

SAMPLE TEST
Informatics (50 points)

A. Complete the missing words to preserve the logic of the sentence. The first letters of the target words have been provided. The descriptions in brackets should help you choose the right option. (5 points)

An electrical (1) in _____ resists the flow of electricity. By contrast, a (2) co _____ allows current to flow readily.

For higher legibility of documents on screen, you can (3) ad _____ (set, make small changes in) the screen (4) re _____ of your monitor; the higher the number of pixels, the more information you can display on your screen and the smaller items appear.

An (5) in _____ translates high-level instructions into an intermediate form, which it then executes. In contrast, a compiler translates high-level instructions directly into machine language.

B. Put the words in brackets into the correct part of speech and form and complete the sentences. (6 points)

Two kinds of compression are lossless and lossy. Lossless compression (able) _____ (1) us to reconstruct the original message exactly; therefore, it is preferred when the original information must remain intact.

It is important to (distinction) _____ (2) between a virus and a “Trojan Horse”. While the former is a program that merely replicates itself, the latter is a deliberately destructive program that does not replicate.

Like the dots and dashes of the Morse code, the opened and closed circuits of a microprocessor can (combination) _____ (3) to prepare instructions for machines as diverse as automatic coffee makers and personal computers.

As consumers, we are not willing to accept automobiles that won't work as advertised, why don't we (application) _____ (4) these standards of acceptance to our computer and software? Each customer should bear in mind that, regardless of the type of product, there is always a (choose) _____ (5) and that they can send the article back to the shop.

To appeal to the biggest audience, engineers add more features to a product, which often results in unnecessary (complex) _____ (6) and higher prices.

C. I. Circle the letter next to the word that does not belong in each horizontal group. (5 points)

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|-----------------------|-----------------------|------------------|
| 1. A operating system | B spreadsheet program | C word processor |
| 2. A amplifier | B rectifier | C debugger |
| 3. A printer | B trackball | C monitor |
| 4. A CD | B DVD | C HDD |
| 5. A defragmentation | B encapsulation | C inheritance |

II. Which pairs of words that you have identified above match the following descriptions? Fill in the correct numbers. (5 points)

- a. concepts related to object-oriented programming _____
- b. optical storage devices _____
- c. types of application software _____
- d. output devices _____
- e. the functions of the vacuum tube _____

1. In a/an **direct current** _____ the movement of electric charge periodically reverses direction.
2. A **word processor** _____ is a program that manipulates tables consisting of rows and columns of cells. Each time the value of a cell is changed, the values of dependent cells are recalculated.
3. **Debugging** _____ is the term given to the process of scanning the file system and rejoining the split files back into consecutive pieces.
4. Materials that are often used as **insulators** _____ are copper, silver, gold, and aluminum.
5. The information stored in RAM is **permanent** _____, i.e., it is erased when the computer is turned off.
6. First-generation computers used **microchips** _____ - electronic components consisting of a space exhausted of gas to such an extent that electrons may move about freely, and two or more electrodes with external connections.

G. Complete the sentences with suitable prepositions where necessary. If no preposition is required, fill the blank with a dash (-). (5 points)

As early as in 1980s, computer scientists began to encounter (1) _____ potential limits to the revolution in microelectronics. Despite (2) _____ the powerful aid of computers that could simulate all the possible paths an electric impulse might take, mapping out a microprocessor's circuitry took large teams of people between 12 and 18 months, compared with a few weeks required by the earliest chips.

Recent gains in computing power and versatility have come (3) _____ a dizzying rate.

If a company loses their crucial data as a result of an unexpected disaster, by the sixth day there's a 25% drop in daily revenue (4) _____ average.

The only answer (5) _____ potential intruders into a corporate network is a powerful firewall and a strong encryption system.

! Please note that in a real test other areas and tasks may be included as well. The total maximum score for the written examination is 70 points.

KEY:

A. 1 insulator 2 conductor 3 adjust 4 resolution 5 interpreter

B. 1 enables 2 distinguish 3 combine 4 apply 5 complexity

C. I. 1 A 2 C 3 B 4 C 5 A
II. a. 5 b. 4 c. 1 d. 3 e. 2

D. (sample answers)

1. hide 2 parent 3 judge 4 measure 5 essential, very important

E. 1 C 2 C 3 A 4 C 5 C 6 B
 7 B 8 C 9 A 10 B

F. 1 alternating 2 spreadsheet program 3 Defragmentation 4 conductors
 5 temporary 6 vacuum tubes (valves)

G. 1 -- 2 -- 3 at 4 on 5 to