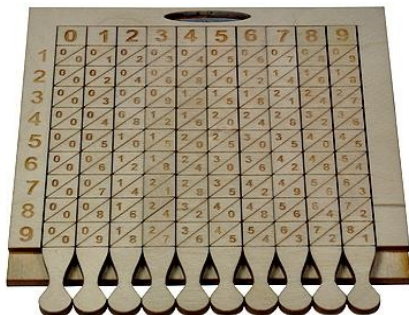


Abacus -

- It is a calculating device to perform basic operation like addition, multiplication, division etc. It is a wooden frame with some beads sliding on wires.
- This device can be used by blind persons also. (diagram on page- 27)

Napier's bones -

- It is a manually operated calculating device created by John Napier of Scotland for calculation of products and quotients of numbers.
- It is a base board with a rim which performs multiplication by repeated addition and division by repeated subtraction.



Pascaline -

- It is mechanical calculator invented by Blaise Pascal for the same purpose of basic mathematical function.
- It performs addition of two numbers directly the value entered is added to the accumulator as it is being dialed in.
- It was made up of metal with rings that are use to dial, so it was very costly.(Diagram on pg - 27)

Jacquard's Loom -

- This machine was used in textile industry, to produce variety of pattern in textile.
- The punch card used in the jacquard mechanism laid the foundation for modern computer programming. (Diagram on pg - 28)

Mark-I -

- The Automatic Sequence controlled calculator Mark -I was the first operating machine that could execute long computation automatically.
- It was a project developed by Dr Howard Aiken and IBM engineers.
- The first program was initiated on 29th March 1944.
- It was very huge in size. (Diagram on pg - 28)

Different Generations of Computers

| Generation | First | Second | Third | Fourth | Fifth |
|-----------------------------|--------------------------|---------------|---------------------|--------------------------------------|-------------------------|
| Technology used | Vacuum tubes | Transistors | Integrated circuits | Microprocessor | Artificial Intelligence |
| Duration | 1940-1956 | 1956-1964 | 1964-1971 | 1971-present | Present and beyond |
| Input/output devices | Punch card | Punch card | Keyboard/ Monitors | Hard disk, cd,dvd and mouse/Monitors | Voice |
| Programming language | Low level (machine code) | Low level | High level | High level | High level |
| Examples | UNIVAC | 1BM 700 | ALTAIR | PERSONAL COMPUTERS | ROBOTS |

Study the other characteristics of each generation. (pg no-.29 - 30)

EXERCISES (pg 33)

(Note the question answer in the copy)

1. Answer the following questions.

a. Which was the first calculating device made by man? Where was it invented and by whom?

Ans) Abacus was the first calculating device made by man.

It was first invented in Mesopotamia by Babylonians. Later it was designed by Egyptians and further developed by Chinese.

b. Who was Charles Babbage? Why is he known as the Father of Computer?

Ans) Charles Babbage was a Mathematician and mechanical engineer born in London.

He is known as the "Father of Computer" for his contribution in inventing the first mechanical computer that laid the foundation for development of modern computers.

He also invented the Difference Engine and Analytical engine.

c. What were the main difference between the First Generation and Second Generation?

Ans

| First Generation | Second Generation |
|---|---|
| 1. Vacuum tubes were used for circuitry | 1. Transistors replaced vacuum tubes in circuits |
| 2. They were very large in size and expensive | 2. They became faster, smaller and cheaper. |
| 3. Magnetic drums were used for storage | 3. Magnetic disk was used for storage. |
| 4. They used to consume lots of energy. | 4. They are more energy efficient than first generation |

d. What primary changes did the third generation computers bring about in the development of computers?

Ans. The primary changes of third generation computers are.

1. They used Integrated circuits which reduced the size of computers.
2. Operating System was first introduced.
3. Keyboards and monitors were used as input and output devices.
4. Transistors were small in size which reduced the efficiency of computers.

e. Name four people who with their inventions created a major impact in the early history of computers.

Ans

| Famous persons | Inventions |
|--------------------|---|
| 1. John Napier | Napier's Bones |
| 2. Blaise Pascal | Pascaline |
| 3. Jacquard's loom | Punched Cards |
| 4. Charles Babbage | Difference Engine and Analytical engine |

4. Name the device

- a. It was the first mechanical computer.
- b. It revolutionized the weaving industry in 1801
- c. It was the first mechanical calculating device
- d. It was the first calculating device powered by steam
- e. It was first electro- mechanical general purpose computer

Analytical Engine

Jacquard's Loom

Pascaline

Difference Engine

Mark I

HOME WORK – Solve question no 2, 5 and 6 in copy

Collect the information about the following personalities

1. Bill Gates
2. Steve Jobs

**** Children are requested to go through the notes thoroughly and write down the notes and questions - answers in your copies*****