Sample questions

Economics Module

The Economics Module is divided in two different subtests. You have a total of 150 minutes to solve the tasks. In the table below you can see how many tasks there are in each subtest and how much time is allowed.

To prepare for this, there are six tasks to solve for each subtest on the following pages. The tasks at the beginning are easier than those at the end. At the beginning of each subtest there is a short explanation about the type of the tasks, together with instructions on how to solve the tasks.

You can find the solutions starting at page 53.

<table>
<thead>
<tr>
<th>Subtest</th>
<th>Amount of tasks</th>
<th>Time allowed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analysing Economic Interrelationships</td>
<td>22</td>
<td>65 minutes</td>
</tr>
<tr>
<td>Analysing Processes</td>
<td>22</td>
<td>85 minutes</td>
</tr>
<tr>
<td><strong>Total working time</strong></td>
<td></td>
<td><strong>150 minutes</strong></td>
</tr>
</tbody>
</table>
In the subtest “Analysing Economic Interrelationships”, you are to analyse and interpret economic diagrams, charts and tables. This test measures mainly your ability to differentiate between relevant and unimportant data and to draw the correct conclusion from the information given. Background information will be provided if necessary.

22 questions in the test, working time 65 minutes

Instructions
Please read the instructions before you start with the examples.

In the following items, economic interrelationships are depicted in a graph or table. Your task is to analyse these interrelationships and interpret them correctly. For each item, choose the correct answer (A, B, C or D).

General recommendations on taking the “Analysing Economic Interrelationships” subtest:
In this test you will encounter various types of illustrations: curve graphs (cf. sample question 4), column or bar graphs (cf. sample question 5), pie graphs (cf. sample question 1) and tables.

In curve and column graphs, pay special attention to the units with which the axes are marked. In the simplest case, you will find absolute numbers (e.g. the number of residents or the price in Euros). But sometimes the axis will represent percentages (e.g. the percentage of the population of a country). In the latter case, it is difficult to keep track of the overall number to which the percentage refers. Ten percent of the U.S. population is naturally a greater number of persons than ten percent of the population of Germany.

Experience has shown that graphs depicting percentage changes (cf. Item 5) are particularly difficult.

As a little exercise, check Statements III and IV against the graph in sample question 5:

• Statement III: In the first quarter of 2001, the earnings were greater than in the second quarter of 2001. The statement may appear correct at first sight. But be careful: The statement cannot be evaluated on the basis of the graph, since it would be wrong to compare the bars with one another (cf. above). It is entirely possible that the earnings in 2/2001 were greater than in 1/2001; but it is also possible that they were smaller. Since we do not know the answer, the statement is incorrect.

• Statement IV: In the fourth quarter of 2003, the earnings were smaller than in the fourth quarter of 2000. This statement is incorrect. In 4/2001, the earnings were one percent greater than in 4/2000. In 4/2002, they were about 0.5 percent greater than in 4/2001, and in 4/2003, they were slightly lower than in 4/2002. Altogether, the earnings in 4/2003 were therefore more than one percent greater than in 4/2000.

Sample question 1: degree of difficulty low
Annual vacation (in days) and paid holidays of employees in various countries

Which of the following statements is or are correct?

I. There is no country with fewer annual vacation days than the USA.
II. Of all countries, Spain (E) has the greatest number of paid holidays.

(A) Only statement I is correct.
(B) Only statement II is correct.
(C) Both statements are correct.
(D) Neither of the two statements is correct.

Sample question 2: degree of difficulty medium
The diagram shows the number of employees and the turnover of big German companies in 1997.

<table>
<thead>
<tr>
<th>Company</th>
<th>Employees worldwide</th>
<th>thereof abroad</th>
<th>Turnover worldwide (in million DM)</th>
<th>thereof abroad</th>
</tr>
</thead>
<tbody>
<tr>
<td>Siemens</td>
<td>379,000</td>
<td>46%</td>
<td>94,180</td>
<td>61%</td>
</tr>
<tr>
<td>Volkswagen</td>
<td>260,811</td>
<td>47%</td>
<td>100,123</td>
<td>64%</td>
</tr>
<tr>
<td>Bosch</td>
<td>176,481</td>
<td>47%</td>
<td>41,146</td>
<td>61%</td>
</tr>
<tr>
<td>Hoechst</td>
<td>147,862</td>
<td>63%</td>
<td>50,927</td>
<td>82%</td>
</tr>
<tr>
<td>Bayer</td>
<td>142,200</td>
<td>60%</td>
<td>48,608</td>
<td>82%</td>
</tr>
<tr>
<td>BMW</td>
<td>116,112</td>
<td>45%</td>
<td>52,265</td>
<td>72%</td>
</tr>
<tr>
<td>BASF</td>
<td>103,406</td>
<td>41%</td>
<td>48,776</td>
<td>73%</td>
</tr>
<tr>
<td>VIAG</td>
<td>88,014</td>
<td>47%</td>
<td>42,452</td>
<td>50%</td>
</tr>
</tbody>
</table>
Which of the following statements is or are correct?
I. In 1997, VIAG in Germany had a higher turnover than BASF.
II. In 1997, Siemens had a higher worldwide turnover per employee than BMW.

(A) Only statement I is correct.
(B) Only statement II is correct.
(C) Both statements are correct.
(D) Neither of the two statements is correct.

Sample question 3: degree of difficulty medium

The illustration shows the development of the US Dollar/Euro exchange rate from the beginning of April 2004 to the beginning of April 2005. It shows how many US Dollars one Euro was worth. The value of the dollar in Euros can easily be calculated.

Development of the US Dollar/Euro Exchange Rate

Which of the following statements is or are correct?
I. The value of the Euro (in US Dollars) increased by ten percent from April to the end of October 2004.
II. Anyone who exchanged 1,000 Euros for dollars at the end of November 2004 received more than 1,000 Euros when re-exchanging the money at the end of March 2005.

(A) Only statement I is correct.
(B) Only statement II is correct.
(C) Both statements are correct.
(D) Neither of the two statements is correct.

Sample question 4: degree of difficulty high

The first diagram on the right shows the development in the number of people testing a new product for the first time.

Which diagram shows the development in the number of people who have already tested the product at least once?
Sample question 5: degree of difficulty high

The illustration shows the change in earnings in commerce from the beginning of 2000 to the end of 2005. For each year, the chart shows the percentage by which the earnings changed in the first, second, third and fourth quarters of the year in comparison to the same quarter of the previous year.

Change in Earnings in commerce (in each case: the change with regard to the same quarter of the previous year)

Which of the following statements is or are correct?

I. In the first quarter of 2003, the earnings were more than two percent lower than the earnings in the first quarter of 2002.

II. In the fourth quarter of 2004, the earnings were exactly as high as in the fourth quarter of 2003.

(A) Only statement I is correct.
(B) Only statement II is correct.
(C) Both statements are correct.
(D) Neither of the two statements is correct.

Sample question 6: degree of difficulty high

The diagrams show the results of a survey conducted in Germany at the start of 2009. People were asked whether they had planned a holiday trip for 2009. The third diagram shows the percentage of Germans who took a holiday trip once or several times in the last few years.

Are you planning a holiday trip for 2009?

Which of the following statements is or are correct?

I. On average, more Germans took a holiday trip in 2002 than in 2008.

II. Of those Germans who had planned a trip for 2009, over 40% had already booked a holiday trip at the time the survey was conducted.

(A) Only statement I is correct.
(B) Only statement II is correct.
(C) Both statements are correct.
(D) Neither of the two statements is correct.
In the subtest “Analysing Processes”, you are to formalise sequences of events and analyse flow charts. This test measures mainly the ability to convert concrete economic facts into models and to think within the context of formalised systems. It also measures critical thought in the sense that given facts are tested for correctness and not accepted as true a priori.

22 questions in the test, working time 85 minutes

Instructions

Please read the instructions before you start with the examples.

In this group of items, a process or a model has to be transferred to a flow chart or a given flow chart has to be analysed.

The flow charts can contain the following elements:

- **Beginning** of the process
- **Decision point**: The further process depends on the answer given to the question set here. Example: If the question “K ≤ L?” is answered with “YES”, then the “path” marked “YES” has to be followed. If the question “K ≤ L?” is answered with “NO”, then the “path” marked “NO” has to be followed. (The answer to the question “K ≤ L?” is “YES” if quantity K is smaller than quantity L, or if both quantities are of equal size. The answer is “NO” if K is larger than L.)
- **Operation** that is carried out, or an alternative that is selected. In the example, the price is decreased.
- **Joining together**: Two “paths” are joined together to form a joint “path”.
- **End** of the process

Text and flow chart for sample questions 1 and 2

In the case of a certain product, the number sold per day, \( N_s \), increases, the lower the sales price \( P_s \). Conversely, the higher the \( P_s \), the lower the \( N_s \). A company employee has determined that it is optimal for the company when the number of pieces sold per day is \( N_o \). The flow chart shows a strategy which is to lead to the number sold per day amounting to \( N_o \) at the end (“STOP”).

Sample question 1: degree of difficulty low

Which of the two statements about the strategy is or are correct?

I. If not enough pieces are sold, the sales price is correctly reduced.
II. It can happen that a sales price which is already too low is further reduced.

(A) Only statement I is correct.
(B) Only statement II is correct.
(C) Both statements are correct.
(D) Neither of the two statements is correct.

Sample question 2: degree of difficulty medium

Which of the two statements is or are correct, when the contents of decision points X and Y are exchanged?

I. A correct price is reduced.
II. A price which is too high is further increased.

(A) Only statement I is correct.
(B) Only statement II is correct.
(C) Both statements are correct.
(D) Neither of the two statements is correct.
Sample question 3: degree of difficulty medium

Which of the two statements is or are correct?
I. Decision point V could read: “Exit barrier high?”
II. Element Y could read: “Gilded cage”

(A) Only statement I is correct.
(B) Only statement II is correct.
(C) Both statements are correct.
(D) Neither of the two statements is correct.

Sample question 4: degree of difficulty medium to high

Which of the two statements is or are correct?
I. Decision point V could read: “Entry barrier low?”
II. Decision point X could read the same as decision point W.

(A) Only statement I is correct.
(B) Only statement II is correct.
(C) Both statements are correct.
(D) Neither of the two statements is correct.

Text and flow chart for sample questions 3 and 4

Markets (for example the automobile market in Germany) have an entry barrier and an exit barrier. The entry barrier supplies information as to how difficult it is for a new provider to enter the market – for example to sell cars in Germany. The exit barrier supplies information as to how difficult it is to exit (leave) the market again.

- “flea market”: low entry barrier, low exit barrier
- “mouse trap”: low entry barrier, high exit barrier
- “gold mine”: high entry barrier, low exit barrier
- “gilded cage”: high entry barrier, high exit barrier

Complete the flow chart in such a way that it assigns each market to the correct position.

Sample question 3: degree of difficulty medium

Which of the two statements is or are correct?
I. Decision point V could read: “Exit barrier high?”
II. Element Y could read: “Gilded cage”

(A) Only statement I is correct.
(B) Only statement II is correct.
(C) Both statements are correct.
(D) Neither of the two statements is correct.
Text and flow chart for sample questions 5 and 6

University entrant Schmidt is writing his timetable for his first semester.

The flow chart shows how he proceeds.

MNH: Maximum number of hours that Schmidt has time for courses each week.

NHP: Number of hours that Schmidt has already planned in for courses each week.

“fully booked”: a course is fully booked when no more places are free.

“time conflict”: The course Schmidt has to decide about takes place at the same time as a course already in the timetable.

Sample question 5: degree of difficulty high

Which of the following statements is or are correct?

I. It is possible that Schmidt includes a course in the timetable for which he does not have enough time.

II. It is possible that Schmidt includes a course in the timetable that is less important than a course that has not been included.

(A) Only statement I is correct.
(B) Only statement II is correct.
(C) Both statements are correct.
(D) Neither of the two statements is correct.

Sample question 6: degree of difficulty high

Which of the following statements is or are correct?

I. If there is a time conflict between two courses which both still have free places, then Schmidt always chooses the more important course.

II. If decision point Y is eliminated, then Schmidt always plans in more than twenty hours per week.

(A) Only statement I is correct.
(B) Only statement II is correct.
(C) Both statements are correct.
(D) Neither of the two statements is correct.
Sample questions

Solutions
Analysing Economic Interrelationships

Sample question 1
This item is very simple. You only need to read the individual values in the diagram.
Statement I is correct, since the employees in the USA have an average of only 12 days of annual vacation. In all other countries, the employees have more annual vacation days.
Statement II is also correct, since the employees in Spain have an average of 14 paid holidays. In all other countries, the number of paid holidays is smaller.
Therefore C is the right answer and is to be marked on the answer sheet.

Sample question 2
Statement I is correct: In 1997, VIAG had a worldwide turnover of some 42 billion (42,000 million) DM, half of which (21 billion) was made in Germany. BASF had a worldwide turnover of some 48 billion DM. 73% thereof was made abroad, in other words a little more than a quarter (around 13 billion) was achieved in Germany. Hence VIAG’s turnover in Germany was distinctly higher than that of BASF.
Statement II is incorrect: Siemens’ turnover is almost double that of BMW but it has three times more employees. Hence the turnover per employee at Siemens is lower than that at BMW.
Therefore A is the right answer and is to be marked on the answer sheet.

Sample question 3
This diagram shows how many dollars were received for one Euro over a course of twelve months. The value of the dollar in Euros can be calculated easily:
1 Euro corresponds to 1.2 dollars; 1 dollar accordingly corresponds to 0.83 Euro (1 : 1.2 = 0.83).
Statement I is incorrect, since an increase from 1.2 dollars per Euro to 1.3 dollars per Euro is less than ten (approximately eight) percent.
Statement II is correct, since - as the curve shows - one Euro was worth 1.35 dollars (and 1,000 Euros were accordingly worth 1,350 dollars) at the end of November 2004. At the end of March 2005, one Euro was worth 1.3 dollars, so 1,350 dollars were worth more than 1,000 Euros in any case.
B is therefore the correct answer to this item.

Sample question 4
Initially only a few people test the new product. Hence the number of people who have already tested the product shows only a slight increase. Then many people try the product. Hence the number of people who have already tested the product shows a strong increase. In the end, there are again only a few people trying the product for the first time. Hence the number of people who have already tested the product shows only a slight increase. Curve A is the only one to correctly show this development, qualitatively speaking: starting off with a slight increase, then showing a big increase, and ending with a slight increase.
Therefore A is the correct answer.

Sample question 5
To decide whether the statements are correct or not, it is necessary to read the caption of the vertical axis carefully and interpret it correctly. The bar chart does not show absolute numbers, but rather changes in comparison to the same quarter of the previous year (in percent). The first bar (1/2000) thus shows that the profits in the first quarter of 2000 were 1.5 percent greater than in the first quarter of 1999. We do not know how high the profits in 1/2000 were: that information cannot be derived from the chart. What that means is that the bars cannot be compared with one another.
Statement I is correct: We can determine this immediately on the basis of the length of the bar: In 1/2003, the profits were more than two percent less than in 1/2002.
Statement II is likewise correct: There is no bar visible for 4/2004. That means there was neither a positive nor a negative change. The profits in 4/2004 were therefore exactly as high as in 4/2003.
Therefore C is the right answer.

Sample question 6
Statement I is incorrect: a higher percentage of Germans took a holiday trip in 2002 than in 2008. However, among those who took several holiday trips, we have no knowledge of how many trips they took. If, for example, these people went on 3 trips on average in 2002 but went on 5 trips on average in 2008, then the average number of trips per person could be higher in 2008 (1.44 trips per person in 2008 and 1.09 trips per person in 2002).
Statement II is correct: 52% planned to take a holiday trip and 22% had already booked a holiday trip. 22 of 52 is over 40%. For 22 of 52 is more than 20 of 50, and 20 of 50 would be exactly 40%.
B is therefore the correct answer.

Sample question 7
This item is very simple. You only need to read the individual values in the diagram.
Statement I is correct, since the employees in the USA have an average of only 12 days of annual vacation. In all other countries, the employees have more annual vacation days.
Statement II is also correct, since the employees in Spain have an average of 14 paid holidays. In all other countries, the number of paid holidays is smaller.
Therefore C is the right answer and is to be marked on the answer sheet.

Sample question 8
Statement I is correct: In 1997, VIAG had a worldwide turnover of some 42 billion (42,000 million) DM, half of which (21 billion) was made in Germany. BASF had a worldwide turnover of some 48 billion DM. 73% thereof was made abroad, in other words a little more than a quarter (around 13 billion) was achieved in Germany. Hence VIAG’s turnover in Germany was distinctly higher than that of BASF.
Statement II is incorrect: Siemens’ turnover is almost double that of BMW but it has three times more employees. Hence the turnover per employee at Siemens is lower than that at BMW.
Therefore A is the right answer and is to be marked on the answer sheet.

Sample question 9
This diagram shows how many dollars were received for one Euro over a course of twelve months. The value of the dollar in Euros can be calculated easily:
1 Euro corresponds to 1.2 dollars; 1 dollar accordingly corresponds to 0.83 Euro (1 : 1.2 = 0.83).
Statement I is incorrect, since an increase from 1.2 dollars per Euro to 1.3 dollars per Euro is less than ten (approximately eight) percent.
Statement II is correct, since - as the curve shows - one Euro was worth 1.35 dollars (and 1,000 Euros were accordingly worth 1,350 dollars) at the end of November 2004. At the end of March 2005, one Euro was worth 1.3 dollars, so 1,350 dollars were worth more than 1,000 Euros in any case.
B is therefore the correct answer to this item.

Sample question 10
Initially only a few people test the new product. Hence the number of people who have already tested the product shows only a slight increase. Then many people try the product. Hence the number of people who have already tested the product shows a strong increase. In the end, there are again only a few people trying the product for the first time. Hence the number of people who have already tested the product shows only a slight increase. Curve A is the only one to correctly show this development, qualitatively speaking: starting off with a slight increase, then showing a big increase, and ending with a slight increase.
Therefore A is the correct answer.
Analysing Processes

Sample question 1
Statement I refers to a situation in which too few pieces are sold. In such a situation, \( N_S < N_O \). In this case, the answer to the question at decision point \( X \) ("\( N_S < N_O \) ?") is "YES", and the operation "Reduce \( P_S \)" follows correctly. Statement I is therefore correct.

Statement II refers to a situation in which the sales price is too low. As a result, too many pieces are sold: \( N_S > N_O \). In this case, the answer to the question at decision point \( X \) ("\( N_S > N_O \) ?") is "NO", and the answer to the question at decision point \( Y \) ("\( N_S > N_O \) ?") is "YES". The operation "Increase \( P_S \)" thus follows correctly. Statement II is therefore false.

The correct solution to this item is therefore A.

Sample question 2
Statement I is not correct: When a price is correct, the number of pieces sold \( N_S \) corresponds to the optimal number \( N_O \). The answers to the questions "\( NS < NO \)?" and "\( NS > NO \)?" would be answered "NO" and the "STOP" sign would be reached without any change in price. It is therefore not possible that a correct price is changed (in this case reduced) in this flow chart.

Statement II is correct: It says that a price which is too high is increased further as soon as the contents of the two decision points are exchanged. When the price is too high, \( N_S \) is smaller than \( N_O \). The question posed at decision point \( X \) is then answered "NO". The question at decision point \( Y \) is answered "YES" and the price is raised.

The solution is therefore B, since only statement II is correct.

Sample question 3
In the case of statement I, it suffices to consider the following: Decision point \( V \) must contain a question which, if its answer is "YES", corresponds to the market form "Gold Mine". If the answer to the question in statement I ("Exit barrier high?") is "YES", it does not correspond to "Gold Mine", since, in the case of the "Gold Mine", the exit barrier is low. Therefore statement I is false.

In the case of statement II it is necessary to recognize that there are two possible ways of completing the flow chart:
If the question at decision point \( V \) is "Exit barrier high?", then the question at decision point \( X \) must read "Exit barrier low?" in order to correspond to the element "Mouse Trap", which is a given. In this case, "Flea Market" would be entered in element \( Y \).

It is also possible, however, that decision point \( V \) reads "Exit barrier low?". In this case, the question at decision point \( X \) would have to read "Entry barrier high?" in order to correspond to the element "Mouse Trap". Element \( Y \) would then be "Gilded Cage". Statement II is accordingly correct.

The solution to this item is therefore B.

Sample question 4
Statement I is not correct: If decision point \( V \) says "Entry barrier low?", in the case of "Mouse trap" this question should be answered "YES", because the entry barriers for a "Mouse trap" are low. If the question at decision point \( V \) is answered "YES", it is no longer possible to reach the "Mouse trap". If element \( Z \) also says "Mouse trap" then only one assignment possibility remains (element \( Y \)), but two forms, the "Gilded cage" and "Flea market" still have to be assigned.

Statement II is not correct: If the question in \( X \) and \( Z \) is the same, then "Mouse trap" and "Gold mine" should be reached by the way of a "NO" answer. Therefore, one of the barriers (entry barrier or exit barrier) should be the same for both forms.

However, both the entry barrier (gold mine: high; mouse trap: low) and the exit barrier (gold mine: low; mouse trap: high) are different.

The correct solution is therefore D, since neither of the two statements is correct.

Sample question 5
Statement I is correct: Schmidt has a maximum of 20 hours time for courses per week (Element G: "MNH := 20"). Let us assume that 19 hours per week have already been planned for courses (\( NHP = 19 \)). Now a course which lasts two hours per week is selected from the List K. The course isn't full yet and there is no time conflict (see decision points \( W \) and \( X \)). Under these conditions, \( NHP \) increases by two hours and the course is added to the weekly schedule (see elements \( M \) and \( N \)). The weekly schedule now comprises 21 hours (\( NHP = 21 \)), even though Schmidt only has 20 hours at his disposal. This circumstance is reflected in decision point \( Y \), but no correction is made.

Statement II is also correct: Let us assume that a course selected from List K (see element \( H \)) cannot be added to the weekly schedule because it is already full (see decision point \( W \)). The next step is the selection of a less important course, which is not full yet and with which there is no time conflict, in element \( H \). This course is then added to the weekly schedule in element \( N \).

Therefore C is the solution to this item.

Sample question 6
Statement I is correct: Schmidt always chooses the most important course from the List K and checks whether he can sign up for it. A time conflict means that the course Schmidt has to make a decision about takes place at the same time as a course which is already in his timetable. The more important course has always been chosen first and included in the timetable. Every course Schmidt considers later – and thus every less important course – is crossed off the list because of the time clash.

Statement II is not correct: If Schmidt includes only few courses with less than 20 hours altogether in List K from the start, then even without decision point \( Y \) he does not exceed his 20-hour limit during his planning process; in other words he does not necessarily plan in more course time than he has at his disposal.

Therefore the correct solution is A, since only statement I is correct.
If you have any further questions:

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