



Equivalents

1- Provide Persian equivalents for the following terms (30):

State of the art		Volatile	
Slate		Frustration	
Dominant		Obsolete	
Redeem		Alter	
Glimpse		Proprietary	
Hassle		Deduction	
Enthusiastic		Emit	
Vehicle		Merchandise	
Resemble		Endeavor	
Nucleus		Throughput	
Versatile		Commonplace	
Negotiate		Incentive	
Proponent		Spawn	
Analogous		Transcribe	
Etiquette		Flicker	



Reading

2- Read the text and answer the questions¹ (30):

Programs and programming languages

Computers can deal with different kinds of problems if they are given the right instructions for what to do. Instructions are first written in one of the high-level languages, e.g. FORTRAN, COBOL, ALGOL, PL/I, PASCAL, BASIC, or C, depending on the type of problem to be solved. A program written in one of these languages is often called a source program, and it cannot be directly processed by the computer until it has been compiled, which means interpreted into machine code. Usually a single instruction written in a high-level language, when transformed into machine code, results in several instructions. Here is a brief description of some of the many high-level languages:

- FORTRAN** acronym for FORmula TRANslation. This language is used for solving scientific and mathematical problems. It consists of algebraic formulae and English phrases. It was first introduced in the United States in 1954.
- COBOL** acronym for COmmon Business-Oriented Language. This language is used for commercial purposes. COBOL, which is written using English statements, deals with problems that do not involve a lot of mathematical calculations. It was first introduced in 1959.
- ALGOL** acronym for ALGORithmic Language. Originally called IAL, which means International Algebraic Language. It is used for mathematical and scientific purposes. ALGOL was first introduced in Europe in 1960.

¹ The text and questions have been adapted from: Boeckner, K., Brown, C., *Oxford English for Computing*, Oxford University Press, 1993.



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◀ **PL/I** Programming Language I. Developed in 1964 to combine features of COBOL and ALGOL. Consequently, it is used for data processing as well as scientific applications.

BASIC acronym for Beginner's All-purpose Symbolic Instruction Code. Developed in 1965 at Dartmouth College in the United States for use by students who require a simple language to begin programming.

C developed in the 1970s to support the UNIX operating system. C is a highly portable general-purpose language.

Other such languages are APL (developed in 1962), PASCAL (named after Blaise Pascal and developed in 1971), and LISP and PROLOG, both of which are used for work in artificial intelligence. LOGO is a development of LISP which has been used to develop computer-based training (CBT) packages.

When a program written in one of these high-level languages is designed to do a specific type of work such as calculate a company's payroll or calculate the stress factor on a roof, it is called an applications program. Institutions either purchase these programs as packages or commission their own programmers to write them to meet the specifications of the users.

The program produced after the source program has been converted into machine code is referred to as an object program or object module. This is done by a computer program called the compiler, which is unique for each computer. Consequently, a computer needs its own compiler for the various high-level languages if it is expected to accept programs written in those languages. For example, in order that an IBM RS/6000 may process a program in FORTRAN, it needs to have a compiler that would understand that particular model and the FORTRAN language as well.

The compiler is a systems program which may be written in any language, but the computer's operating system is a true systems program which controls the central processing unit (CPU), the input, the output, and the secondary memory devices. Another systems program is the linkage editor, which fetches required systems routines and links them to the object module (the source program in machine code). The resulting program is then called the load module, which is the program directly executable by the computer. Although systems programs are part of the software, they are usually provided by the manufacturer of the machine.

Unlike systems programs, software packages are sold by various vendors and not necessarily by the computer manufacturer. They are a set of programs designed to perform certain applications which conform to the particular specifications of the user. Payroll is an example of such a package which allows the user to input data – hours worked, pay rates, special deductions, names of employees – and get salary calculations as output. These packages are coded in machine language (0s and 1s) on magnetic tapes or disks which can be purchased, leased, or rented by users who choose the package that most closely corresponds to their needs. ■



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Summarize the information on different high-level computer languages by completing the table below.

Language	Developed	Function	Characteristic
FORTRAN			
	1959		
		mathematical and scientific purposes	
			combines features of COBOL and ALGOL
BASIC			
		to support Unix operating system	
	1962		

Find the passages in the text where the following ideas are expressed. Give the line references.

line

- 1 l. ___ Systems programs control the work of the computer system.
- 2 l. ___ Software packages are not always sold by the manufacturer.
- 3 l. ___ Usually, every high-level instruction translates into many more in machine code.
- 4 l. ___ Systems programs are usually provided by the manufacturer.
- 5 l. ___ Programmers may be required to write software for their employers.



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Using the line reference given, look back in the text and find the reference for the words in *italics*.

- 1 if *they* are given the right (line 1)
 - 2 *it* cannot be directly processed (line 5)
 - 3 *it* is called an applications program (line 38)
 - 4 commission *their* own programmers (line 40)
 - 5 to write *them* to meet (line 40)
 - 6 *that* would understand (line 48)
 - 7 *which* controls the central (line 51)
 - 8 links *them* to the object (line 54)
 - 9 *They* are a set of programs (line 60)
 - 10 *which* can be purchased (line 66)
-

Using the line references given, refer back to the text and find words or phrases that have a similar meaning to:

- 1 converted (lines 5–10)
 - 2 give the responsibility to (lines 35–40)
 - 3 brings (lines 50–55)
 - 4 are compatible with (lines 60–65)
 - 5 matches (lines 65–67)
-



Word Forms

3- Fill in the blanks with the words provided; some words may be used more than once (15):

1 *instruction, instruct, instructed, instructor*

- a** Our maths _____ explained to us the principles of binary arithmetic.
- b** We were _____ to document our programs very carefully.
- c** Both _____ and data have to be changed to machine code before the computer can operate on them.

2 *compilation, compiler, compile, compiled*

- a** Our university computer does not have a PASCAL _____.
- b** Usually, a programmer _____ his program before he puts in the data.
- c** A source program cannot be directly processed by the computer until it has been _____.

3 *result, results, resulting*

- a** The linkage editor links systems routines to the object module. The _____ program, referred to as the load module, is directly executable by the computer.
 - b** The _____ of these mathematical operations were obtained from the university mainframe and not from my micro.
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4 *specification, specify, specific, specified, specifically*

- a** Our company bought three packages with very _____ applications: payroll, accounts receivable, and accounts payable.
- b** An applications program is designed to do a _____ type of work, such as calculating the stress factor of a roof.
- c** Did the analyst give the new programmer the _____ necessary to start on the project?

5 *connect, connected, connecting, connector, connectivity, connection*

- a** _____ is an important concept in global communications.
- b** He only got that contract because he has _____ in the government.
- c** Make sure the _____ is not loose before you call a service technician.
- d** Once the new telephone lines are _____, our system should be more efficient.



TRANSLATION

4- Translate the following passages into Persian (35):

- Computer technology is having a profound effect on physically challenged people. With the aid of computers, they are now better prepared to take control of their environments. A little over a decade ago, Nan Davis stunned the world. A paraplegic since an automobile accident on the night of her high school graduation, she walked to the podium to receive her college diploma – with the help of a rehabilitative tool that uses FES, or Functional Electrical Stimulation.

- Most Existing graphics adapters have their own RAM, called video RAM or VRAM, where they prepare monitor-bound images for display. The size of the video RAM is important in that it determines the number of possible colors and resolution of the display, as well as the speed at which signals can be sent to the monitor. A minimum of two megabytes of video RAM is recommended to accommodate the complexities of modern graphics-based software.



- The power of a PC may not be related to its size. A few laptop PCs can run circles around some tower PCs. Some user conveniences, however, should be sacrificed to achieve portability. For instance, input devices, such as keyboards and point-and-draw devices, are given less space in portable PCs and may be more cumbersome to use.

- Optical technology opens the door to new and exciting applications. Already this technology is leading the way to the library of the future. Because the world's output of knowledge is doubling every four years, the typical library is bursting at the seams with books and other printed materials. With library budgets declining, it may be impractical to continue to build structures to warehouse printed materials.

- Not too long ago, people who pursued careers in almost any facet of business, education, or government were content to leave computers to computer professionals. Today these people are knowledge workers. In less than a generation, information technology competency has emerged in virtually any career from a *nice-to-have skill* to a *job-critical skill*.

