

HIGHER SECONDARY FIRST YEAR 2 MARK & 5 MARK NOTES

CHAPTER 1

1. INTRODUCTION TO COMPUTER**1. What is computer?**

A computer is an electronic machine, capable of performing basic operations like addition, subtraction, multiplication, division, etc. The computer is also capable of storing information, which can be used later.

2. What is the name of the machine developed by Charles Babbage?

The Difference Engine was built by Charles Babbage . Babbage is called the father of today's computer.

3. What is algorithm?

Algorithm is defined as a step-by-step procedure or formula for solving a problem i.e. a set of instructions or procedures for solving a problem.

4. List out the computer system components?

- ✓ Hardware
- ✓ Software.

5. What is Computer Software?

Software refers to a program that makes the computer to do something meaningful. It is the planned, step-by-step instructions required to turn data into information.

6. List out the computer classifications?

- ✓ Analog computers
- ✓ Digital Computers
- ✓ Hybrid computers.

7. Classification of Digital Computers?

- ✓ Super computers
- ✓ Mainframe computers
- ✓ Mini computers
- ✓ Micro computers

8. Classification of Micro Computers?

- ✓ workstation
- ✓ personal computers
- ✓ laptop computers

HIGHER SECONDARY FIRST YEAR 2 MARK & 5 MARK NOTES

- ✓ smaller computers

9. Define 'Data'.

Data is a collection of facts from which information may be derived. Stored facts. Data is defined as an un-processed collection of raw facts in a manner suitable for communication, interpretation or processing.

10. Define 'Information'.

Information is a collection of facts from which conclusions may be drawn. Data that has been interpreted, translated, or transformed to reveal the underlying meaning. This information can be represented in textual, numerical, graphic, cartographic, narrative, or audiovisual forms.

11. What is an operating System?

The Operating system provides so many facilities with which a user comfortably uses their computers.

12. What is an analog computing system?

Analog Computer is a computing device that works on continuous range of values.

13. What is a lap-top computer?

Laptop computers are portable computers that fit in a briefcase. **Laptop computers**, also called **notebook computers**, are wonderfully portable and functional, and popular with travelers who need a computer that can go with them.

14. What are the peripheral devices ?

The hardware devices attached to the computer are called peripheral equipment. Peripheral equipment includes all input, output and secondary storage devices.

15. What is word processor software?

The software lets you create, edit, format, store and print text and graphics. Some of the commonly used word processors are Microsoft Word, WordStar, WordPerfect, etc.

16. What is a computer program?

A computer **program** (or set of programs) is designed to systematically solve a problem.

5 MARKS

1. Discuss the various computer generations along with the key characteristics of the computer of each generation.

First Generation - 1940-1956: Vacuum Tubes

- ✓ The first generation of computers used vacuum tubes for circuitry and magnetic drums for memory.
- ✓ They were large in size, occupied a lot of space and produced enormous heat
- ✓ They were very expensive to operate and consumed large amount of electricity.
- ✓ Sometimes the heat generated caused the computer to malfunction.
- ✓ First generation computers operated only on machine language.
- ✓ Input was based on punched cards and paper tape, and output was displayed on printouts.
- ✓ First generation computers could solve only one problem at a time.
- ✓ The Universal Automatic Computer (UNIVAC) and the Electronic Numerical Integrator and Calculator (ENIAC) are classic examples of first-generation computing devices.

Second Generation - 1956-1963: Transistors

- ✓ The second generation of computers witnessed the vacuum tubes being replaced by transistors.
- ✓ The transistor was far superior to the vacuum tube, allowing computers to become smaller, faster, cheaper, energy-efficient and more reliable than their first-generation counter parts.
- ✓ The transistors also generated considerable heat that sometimes caused the computer to malfunction.
- ✓ Second-generation computers moved from the use of machine language to assembly languages, which allowed programmers to specify instructions in words.
- ✓ The computers stored their instructions in their memory, which moved from a magnetic drum to magnetic core technology.

HIGHER SECONDARY FIRST YEAR 2 MARK & 5 MARK NOTES

Third Generation - 1964-1971: Integrated Circuits

- ✓ The development of the integrated circuit left its mark in the third generation of computers.
- ✓ Transistors were made smaller in size and placed on silicon chips, which dramatically increased the speed and efficiency of computers.
- ✓ In this generation, keyboards and monitors were used instead of punched cards and printouts.

Fourth Generation - 1971-Present: Microprocessors

- ✓ The microprocessor brought forth the fourth generation of computers, as thousands of integrated circuits were built onto a single silicon chip.

Fifth Generation - Present and Beyond: Artificial Intelligence

- ✓ Fifth generation computing devices, based on artificial intelligence, are still in their developmental stage.
- ✓ Fifth generation computers will come close to bridging the gap between computing and thinking.

2. What is the relationship between software and hardware? OR**Write detail about computer software and their categories?****Software**

Software refers to a program that makes the computer to do something meaningful. It is the planned, step-by-step instructions required to turn data into information.

Hardware

The term hardware refers to all the physical items associated with a computer system. Software is a set of instructions, which enables the hardware to perform a specific task.

Software Categories

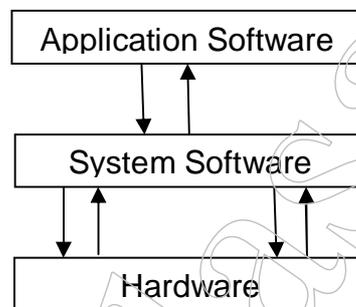
1. System Software
2. Application Software.

System Software

- ✓ System software consists of general programs written for a computer.
- ✓ These programs provide the environment to run the application programs.
- ✓ System software comprises programs, which interact with the hardware at a very basic level.

HIGHER SECONDARY FIRST YEAR 2 MARK & 5 MARK NOTES

- ✓ They are the basic necessity of a computer system for its proper functioning.
- ✓ System software serves as the interface between hardware and the user.
- ✓ The operating system, compilers and utility programs are examples of system software.
- ✓ The most important type of system software is the operating system.
- ✓ DOS (Disk Operating System), Unix, Linux and Windows are some of the common operating systems.
- ✓ The compiler software translates the source program (user written program) into an object program (binary form).
- ✓ Specific compilers are available for computer programming languages like FORTRAN, COBOL, C, C++ etc.

**Application Software :**

- ✓ An Application Software consists of programs designed to solve a user problem.
- ✓ It is used to accomplish specific tasks rather than just managing a computer system.
- ✓ Application software are in turn , controlled by system software which manages hardware devices.
- ✓ Some typical examples are railway reservation system, game programs, word processing software, weather forecasting programs.
- ✓ The commonly used Application Software packages are word processor, spread sheet, database management system and graphics.

HIGHER SECONDARY FIRST YEAR 2 MARK & 5 MARK NOTES

3. Discuss the important features and uses of micro, mini, mainframe and super computers

Based on performance, size, cost and capacity, the digital computers are classified into four different types.

1. Super computers
2. Mainframe computers
3. Mini computers
4. Micro computers.

Super Computers

- ✓ The mightiest computers but at the same time, the most expensive ones are known as super computers.
- ✓ Super computers process billions of instructions per second.
- ✓ In other words, super computers are the computers normally used to solve intensive numerical computations.
- ✓ Examples of such applications are stock analysis, weather forecasting.

Mainframe Computers

- ✓ Mainframe computers are capable of processing data at very high speeds – hundreds of million instructions per second.
- ✓ They are large in size. These systems are also expensive.
- ✓ They are used to process large amount of data quickly.
- ✓ Some of the obvious customers are banks, airlines and railway reservation systems.

Mini Computers

- ✓ The mini computers were developed with the objective of bringing out low cost computers.
- ✓ They are lower to mainframe computers, in terms of speed and storage capacity.
- ✓ Some of the hardware features available in mainframes were not included in the mini computer hardware in order to reduce the cost.
- ✓ Some features which were handled by hardware in mainframe computers were done by software in mini computers.
- ✓ Hence the performance of mini computer is less than that of the mainframe.

HIGHER SECONDARY FIRST YEAR 2 MARK & 5 MARK NOTES

Micro Computers

The micro computers are further classified into

1. Workstations
 2. Personal Computers
 3. Laptop Computers
 4. Palm PCs
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“He knows not he knows not, and he knows not – avoid him

He knows he knows not, and he knows not- teach him.

He knows not he knows, and he knows –awaken him.

He knows he knows, and he knows – follow him. “

Best of Luck Student'S