# PNS SCHOOL OF ENGINEERING & TECHNOLOGY

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INTERNAL ASSESSMENT EXAMINATION-2022(1ST SEMESTER)

## Subject:Th-1(b)-Computer Application

## Question & Answer

## 1(a) What is software ?

**Ans:** Software is a set of program that instruct the hardware to perform any job .

Ex: Ms office,Google chrome,Facebook,Etc.

## (b) What is System software ?

- System Software is a set of programs that manage the resources of a computersystem.
- System Software is a collection of system programs that perform a variety of functionssuch as -
  - File Editing
  - Resource Accounting
  - I/O Management
  - Storage, Memory Management access

( c ) What is the major component of $2^{nd}$ generation computer ?

Ans: The major component of $2^{nd}$ generation of computer is Transistor .The use of Transistor technology the $2^{nd}$ generation computer smaller,chipper & more efficient and more productive as compare  to $1^{st}$ generation computer.

(d) Difference between Data & Information ?

Ans: **Data :** Data are the facts from which we can drawn a conclusion.

**Information:** Processed data is called information.

### ( e ) What is ALU ?

Ans:  Stands for "Arithmetic Logic Unit." An ALU is an integrated circuit within a CPU or GPU that performs arithmetic and logic operations. Arithmetic instructions include addition, subtraction, and shifting operations, while logic instructions include boolean comparisons, such as AND, OR, XOR, and NOT operations.

## 2(a) Discuss about the generation of computers? Explain the key features of computers of each generation?

Ans. A computer is an electronic device that manipulates information or data. It has the ability to store, retrieve, and process data.

Nowadays, a computer can be used to type documents, send email, play games, and browse the Web. It can also be used to edit or create spreadsheets, presentations, and even videos. But the evolution of this complex system started around 1940 with the first Generation of Computer and evolving ever since.

There are five generations of computers.

**FIRST GENERATION**

# Features:

- 1946-1959 is the period of first generation computer.
- J.P.Eckert and J.W.Mauchy invented the first successful electronic computer called ENIAC, ENIAC stands for ¯Electronic Numeric Integrated and Calculator‖.
- Few Examples are: ENIAC, EDVAC, UNIVAC, etc.

**Advantages:**

- It made use of vacuum tubes which are the only electronic component availableduring those days.
- These computers could calculate in milliseconds.

**Disadvantages:**

- These were very big in size, weight was about 30 tones.

- These computers were based on vacuum tubes.

- These computers were very costly.

**SECOND GENERATION**

# Features:

- 1959-1965 is the period of second-generation computer.

- Second generation computers were based on Transistor instead of vacuum tubes.
- Few Examples are: Honeywell 400, IBM 7094, etc.

**Advantages:**

- Due to the presence of transistors instead of vacuum tubes, the size of electron component decreased. This resulted in reducing the size of a computer as compared to first generation computers.
- Less energy and not produce as much heat as the first generation.
- Assembly language and punch cards were used for input.

**Disadvantages:**
- A cooling system was required.
- Constant maintenance was required.
- Only used for specific purposes.

**THIRD GENERATION**
# Features:
- 1965-1971 is the period of third generation computer.

- These computers were based on Integrated circuits.
- IC was invented by Robert Noyce and Jack Kilby In 1958-1959.
- IC was a single component containing number of transistors.
- Few Examples are: PDP-8, PDP-11, ICL 2900, etc.

**Advantages:**
- These computers were cheaper as compared to second-generation computers.
- They were fast and reliable.
- Use of IC in the computer provides the small size of the computer.

**Disadvantages:**
- IC chips are difficult to maintain.
- The highly sophisticated technology required for the manufacturing of IC chips.
- Air conditioning is required.

## FOURTH GENERATION

**Features:**
- 1971-1980 is the period of fourth generation computer.
- This technology is based on Microprocessor.
- A microprocessor is used in a computer for any logical and arithmetic function tobe performed in any program.
- Graphics User Interface (GUI) technology was exploited to offer more comfort tousers.
- Few Examples are: IBM 4341, DEC 10, STAR 1000, etc.

**Advantages:**
- Fastest in computation and size get reduced as compared to the previous generation of computer.
- Heat generated is negligible.
- Small in size as compared to previous generation computers.

**Disadvantages**:
- The Microprocessor design and fabrication are very complex.
- Air conditioning is required in many cases due to the presence of ICs.
- Advance technology is required to make the ICs.

## FIFTH GENERATION

**Features:**

- The period of the fifth generation in 1980-onwards.
- This generation is based on artificial intelligence.

- The aim of the fifth generation is to make a device which could respond to natural language input and are capable of learning and self-organization.
- This generation is based on ULSI (Ultra Large Scale Integration) technology resulting in the production of microprocessor chips having ten million electronic components.
- Few Examples are: Desktop, Laptop, etc.

**Advantages:**

- It is more reliable and works faster.
- It is available in different sizes and unique features.

- It provides computers with more user-friendly interfaces with multimedia features.

**Disadvantages:**

- They need very low-level languages.

## 2.(b) Discuss about the evolutionof computers.Give suitable examples of various computers.

Computer evolution refers to the change in computer technology right from the time computers were first used to the present. As computing evolves to higher system levels, so its design also changes, from technical to socio-technical design.
The series of the evolution of computers are given below.

- ✓ Abacus
- ✓ Pascaline
- ✓ Difference engine
- ✓ Punched card equipment
- ✓ UNIVAC - I

**Abacus**

- The present day computers are a result of an evolutionary process which started wayback in 500 B.C. when Egyptian used a machine which is an early form of Abacus.
- However the present form of Abacus is attributed to the Chinese and Japanese.
- This is a machine, which was used for addition, subtraction, multiplication and divisionoperation.

**Pascaline**

- In 1645 a device known as Pascaline was invented by French mathematician BlaisePascal.
- The machine was also used per addition and subtraction purpose.
- The device was operated by dialing a set of wheels.
- In 1671 Leibniz improved on Pascal's adding machine and invented the Leibniz's Calculator.

**Difference engine**

- In 1822 Charles Babbage invented a Difference Engine.
- The purpose of this device was to calculate the roots of polynomial equations andprepare astronomy table for the British Navy.
- He upgraded this to, invent an Analytical engine, which could store program instructions initially coded on punched cards and subsequently shared internally.
- Therefore Charles Babbage is known as the father of computers.

**Punched card equipment**

- In 1890 Dr. H. Hollerith developed punched card equipment.
- This equipment read the holes punched in the card and mechanically performed thestatistical analysis.

**UNIVAC**

- In 1945 John Von Neumann first gave the idea of sharing the same internal memory for storing both data and instruction, which was subsequently adopted in every computer organization.
- On this principle subsequently Universal Automatic Computer (UNIVAC-1) was invented