

**SANT NIRANKARI PUBLIC SCHOOL**

**AVTAR ENCLAVE**

**CLASS-V (EVS)**

**CH-3 (WS - 2)**

**A NATURAL BALANCE**

**WORKSHEET-2**

**Date : 23<sup>rd</sup> Apr'20**

**GENERAL INSTRUCTIONS:**

- 1. Read the content given below carefully.**
- 2. Underline the difficult words and learn them.**
- 3. Answer the following questions based on the content.**

**TYPES OF PLANTS**

**PARASITIC PLANTS:** Plants that takes their nutrition by growing on other plants are called **parasitic plants**.

- ✚ The plants on which the parasitic plants feed are called **host plants**.
- ✚ Parasitic plants attach themselves firmly to the stems or roots of the host plant to absorb nutrients.
- ✚ Mistletoe, Dodder or Cuscuta are examples of parasitic plants.
- ✚ Non green plants like Mushrooms, mosses and some fungi depend on other plants for food.



Dodder or Cuscuta



Mistletoe

**CARNIVOROUS PLANTS:** Plants that get nutrition by eating small animals such as insects, flies, bugs are called **carnivorous or insectivorous plants**.

- ✚ They grow in soil, but lacks some **nutrients** like **nitrogen**. They trap insects to get nitrogen.
- ✚ These plants get energy from Sun but depend on animals only for nutrition.
- ✚ Carnivorous plants digest their prey (hunt) using **enzymes** (a substance that help in digestion.)
- ✚ The pitcher plant, sundew, Venus flytrap are some examples.



Pitcher plant



Venus flytrap

### FOOD FOR ANIMALS

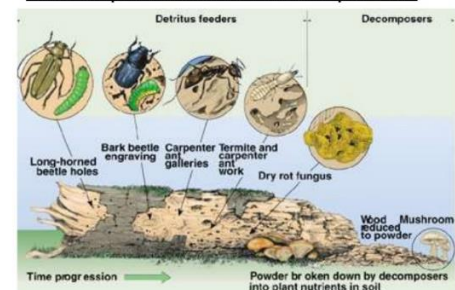
All animals are **consumers** as they depend on plants as well as on other animals for food. Based on kind of food they eat, animals are classified as:

- **Herbivores**- Some animals like cow, buffalo, goat, zebra, horse, elephant eat grass, leaves, fruits or roots. These plant eating animals are called herbivores (herb=plant, vorous=eater).
- **Carnivores**- Some animals like dog, lion, tiger, wolf eat flesh of other animals. These flesh eating animals are called carnivores (carn=flesh, vorous=eater).
- **Omnivores**- Some animals like bear, crows, and human beings, eat plants and animals both. They are called omnivores (omni=all, vorous=eater).
- **Scavengers**-These are the animals that consume dead organisms. Like vulture, eagle, hyenas etc. **Scavengers** plays an important role in the **ecosystem** by consuming dead animals or plants. They are also called **environment cleaner**.
- **Decomposers**- Some organisms obtained their food by consuming dead and decaying plants and animals. They are called decomposers. Bacteria, fungi, and earthworms are examples.

All plants and animals are **recycled** in nature by **decomposers** that helps to release nutrients from them into the soil, which is again consumed by plants.



### The Importance of Decomposers



### LET'S PRACTICE

Q1. Answer the following questions.

- a. What are parasitic plants?
- b. Why scavengers are called environment cleaner?
- c. Who helps to recycle nutrients into the nature?
- d. What carnivorous plants use to digest their prey?

Q2. Name the following.

- a. Two herbivores \_\_\_\_\_, \_\_\_\_\_
- b. Two parasitic plants \_\_\_\_\_, \_\_\_\_\_
- c. Two carnivorous plants \_\_\_\_\_, \_\_\_\_\_
- d. Two omnivores \_\_\_\_\_, \_\_\_\_\_
- e. Two carnivores \_\_\_\_\_, \_\_\_\_\_

**SANT NIRANKARI PUBLIC SCHOOL**

**AVTAR ENCLAVE**

**CLASS-V (EVS)**

**CH-3 (WS - 3)**

**A NATURAL BALANCE**

**Date : 25<sup>th</sup> Apr'20**

**GENERAL INSTRUCTIONS:**

- 4. Read the content given below carefully.**
- 5. Underline the difficult words and learn them.**
- 6. Answer the following questions based on the content.**

### **INTERDEPENDENCE OF LIVING ORGANISMS**

When two or more organism depend on each other is called interdependence.

- Plants depend on animals for carbon dioxide, insects, birds (help in seed dispersal), earthworms (help to make the soil fertile).

- Animals and human beings depend on plants for food and oxygen. Some animals depend on plants for shelter.
- Human beings also depend on plants for other needs like clothes and medicines.
- Plants are sources of non- renewable resources like coal, petroleum and wood.

### FOOD CHAIN

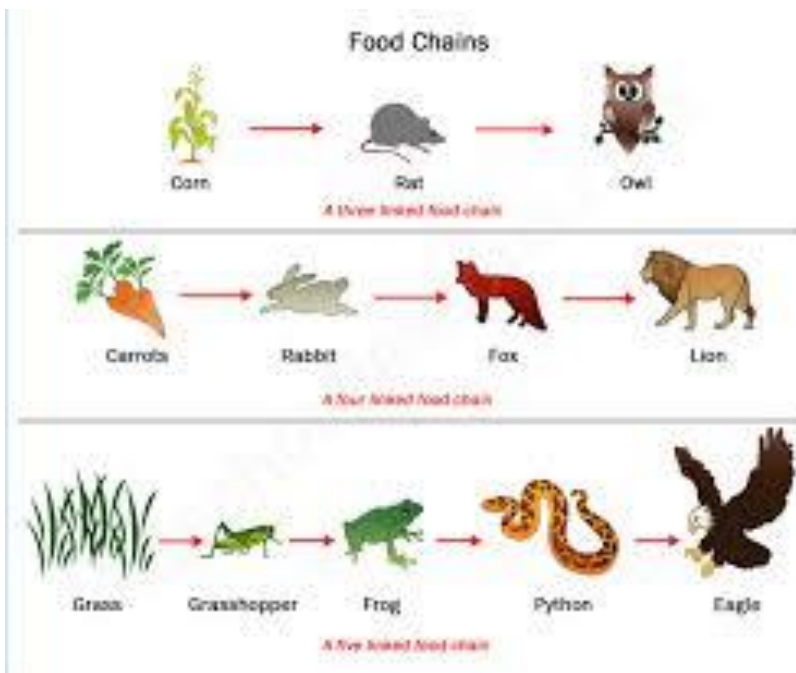
A food chain is a chain formed when plants are eaten by animals and then these animals are eaten by other animals. It shows how energy is passed from Sun to producers, producers to consumers, and from consumers to decomposers.

**Food chain on earth-**

**Grass----> Grasshopper----> Frog---->Snake---->Eagle---->Earthworm**

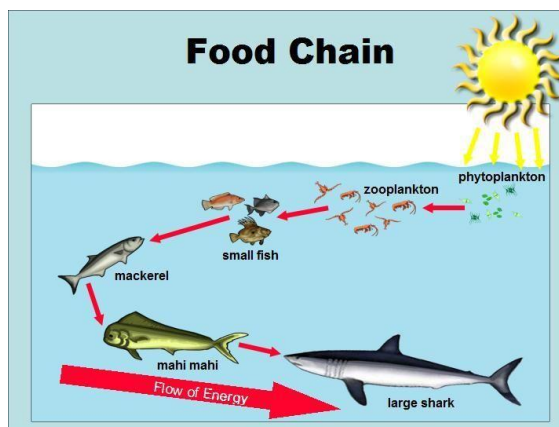
**Food chain on water-**

**Green algae---->Snail---->Fish---->Crane**



**These are different food chains on Earth.**

**This is the simple food chain in Water.**



### FOOD WEB

Different **interconnected** food chains form a **food web**.

- **Plants** are eaten by many **herbivores** like deer, rabbit, cow etc.
- **Herbivores** are eaten by many **carnivores** like lion, tiger, wolves etc.
- **Carnivores** are then eaten by **Scavengers** like eagle, vulture etc.
- Many food chains make a **food web**.

### BALANCE IN NATURE

Food chains and food webs maintain balance in nature in the population of living beings.

Animals, plants, birds and other species are as important as human beings. If the population of one organism increases or decreases, the entire food chain gets disturbed.

### EXTINCTION OF LIVING ORGANISM

Extinct means no longer alive. All organisms on the earth have a unique place in the food chain that helps them contribute to the ecosystem. Many animals and plants are endangered. An endangered species is an animal or plant species that is in danger of becoming extinct, that is, its number is decreasing rapidly. **This happens because of an increase in number of predators, climate change or loss of natural habitats.**

### LET'S PRACTICE

Q1. Answer the following question.

- a. What is a food chain and food web? Explain with the help of an example.
- b. What do you understand by balance in nature?
- c. What are the causes of extinction of plants and animals .

Q2. State true or false.

- a. Crows and vultures are scavengers.
- b. In food chain energy comes from plants.
- c. Producers are at the end of the food chain.
- d. Carnivorous plants digest their prey by using enzymes.
- e. Plants do not makes their own food.

**SANT NIRANKARI PUBLIC SCHOOL**

**AVTAR ENCLAVE**

**CLASS-V (EVS)**

**CHAPTER-4 (worksheet-1)**

**Date: 29 Apr' 2020**

**THE PLANT STORY**

**GENERAL INSTRUCTIONS:**

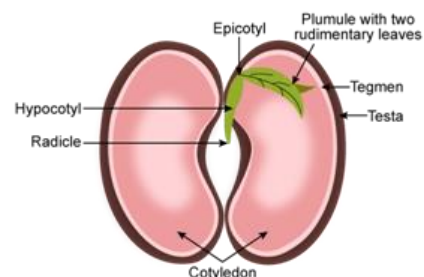
- 1. Read the content given below carefully.**
- 2. Underline the difficult words and learn them.**
- 3. Answer the following questions based on the content.**

**GROWING PLANTS**

All living things grow. Small baby plants become tall plants and trees. Growing plants is important as our life largely depends on them. Most plants are grown from seeds. Flower change into fruits and fruits have seeds inside them.

**STRUCTURE OF A SEED:** A seed has an outer covering called **seed coat or testa**. Its function is to protect the baby plant inside.

- ✚ There is a tiny hole in the seed called **micropyle** through which the seed absorbs water.
- ✚ Each half of a seed is called **seed leaf or cotyledon**. It stores food for the developing baby plant.
- ✚ The baby root is called the radicle and the shoot is called **plumule**.
- ✚ When the seed sprouts, the cotyledons are the first leaves that a plant has.
- ✚ Some plants have one cotyledons while others have two.
- ✚ An **embryo** is a baby plant inside the seed.
- ✚ It grows into a new plant.

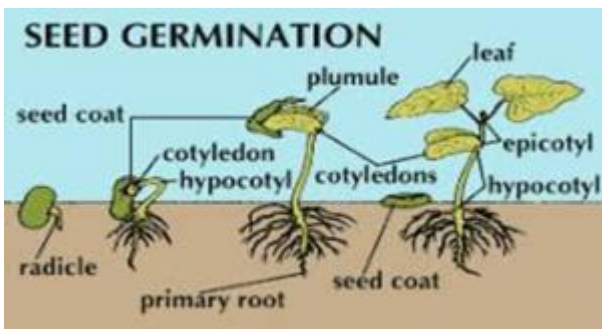


**Structure of a seed**

**SEED GERMINATION:** If the seed get right amount of water, air, sunlight and warmth, they produce a baby plant called **seedling**.

- ✚ The process by which a seed grows into a baby plant or a seedling is called **germination**.
- ✚ Water helps to soften the seed coat and changes the food stored in cotyledons into a soluble substance. **Baby plant uses this soluble substance to grow.**
- ✚ Warmth from sunlight speeds up the growth and air provides energy to **sprout**.
- ✚ Some seeds remain **dormant** i.e. they do not germinate until the growing conditions are suitable.

### **PROCESS OF SEED GERMINATION**



### **LET'S PRACTICE**

Q1. Fill in the blanks.

- a. The \_\_\_\_\_ stores food for the baby plant. (Seed coat/ cotyledon)
- b. A tiny hole through which seed absorbs water. (micropyle/ radicle)
- c. The part of plant that grows above the ground is called \_\_\_\_\_.  
(Root/ shoot)
- d. Seed leaves are known as \_\_\_\_\_. (cotyledon/Embryo)

Q2. Answer the following questions.

- a. What does a seed need to germinate?
- b. Explain the process of germination of seed.

SANT NIRANKARI PUBLIC SCHOOL  
AVTAR ENCLAVE  
CLASS – V  
SUBJECT – ENGLISH (GRAMMAR)  
WORKSHEET – CH 2 THE SENTENCE  
WEEK -4

GIVEN DATE: 24/4/2020

SUBMISSION DATE: 25/4/2020

- **A sentence is a group of words that makes complete sense.**
- Example – i. Vivek is a good singer.  
ii. I don't want to visit the museum.
- It begins with a capital letter.



- It ends with a full stop(.) or question mark (?) or an exclamation mark (!)

Q1. Rewrite the words in proper order and make complete sentences. Put capital letters and full stops where required.

a) garden rose is this a - \_\_\_\_\_

b) my homework I finished have- \_\_\_\_\_

c) is in her Jyoti room- \_\_\_\_\_

d) will wait you for I - \_\_\_\_\_

e) the shining sun is - \_\_\_\_\_

f) is suffering he from fever - \_\_\_\_\_

g) mother very well my cooks - \_\_\_\_\_

SANT NIRANKARI PUBLIC SCHOOL

SUBJECT: MATHS

CLASS V

Week- 4

Submission date:

30.4.2020

WORKSHEET: 4

I Write the ROMAN NUMERALS for each of the following :

(a) LXXI

(b) XCVI

(c) LXXVIII

(d) CX

(e) DCX

(f) CMXVI

(g) DCCCII

(h) LIX

II. Fill in the blanks using Roman Numerals

(a) June has \_\_\_\_\_ days

(b) There are \_\_\_\_\_ days in a year

(c) A day has \_\_\_\_\_ hours

(d) A year has \_\_\_\_\_ months

संत निरंकारी पब्लिक स्कूल  
अवतार एन्कलेव

कक्षा - पाँचवीं  
विषय - हिंदी (लेखन)

संवाद लेखन

Date:

Page No.

Quiz date: 04/5/2020

submission date: 06/5/20

प्र०-1 आपके दाँत में दर्द है। आप डॉक्टर के पास जाते हैं। आपका डॉक्टर से क्या संवाद हुआ, लिखिए।

प्र०-2 मेघा और आइसक्रीम वाले के बीच हुए संवाद को संचय कर लिखिए।

शंत निरंकरि पब्लिक स्कूल

अवतार एन्फोल्ड

कक्षा - पाँचवी

विषय - हिंदी

Date: 18/04/2020

Page No.

पाठ - राख की रूसी

प्र०-1 पाठ में नीचे दिए गए किस किस पात्र के लिए अयुक्त है।

चालाक, मोला, हाजिरजवाब, दुरबी,  
सीधा-सादा, मझूर

लोनपो गार

बेटा

1.

1.

2.

2.

3.

3.

प्र०-2 विपरीत शब्द लिखिए।

(i) चालाक

(ii) मुश्किल

(iii) सीधा -

(iv) विजय

(v) दुरबी

(vi) पसंद

प्र०-3 विशेषण को सही विशेष्य के साथ मिलाइए

(i) चालाक

वीरवल

(ii) हाजिरजवाब

लोनपोगार

(iii) हाथियार

बेटा

(iv) मोला-माला

लौमडी

प्र०-4 पाँच पालतू पशुओं के नाम और जिनसे प्राप्त वस्तुओं के नाम लिखिए।

पालतू पशु

प्राप्त वस्तु

(i)

(i)

(ii)

(ii)

(iii)

(iii)

(iv)

(iv)

(v)

(v)

Assignment given date: 18/04/2020

Assignment submission date: 19/04/2020

416 - आषा  
कक्षा - पाँचवी

- प्र०-1 आषा कैसे कहते हैं ?  
प्र०-2 निम्नलिखित वाक्यों में आषा का कौन-सा रूप प्रयोग में आया है - मौखिक या लिखित
- क) निधि कहानी लिख रही है। \_\_\_\_\_  
ख) अहमद समाचार सुन रहा था। \_\_\_\_\_  
ग) दीपा पुस्तक पढ़ रही है। \_\_\_\_\_  
घ) नेता जो आषा पढ़ रहे हैं। \_\_\_\_\_  
ङ) नानी अजन गा रही है। \_\_\_\_\_  
च) श्रीमती सुधा सब्जी खरीद रही है। \_\_\_\_\_  
छ) विद्युति टेलिफोन देख रही है। \_\_\_\_\_

प्र० 3 नीचे दी गई पैदली में कुछ आषाओं के नाम लिखिए। उन्हें हाँटकर उचित को में लिखिए।

दि	रु	ची	नी	क	जा
दी	सी	च	प	अँ	पां
सं	रु	फु	त	ग	जी
म	सिं	धी	मि	रे	ज
श	ल	च	ल	जी	म
ठी	पं	जा	बी	द	न

आरु की आषारं  
हिंदी

अन्य देशों की आषारं

Assignment given date : 21/04/2020  
Assignment submission date : 21/04/2020

SANT NIRANKARI PUBLIC  
SCHOOL AVTAR ENCLAVE  
PASCHIM VIHAR CLASS – V

CHAPTER – 1  
(EVOLUTION OF  
COMPUTERS)

DATE : 27/04/2020

SUBMISSION DATE: 30/04/2020



# Evolution of Computers



## Targeted Skill Set:

**Identify computer types, features and limitations. Aware of latest advancements in computing.**

## Objectives:



Dear student, by the end of this chapter, you will be able to:

- Understand brief history of computers.
- List at least 3 features of 5 generations of computers.
- List 7 characteristics of computers.
- List limitations of computers.
- Understand and appreciate some latest advancements in computing.

There had been many contributors to the development of computers. Of course, this development did not happen at once, there were various stages across several years till today where we have computers so small that they fit in our palms. But earlier, computers were not that compact and smart. Let us briefly discuss the different stages in the development of computers.

## Evolution of Computer

The term 'Computer' came from the word 'compute', which means 'to count' or 'to calculate'. Early men used their fingers, stones and bones to count.

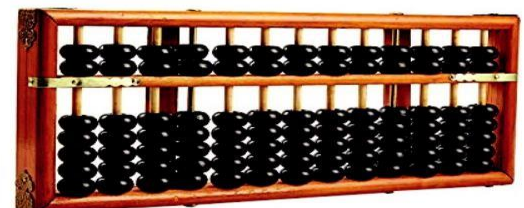
### Abacus (5000 years ago)

Abacus was the first calculating device invented by the Chinese around 5000 years ago. The working of this device was based on the movement of its beads up and down along wooden or metal rods.



IntelliBee 

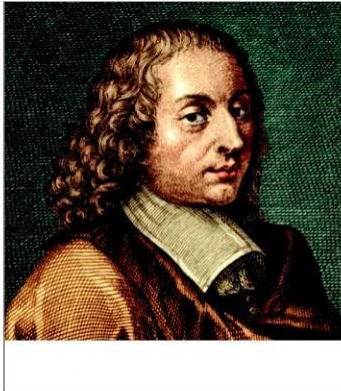
The three most popular abacuses were- Chinese abacus, Japanese abacus and Russian abacus.



Chinese Abacus

## Napier's Bones (1550-1617)

Napier's Bones was invented by John Napier (1550-1617), a Scottish mathematician and scientist. Napier's bones were multiplication tables written on strips of wood or bones. This invention helped in multiplying, dividing, taking square roots and cube roots. There are 9 different 'bones' or strips with numbers marked on them.



## Pascaline (1642)

The Pascaline, invented by Blaise Pascal (France) in 1642, was a mechanical calculator. This device was invented for the purpose of addition and subtraction, via turning discs at the bottom of the device.

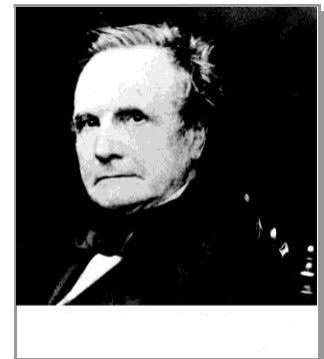
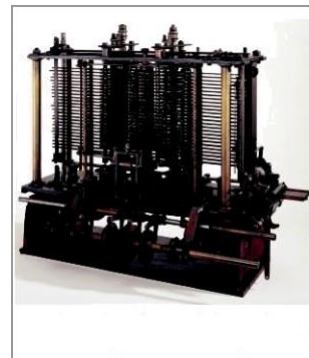
After cranking the handle the answers appeared on a window.



*Pascaline*

## Analytical Engine (1833)

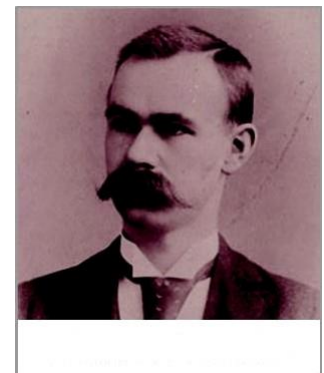
The Analytical Engine, an important step in the history of computer, was the fully-automatic calculating machine, designed by Charles Babbage in 1833. He is known as "the father of modern computer". This machine was designed to perform complex mathematical calculations.



## Tabulating Machine (1890)

In 1890, Herman Hollerith invented the tabulating machine to process the data (for U.S. Census). This device could automatically read information which had been punched on the card. In later years, Hollerith's machine became very useful for wide varieties of statistical applications. In February 1924, Hollerith's company

changed its name to International Business Machines, or IBM.









## Skill Practice

Make a project file on 'History of Computers' by collecting pictures and information about early computers.

## Generations of Computers

Now-a-days, computers are being used at different places. The volume of work, features, functionality, etc. varies from place to place. So, it was required to develop different types of computers.

Generation refers to the time period when a computer is being developed. After each and every generation, the technology of computer advanced significantly to fulfill human needs. Let us look at distinct generations of computers.

### First Generation of Computers (1940 - 1956, Vacuum Tubes)

The first generation computers used vacuum tubes for circuit and magnetic drums for memory and were as big in size as a room.

Features of first generation of computers:

- The first generation computer used the vacuum tubes.
  - : It was expensive, consumed large amount of electricity and generated a lot of heat.
- This computer used magnetic drums for memory and relied on machine language to perform operations.
- Input was based on punched cards and paper tape and the output was displayed on printouts.
- :- The UN I VAC (UN IVERS at Automatic Com puter) and ENIAC (Electronic Numerical Integrator And Calculator) are the examples of first generation computers.

For example, Howard Aiken's Mark I (1944). Maunchly and Eckert's ENIAC (1946).



## Second Generation of Computers (1956 - 1963, Transistors) @

Features of second generation of computers:

- ❖ Transistors replaced vacuum tubes in the second generation of computers.
- It was smaller, faster, cheaper, more energy-efficient and reliable than the first generation computers.
- .- Second generation computers used symbolic or assembly languages for processing.
- High-level programming languages were also being developed at this time, such as COBOL and FORTRAN.
- Magnetic cores were used as primary memory, magnetic tapes and disks as secondary storage devices.

For example, IBM 1401, PDP-1.

*Tfa 5rotor as d Second Generation Computers*

## Third Generation of Computers (1964 - 1971, Integrated Circuits)

Features of third generation of computers:

- Transistors were miniaturized and placed on silicon chips, called Integrated Circuit (IC), which increased the speed and efficiency of the computers.
- In this generation, the user interacted through keyboards, monitors and an interface called Operating System (it allowed the device to run different applications at one time).
- This was smaller and cheaper than its predecessors.
- ❖ For example, PDP-8, PDP-11, ICL 2900, IBM 360 and IBM 370.



*IC and Third Generation Computers*

## Fourth Generation of Computers (1971 - present, VLSI Microprocessor)

The microprocessor brought the fourth generation of computers, as thousands of integrated circuits were built into a single silicon chip. In the world of personal computers, the terms microprocessor and CPU are used interchangeably.

Microprocessors also control the logic of almost all digital devices, from clock, radios to fuel-injection systems for automobiles.

Features of fourth generation of computers:

- The microprocessor is the basic component of fourth generation of computers, as thousands of integrated circuits are built into a single silicon chip (Integrated Chip) called Very Large Scale Integration (VLSI).
- The computers can be placed on small tables.
- Computers can be linked together to form networks.
- ❖ This computer uses Graphical User Interface (GUI) based operating system (operations or functions can be easily performed by mouse or keyboards).



For example, IBM- PC, Apple- Macintosh.

### Fifth Generation of Computers (Present and Beyond, Artificial Intelligence)

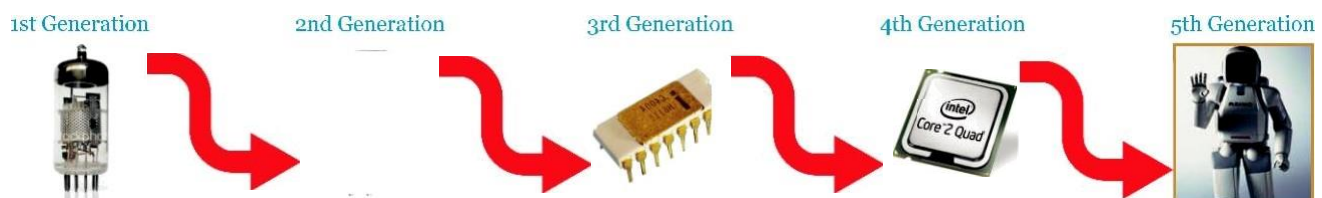
In this generation, researches are focused on developing “thinking computers or smart computers” known as Artificial Intelligence (AI). Some artificial intelligence applications are in use now-a-days, such as voice or face recognition, thumb impression recognition, robots, etc. Goal of fifth generation computing is to develop devices that respond to natural languages input and are capable of self-learning and self- organization.

Features of fifth generation of computers:

- :- Parallel processing technology is used in these computers.
- These computers use superconductors in circuitry.
- :- These are used in speech recognition.
- Main focus is on artificial intelligence.



The major technology changes in the generations of computer.



*Vacuum Tube*

*Transistor*

*Integrated Circuit*

*Microprocessor*

*Artificial Intelligence*

# Characteristics of Computers

Today, computers can perform most of the tasks quickly and accurately saving a lot of time and efforts. Computers work for longer hours without getting tired and store a lot of data. Let us see the characteristics of computers that make them the most revolutionary machine of this age.

## 1. Computers are fast! (Speed)

Computers *think* in milliseconds. That means, processor of a computer can perform billions of calculations in a second.



IBM's Deep Blue supercomputer could think 200 million positions of chess pieces in one second.



## 2. Computers don't goof-up! (Accuracy)

Computers are accurate in calculation however, their accuracy depends on the accuracy of input. This means, computers will only give incorrect output if input is incorrect. This is called Garbage In Garbage Out (GIGO).

## 3. Computers are efficient! (Versatile)

Computers are capable to perform a variety of tasks and at the same time. This is called their versatility. For example, you can play a game on computer while it is playing music, printing a multi-page document and downloading a file.

## 4. Computers are tireless! (Diligent)

Computers work for longer hours without getting tired. They do not get bored doing the same task again and again. Ability to perform repetitive task for longer duration is called diligence. For example, computers working as web servers over the internet work constantly for days.

## 5. Computers store a lot of data! (High storage capacity)

Computers store bulk data. A common micro-computer can hold data in Tera Bytes. Even a simple handheld computer has storage capacity in Giga Bytes.

## 6. Computers are automatic!

There are several tasks which computers can perform automatically as a routine. For example, computers in a packaging unit control entire process without human intervention. Another example is taking a multiple pages printout. Once command is given, computer can print pages without assistance.

## 7. Computers are programmable!

For the tasks that need to be done regularly, the set of instructions is fed into the computer once and then computers execute these instructions in sequence. This set of instructions is called *program*. To run several instructions again and again, we just need to run the program. For example, calculating the grade for all students, a computer program is used, to control the traffic, a *traffic control* program runs on the computers that control the traffic.

## Limitations of Computers

While computers offer remarkable benefits, they have certain limitations also. Let us have a look at them.

### 1. Computers do not have self-intelligence

Computers perform exactly as the instructions are fed to them. They cannot figure out situation on their own. They are unable to take their own decisions.

### 9. Computers cannot learn

Computers are not able to retain the knowledge and use it further just like we humans do. Computers just store the data.

### 3. Computers cannot express emotions

Computers do not react to the situations. The warnings and errors they display are the part of the programs they run. They do not have emotions and feelings.

### 4. Computers need human care

Computers need to be maintained by human beings. They will get spoilt or malfunction if humans do not take good care of them.

### 5. Computers cannot replace human processes entirely

Computers are automatic but up to some extent only. As on date, computers are mere tools to accomplish tasks accurately, faster and efficiently but they are not reliable completely. Still, many computer systems need monitoring and control by humans to work.



Today, the field that is trying to make computers and machines which can learn and think is called Artificial Intelligence.

# Artificial Intelligence-A Quick Introduction

The term Artificial Intelligence was first coined by John McCarthy in 1955.

According to McCarthy: “AI is the science and engineering of making intelligent machines.”

In plain and simple words, the ability of a machine to think and learn is called artificial intelligence.

## What is Human Intelligence?

Intelligence is a process that evolves by the time and has practically no limit. Human intelligence is the combination of the following traits:

**Perception:** Humans perceive their surroundings with their sensory organs. A machine can have artificial sensory organs like cameras, scanners, photosensors for light, thermosensors for temperature etc. to picture and understand the surroundings. Think of a robot or machine designed to move in a closed area like office or factory, more complex environments are railway platforms ñ airports and most complex of them is a busy road.

**Learning:** Humans learn in many ways and retain the learning by practice. Getting machines learn and remember is quite challenging. Machines are being developed to learn by trial and error. Generalised learning is difficult as it demands application of learning in various situations by using previous knowledge and experience.

**Problem Solving:** In a simple situation, a machine can be programmed into finding and applying the possible steps of solution to achieve a set goal. Machine should be able to analyse and update its algorithm to recognize similar situation and apply previously learnt solution. This is what AI is trying to achieve.

**Reasoning:** Logical reasoning is the distinct characteristic of human brain. Hardest challenge in AI is to develop machines that are able to apply logic and reason through critical thinking.

**Language:** Learning any language is a time taking and complex process. AI based voice response systems and chat bots etc. are being developed in a restricted application area but there is still a lot needs to be done.

## Applications of Machine Learning

Predictions about weather conditions, disease outbreaks. success of crops, results of exams, sales, accidents, customer preferences, customer response to the products are some applications of AI. Other applications are face recognition, gene finger printing, fingerprints analysis, voice recognition, expert systems to consult in various fields like medicine, education, design, constructions, customer service, travel, sales, defense, finance and banking.

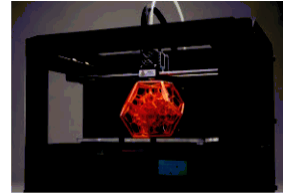


# Latest Advancements in Computing

With every passing minute, there is an innovation in the field of computers. Let us learn about some interesting major advancements in the field of computing:

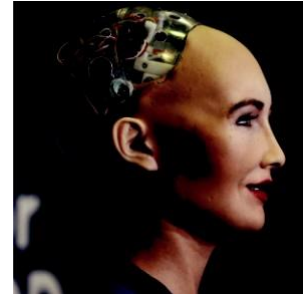
## 3D Printing

Amazing 3-D printers can print parts of machines, appliances and other things. Computers can create 3D design and 3D printers print it. Today, several big companies are using 3D printing in manufacturing, design and construction etc.



## Artificial Intelligence

It is that field of computer science which deals with making computers and machines that can learn and think like humans do. AI is expected to revolutionise every field of science. Machines that can recognise faces and patterns among thousand, machines which serve as expert systems in medical and other fields are in making.



## Internet of Things (IoT)

Apart from computers, imagine all the appliances like refrigerator, vehicles, washing machines, security systems, your wrist watch etc. are able to *talk* to each other! In future, you will be able to control appliances through internet. The technology is called IoT.

## Cloud Computing

Cloud is a network of devices and software that is controlled by powerful computers and they all work together to provide various online services like banking. Users can access services on cloud from anywhere, through any device without installing them on their computer.

## Virtual Reality

This amazing technology has been around for past few years. Users can be a part of what they see. For example, roaming in a virtual 3D museum actually feeling the surroundings, flight simulator for trainee pilots, 3D historical places for students etc.



## Predictions and Analytics

Now, more intelligent software and computers are being manufactured which can analyse a huge bulk of data and make predictions which are helpful in future. For

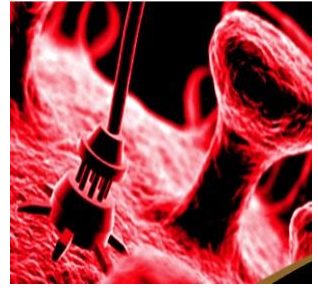
example, how many students will secure distinction marks in next board exams all over

India or how many customers are likely to return a particular product to the company.



## Nano-science

Nano-science or nano technology is the study and application of extremely tiny things in different fields. Imagine, a nano (very tiny) bot is injected in the body that flows in blood stream to the heart and clears the blood clot in it to save the human life. Nano- technology can lead to more powerful yet tiny processors, sensory machines, nano-bots carrying cancer curing drug in the human body. complex micro-operations. tiny gadgets that clean air. water and soil pollution etc.



### I have learnt...

- ◆ Abacus was the first calculating device invented by the Chinese around 5000 years ago.
- ◆ Napier's Bones was invented by John Napier (1550-1617), a Scottish mathematician and scientist.
- ◆ The Pascaline, invented by Blaise Pascal (France) in 1642, was a mechanical calculator.
- ◆ Analytical Engine was the fully- automatic calculating machine, designed by Charles Babbage in 1833.
- ◆ Charles Babbage is known as “the father of modern computer”.
- ◆ In 1890, Herman Hollerith invented the tabulating machine to process data (for U.S. Census).
- ◆ The first generation of computers used vacuum tubes for circuit and magnetic drums for memory.
- ◆ Transistors replaced vacuum tubes in the second generation of computers.
- ◆ The development of the integrated circuit (IC) was the hallmark of the third generation of computers.
- ◆ The microprocessor is thousands of integrated circuits built into a single silicon chip.
- ◆ Computers are fast, accurate, versatile, diligent, automatic, programmable and store bulk data.
- ◆ Computers cannot learn, express feelings, have no experience, need human care and cannot replace humans entirely.



# Exercise

## A. Choose the correct answer.

- \_\_\_\_\_ was the first calculating device invented by Chinese around 5000 years ago.  
a) Napier's Bones       b) Pascaline   
c) Abacus       d) Tabulating machine
- Thousands of integrated circuits were built into single silicon chip called \_\_\_\_\_.  
a) Vacuum Tube       b) LED   
c) Microprocessor       d) AI
- \_\_\_\_\_ is known as the father of modern computer.  
a) Charles Babbage       b) Bill Gates   
c) John Napier       d) Pascaline
- Which of the following is not a characteristic of a computer?  
a) Accuracy       b) Diligence   
c) Self-intelligence       d) Programmable
- Which of the following is not a limitation of computers?  
a) Computers cannot learn       b) Computers lack emotions   
c) Computers need human care       d) Computers are fast

## B. Fill in the blanks.

Program, Assembly, Silicon chip, Versatile, Napier's Bones

- \_\_\_\_\_ contain the multiplication tables written on strips of wood or bones.
- Second generation computers used \_\_\_\_\_ language for processing.
- \_\_\_\_\_ is the basic component of Fourth generation of

computers.

4. A set of instructions is called a \_\_\_\_\_
5. Computers are \_\_\_\_\_ because they can perform a variety of tasks.

**C. Tick (✓) the correct statement and cross (X) out the wrong one.**

1. Computers can learn and take decisions.
2. Computers can work for long hours without getting tired.
3. Artificial Intelligence computers are first generation computers.
4. Transistors replaced Vacuum Tubes in Third generation of computers.
5. Computers do not need humans to take care.

**D. Answer the following questions.**

1. What do you mean by Generation of Computers?

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2. List any 3 characteristics and limitations of computers.

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3. Distinguish between the following:

a) First and Second generation of computers.

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b) Third and Fourth generation of computers.

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4. Briefly describe any 3 limitations of computers.

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**E. Describe the following characteristics of computers very briefly:**

1. Diligent: \_\_\_\_\_

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2. Versatile: \_\_\_\_\_

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3. Accurate: \_\_\_\_\_

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4. Fast: \_\_\_\_\_

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F. Match the following.

Column-I

1. First generation of computer
2. Second generation of computer
3. Third generation of computer
4. Fifth generation of computer

Column-II

- a. PDP-8, ICL- 2900, IBM 360
- b. Artificial Intelligence
- c. NIVAC, ENIAC
- d.. IBM 1401, PDP-I

G. Value based learning through critical thinking and open discussion.

1. What qualities of human beings made them capable of developing such advanced computer technologies?
2. What could be the future of computing? How do you see future with computer technology in next 50 years?



**Mini**

Prepare a small picture based time line of computer generations in MS Word.

Teacher's Signature . \_\_\_\_\_

Teacher's Remark : 0 0000



**Beyond the Book**



