

Bishop Cotton School, Shimla

Computer Science

Class 6

Study Material

(1st April to 14th April, 2020)

General Instructions

The study material contains four components:

- Chapter 1(Answers for Back Exercises)
- Chapter 1 Notes
- Question Bank(Chapter 1)
- Practical Activity

Chapter 1 (Solution): The first component contains solution for the back exercises (Chapter 1). Please ensure all the questions are written in the computer notebook. (Please don't rewrite if the work has already been completed in the notebook.)

Chapter 1 Notes: Students must read the notes thoroughly for better understanding of the chapter.

Question Bank (Chapter 1): Question bank contains some questions related to the chapter. Students are **not** required to submit any hardcopy /hand written copy of the answers for the question bank to the teacher. Students should make use of these questions for self assessment. Parents may use these questions for testing the learning outcome of the students. Parents and students may apply any method/technique for revision as per the available resources. Answer key is also provided.

Practical Activity: Creation of a table in MS Word

For Any other queries regarding the computer assignment, please contact via email

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Chapter 1

Categories of Computers and Computer Language

EXERCISES (SOLUTION)

SECTION A

A. Multiple Choice questions.

Tick the correct options.

1. Mainframe computers were developed by a company named **IBM**
2. **Interpreter** translates a program in a step by step process.

B. Fill in the blanks.

1. Languages are classified into types high **level language** and **low level language**.
2. **Assembly** language uses mnemonics.
3. A code written in high level language is known as **program code**.
4. **C or C++ or Java** is an example of high level language.
5. Personal Computers are also called **microcomputers**.

SECTION B

A. Answer the following.

1. Explain Mainframe Computers.

Answer

Mainframe computers are the big computers with a large memory and high speed. They have multiple CPUs. They are mainly used by big organizations like banks and government offices.

2. Write any two features of Supercomputers.

Answer

The two features of Supercomputers are:

- I. They are the world's largest and fastest computers.
- II. They have multiple CPU's.

3. Differentiate between assembly language and machine language.

Answer

Assembly Language	Machine Language
1) It uses letter codes or mnemonics.	1) It uses a pattern of 0 and 1.
2) It requires a translator for converting assembly language into machine language.	2) It requires no translation program.

4. Write a short note on the working of a translator.

Answer

Translator is a translation program. The code written in high level language is known as a program code. A translator converts this program code into machine code. The converted code is sent to CPU for processing.

5. What is the difference between Personal Computers and Minicomputers?

Answer

Personal Computer	Minicomputer
1) It is smaller in size as compared to minicomputer.	1) It is bigger in size as compared to the PCs.
2) It supports a single user.	2) It supports multiple users.

B. Computer in Everyday life (Application based Questions)

1. Which type of computer should a bank use to do all its operations to meet the customer's requirements? Why do you suggest so?

Answer

Bank should use a mainframe computer because of its large memory size, multiple CPU and high speed.

2. Your friend says there is no difference between her desktop computer and the computer inside a washing machine, as both are computers. Do you agree with your friend? Explain your reasons.

Answer

No, I don't agree with my friend because a washing machine makes use of an embedded computer. Embedded computers are used to do a specific task whereas a general purpose computer is used for multiple tasks.

CHAPTER 1

NOTES

Revision Activity

Categories of Computers and computer languages

Computer

Computer is an electronic device which takes input, processes it as per the instructions and gives the output.

INPUT->PROCESSING->OUTPUT

Categories of Computers

Computers can be categorized into the following types

- Microcomputers
- Minicomputers
- Mainframe computers
- Supercomputers
- Mobile Computers
- Game console
- Embedded computer

Microcomputers

- They are known as personal computers.
- They are small in size and made up of single chip processor making them cost effective.
- They are widely used in schools, homes, offices, banks, shops and hotels.

Example

C64, IBM PC

Minicomputers

- They were developed in late 1960s.
- They are bigger in size than Microcomputers.
- Multiple users can use it at the same time.

Example

VAX computer and PDP-8

Mainframe computers

- It has large memory and high speed.
- They have multiple CPUs.
- They are used by big organizations like bank and government offices.

Example

PDP-10, IBM 390 and System Z10

Supercomputers

- They are world's largest and fastest computers.
- They can process huge amount of data within seconds.
- They have multiple CPUs.
- They are used in weather forecasting, defense, space research, scientific applications etc.

Example

CRAY, TITAN, PRATYUSH and MIHIR

Mobile Computers

- They are the smallest portable computers.

Example– Tablets and Smartphone

Game Console

- These devices are used for playing computer games.
- It has a fast processor and large memory.
- Gaming consoles come with their own dedicated input devices.

Example- Sony play station, Microsoft Xbox

Embedded Computers

- Embedded computer is a small computer fixed inside a machine to perform a particular task.
- It is designed to do a specific task.
- An embedded computer has all the components of a computer like input, output, CPU and memory.
- Some machines with embedded computers are listed below
 - Digital Cameras
 - Dishwashers
 - Washing Machine

- Glucometer
- Kindle
- GPS Receiver
- Microwave

Computer Languages

Computer Language is a medium used to give instructions to a computer.

Program: A set of instructions given to a computer is known as a program.

Computer Language is classified into two types

Low level language

These languages are easier for the machines to understand but difficult for humans to understand.

Example- Machine language, Assembly language

High Level language

These languages are easier for a human to understand but difficult for a computer to understand.

Example- C, C++, Java

Generation of Computer languages

1. Machine language

- It is known as the first generation language.
- It is written in patterns of 0 and 1.
- It is directly understood by the computer.
- It doesn't require a language translator.
- It is machine dependent language.

2. Assembly language

- It is known as the second generation language.
- It makes use of symbolic representation or letter codes known as mnemonics.
- It is a machine dependent language.
- It requires a translator to convert assembly language to machine language.

3. High level language

- The instructions are written in English like language.
- It is machine independent.

- It requires a translator for converting high level language to machine language.
- C, C++, Java are some examples of high level languages.

4. Fourth Generation language

- These languages are also known as 4GLs.
- It reduces programming efforts, time and cost.
- It uses graphical interface and icons.
- It is used for generating reports.
- SQL is an example of Fourth generation language.

Language translators

A language translator is a program that translates high level language or a programming language to machine language.

Working of a translator

Program code -> Translator ->Machine Code

Types of translators:

Assembler

Assembler is a program used to convert assembly language into machine language.

Compiler

Compiler translates the whole program to machine language in a single operation. It is faster as compared to an interpreter.

Interpreter

Interpreter translates a program to machine language in a step by step process.

Question Bank

Chapter 1

Objective type Questions.

A. State True or False.

1. Assembly language uses instructions that are coded in terms of 0's and 1's.
2. Compiler converts a program written in high level language into machine language in a step by step process.
3. First generation languages used the machine languages.
4. Minicomputers are used for scientific applications.
5. The letter codes used in assembly languages are known as mnemonics.

B. Fill in the blanks.

1. A set of instructions given to a computer is known as _____
2. _____ is used to convert assembly language to machine language.
3. _____ language uses mnemonics in place of 0's and 1's.
4. _____ is known as the third generation language.
5. _____ are used in large organizations like banks and railway stations.

Subjective Type Questions

A. Short Answer Type Questions.

1. Name the two categories of computer languages.
2. Name the translator program which converts the whole program at once.
3. Name two high level languages.
4. What is the full form of 4GL?
5. Name the languages which are machine dependent.

B. Long Answer type questions.

1. Differentiate between
 - i. Machine language and Assembly language
 - ii. High level language and Low level language
 - iii. Compiler and Interpreter
 - iv. Microcomputer and Minicomputer
2. Enlist two features of assembly languages.
3. Define Mainframe computers. Where are they used?
4. Enlist any two features of supercomputers.
5. What is a language translator? Name any two language translators.

Chapter 1

(Question Bank)

ANSWER KEY

Objective type questions

A. State True or False.

1. False
2. False
3. True
4. False
5. True

B. Fill in the blanks.

1. Program
2. Assembler
3. Assembly language
4. High level languages
5. Mainframe computers

Subjective Type questions

A. Short Answer type Questions

1. High level language and low level language
2. Compiler
3. C, C++, Java (any two)
4. Fourth Generation Language
5. Machine language and assembly language

B. Long Type Questions.

(Please refer to the notes and find the solution. Students should be encouraged to answer the questions in their own words.)

Practical Activity

Steps to insert a table in MS WORD

- Open a WORD DOCUMENT
- Click on INSERT tab
- Click on TABLE button
- In the dropdown menu, you will see a grid. Move your mouse over the desired number of columns and rows in this grid.
- The table with selected number of rows and columns is inserted into your word document.

To insert a large table:

- Place the mouse pointer at the location where the table is to be inserted.
- Click INSERT->TABLE button->Insert table option from the drop down menu
- Enter the number of columns and rows
- Click OK.
- Word will insert a table with the given rows and columns.

Activity

Insert a table with 5 rows and 2 columns to save the details of any four football players.

For example:

Team	Player Name
Liverpool	Roberto Firmino
Manchester United	Paul Pogba
Arsenal	Nicolas Pepe
Manchester City	Riyad Mahrez