In this article the author gives several pieces of advice. In my opinion, the most valuable of them is to ask the staff the same questions during the series of one-to-one meetings. There are some reasons for my point of view. Firstly, this structure of first meetings is the most important step in the process of solving problems, because it helps to determine them exactly. By comparing answers you were given you can identify strong and weak points of the department and, therefore, understand what you should do to increase its efficiency. It would be harder to do without this step. Secondly, this form of communication provides you an opportunity to learn your staff. The way of answering can describe person's character and abilities. Knowing this information about each member of the staff will help you to organize their work effectively.

To sum up, this piece of advice is actually the most valuable, because it helps to make further work easier and more effective.

ЧАСТЬ 2. МАТЕМАТИКА (СОВРЕМЕННЫЙ МЕНЕДЖЕР)

ЗАДАНИЕ 1

Банк «Стабильность» предлагает клиентам открыть вклад на 3 года с постоянной процентной ставкой $r\%$. В банке «Рост» клиентам открывают вклад на 3 года, процентная ставка увеличивается ежегодно на одну и ту же величину, причем во второй год она равна $r\%$.

Какой банк следует выбрать вкладчику для получения наибольшего дохода, если

- А) для вкладов не предусмотрена капитализация процентов;
- Б) для вкладов предусмотрена капитализация процентов.

ЗАДАНИЕ 2

Компания Space Explorer отправляет миссию на планету X-Mars для добычи 5000 X-Diamond и 10000 X-Emerald. Эти драгоценные камни добывают роботы двух разных типов, причем робот первого типа для добычи одного камня X-Diamond тратит 4 планетарных часа, а робот второго типа справляется с добычей одного камня X-Emerald за 1 планетарный час. Компания может доставить на X-Mars всего 120 роботов.

- А) Найдите наименьшую возможную продолжительность миссии (в планетарных часах), если роботы обоих типов приступают к работе одновременно и действуют независимо друг от друга.
- Б) Найдите наименьшую возможную продолжительность миссии (в планетарных часах), если роботы второго типа приступают к работе только после полного окончания работ роботов первого типа.
- В) Найдите наименьшую возможную продолжительность миссии, если роботы первого типа могут работать только планетарной ночью, а роботы второго типа – только днем. На X-Mars продолжительность дня и ночи одинакова и равна 8 планетарных часов.

1 А) S - сумма, положенная в банк. Тогда в банке «Стабильность» через три года она будет равна: $S + 0,01rS = S(1 + 0,01r)$
 В банке «Рост»: $S + (r-x)0,01S + r \cdot 0,01S + (r+x) \cdot 0,01S$, где x - число, на которое увеличился процент, причем $x < r$, т.к. $r-x$ не может быть ≤ 0 . Тогда сумма равна:
 $S(1 + 0,01(r-x+r+x)) = S(1 + 0,01 \cdot 3r) = S(1 + 0,03r)$
 Таким образом, в обоих банках через 3 года сумма будет одинаковой:
 $S(1 + 0,03r)$ (при отсутств. капитализации).
 Б) Используем те же введенные обозначения. Тогда в банке «Стабильность» сумма через 3 года равна: $S(1 + 0,01r)^3$
 В банке «Рост» через 1 год: $S(1 + 0,01(r-x))$; через 2 года: $(1 + 0,01r)S(1 + 0,01(r-x))$;
 через 3 года: $(1 + 0,01(r+x))(1 + 0,01r)S(1 + 0,01(r-x)) \geq S((1 + 0,01r) + 0,01x)(1 + 0,01r)(1 + 0,01r - 0,01x) =$
 $= S(1 + 0,01r)((1 + 0,01r)^2 - (0,01x)^2) = S(1 + 0,01r)^3 - (1 + 0,01r)(0,01x)^2$. Таким образом, т.к. все числа S, r, x больше нуля, то $S(1 + 0,01r)^3 > S(1 + 0,01r)^3 - (1 + 0,01r)(0,01x)^2 \Rightarrow$
 сумма в банке «Стабильность» больше.
 Ответ А) вкладчик в обоих банках одинаково выигрывает. Б) выигрывает вкладчик банка «Стабильность», вкладчику стоит выбрать его.

Математика (страница для решений):

