GIRLS' HIGH SCHOOL & COLLEGE, PRAYAGRAJ

WORKSHEET NO. : 2

SESSION: 2020-2021

CLASS: 6 (A, B, C, D, E, F)

SUBJECT: COMPUTER

INSTRUCTIONS: Parents please ensure that the student reads the content carefully to answer the questions below. They can also refer to any Computer book (Cl-6) for a detailed study of the chapter or they can refer to Internet.

Link: **https://youtu.be/lfuUiBanVDM**

CHAPTER 1: CATEGORIES OF COMPUTERS AND COMPUTER LANGUAGES

TOPIC: COMPUTER LANGUAGES AND LANGUAGE PROCESSORS

➢ COMPUTER LANGUAGES

To communicate with a computer, we need a language that a computer understands. For every action, a computer has to be given instructions accordingly.

- A program is a set of instructions that tells the computer what to do.
- The process of writing specific instructions in a computer language is called programming. Each programming language has its own specific rules governing the formation of statements. These rules are known as syntax.

The development of computer languages has been classified into the following categories:

- **Machine Language (First Generation):** It is the only language that a computer understands. It is expressed in binary form, i.e., '0' and '1' where 0 means 'Off' state and 1 means 'On' state. Machine Language has the advantage of very high speed and very low memory utilisation. It is extremely machine-dependent. That is why Machine language is also regarded as Low Level Language (LLL). A machine language program written on one computer may or may not run on another computer.
- **Assembly Language (Second Generation):** This language uses Mnemonic codes or Symbols in place of 0 and 1. It is easy to work in Assembly language than in binary language. Assembly Language is also machine-dependent like machine language. Thus it is also regarded as a Low Level Language (LLL). A program written in assembly language has to be converted into machine language by Translator program (Assembler).
- **High Level Language (Third Generation):** This language uses English words and Mathematical operators. This language is simple and user friendly. High Level Language is machine-independent. A high level language program has to be converted into machine language by Translator programs (Interpreter and Compiler). Examples of high level languages are COBOL, FORTRAN, C, C++, Java, etc.
- **Fourth Generation Language (4GL):** Fourth generation languages are closer to human language than any other high level language. This language is highly user-friendly and independent of any operating system. It requires minimum efforts from the user to obtain any information. It is

designed to reduce the overall time it takes to develop software and the cost of software development. Structured Query Language (SQL) is the most popular example of 4GL.

➢ LANGUAGE PROCESSORS

Computer understands only the machine language, hence a program written in any other computer language, has to be converted into the machine language first. To translate any high-level language program to the machine language, a software is required. This software is called a Language processor or a Language translator. There are three different types of language translators.

- **Assembler:** Assembler is used to convert the assembly language program into machine language. A program written in assembly language is called the Source program, whereas, the program converted into the machine language by the assembler is called Object program or Object code.
- **Interpreter:** This translator program is used to convert a high level language program into machine language. An Interpreter translates line by line, executes the instruction and then repeats the procedure for the remaining instructions. If any errors are found, they are to be removed immediately. Interpreter programs are preferred for beginners and are slow in execution speed.
- **Compiler:** This translator program is used to convert a high level language program into machine language. A Compiler translates the whole program at once, i.e., it generates the object code for the program along with the list of errors, the execution speed of a compiler is faster as compared to an interpreter.

EXERCISE

A. Fill in the blanks:

1. The development of computer languages can be classified into _________ categories.
2. In binary language, 0 means _________ and 1 means ________ state.
3. __________ is the process of writing specific instructions in a computer language.
4. __________is used to convert the assembly language program into machine language.
5. A ________ is a set of instructions, which tells the computer what to do.

B. State True or False:

1. Assembly language is regarded as the first generation language.
2. The execution speed of a compiler is faster as compared to an interpreter.
3. Each programming language has its own specific rules.
4. It is easy to work in Assembly language than in Binary language.
5. Fourth generation languages are closer to human language than any other high level language.

C. Multiple Choice Questions:

1. A __________ translates a high level language program into machine language.

   (a) Language Processor (b) Source program (c) Assembler.

2. _________ language consists of binary numbers.

   (a) Assembly (b) Machine (c) Fourth Generation.

3. __________ is used to convert a high level language program into machine language, line by line.

   (a) Assembler (b) Compiler (c) Interpreter.

4. _________language is regarded as Low Level Language (LLL).

   (a) Fourth Generation (b) High Level (c) Machine.

5. _________ generation language is highly user-friendly and independent of any operating system.

   (a) First (b) Second (c) Fourth.

D. Answer in one word:

1. Write an example of fourth generation language.
2. Which language uses mnemonic codes?
3. Which language translator was used to translate programs in second generation?
4. Give an example of high level language.
5. Which language is directly understood by a computer?

E. Answer the Following:

1. What is Syntax?
2. What do you know about Machine language?
3. How is Assembly language different from Machine language?
4. Write any two points of difference between an Interpreter and a Compiler.
5. Differentiate between Source program and Object Program.

END