VRML : Acronym "Virtual Reality Mark-up Language" Protocol language which allows 3-D representation of graphics. Chat rooms are increasingly using VRML to represent chatters graphically with avatars.

VPN : Acronym "Virtual Private Network"

W

WAN : Acronym "Wide Area Network" A larger computer network that is geographically dispersed, such as one that stretches across a university campus.

Web Page : A single screen (document) on a Web site.

Webcast- "Webcasting" is a term that describes the ability to use the Web to deliver live or delayed versions of sound or video broadcasts.

Windows- The same term refers to several different things. One is a a graphic way of displaying information on a screen, in windows, that allow you to view the contents of each window as if they are loose pages on a desk that can be shuffled around. Windows are very useful because they can be opened, closed, stacked, sorted, resized, and moved, so you can move very quickly from one application or file to another.

Web Site : The location of published hypertext content. Physically, a Web site can occupy an entire Web server or a part of a server; or it can be spread out among different servers as long as its sections are all linked, directly or indirectly, to the same home page.

WWW : Acronym "World Wide Web" The WWW is a hypermedia retrieval system for information. The newest medium of the Internet. Based on hypertext, the Web provides a quick and easy method of delivering and receiving information files which are read by a browser. The Webs ability to transfer files containing not just text but also graphics, sound, and video makes it the most versatile of all the Internet services.

WYSIWYG : Acronym "What You See Is What You Get" Pronounced "wizziwig," it is a generic term meaning what you see on your screen is what is going to print out on your printer.

WLAN : Acronym "Wireless Local Area Network" In a wireless local area network (WLAN), an access point is a station that transmits and receives data (sometimes referred to as a transceiver).

Y

Yahoo : A popular search engine used to index the web.

Z

Zine : Electronic magazines, published on the Internet.

GENERAL COMPUTING TERMS

Information processing is the organisation, manipulation and distribution of information. As these activities are central to almost every use of computers, the term is in common use to mean almost the same as 'computing'.

Information Technology (IT) *including : ICT (Information and Communication Technology)* is the application of appropriate (enabling) technologies to information processing.

Telecommunications is a general term describing the communication of information over a distance. The method of communication is normally via a cable, wire or *fibre optic.*

Embedded system is the use of a **computer** system built into a machine of some sort, usually to provide a means of control. The **computer** system is generally small, often a single micro-processor with very limited functions. Examples are electronic washing machines, video recorders, burglar alarms and car engine management systems.

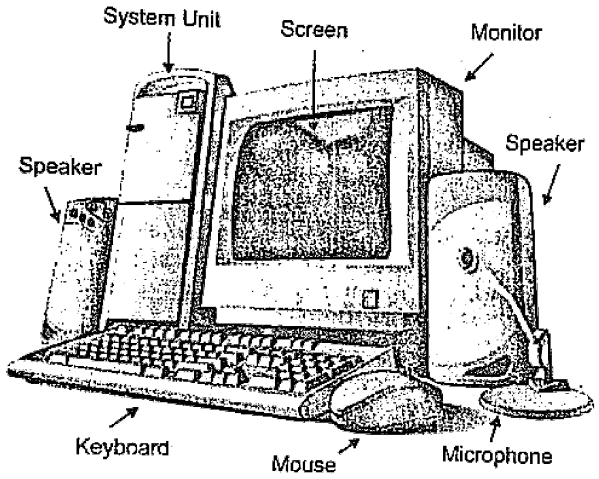
Facsimile transmission (fax) *including: fax machine, fax groups, fax modem* is the use of regular voice-quality telephone lines to send copies of documents, which may include drawings as well as text.

(a) A ***fax machine*** is connected to the telephone system in order to send and receive copies of the transmitted documents. The sender inserts the document into their fax machine and dials the number of the receiving machine. The sending machine scans the paper on a line-by-line basis and transmits the resulting information to the receiving machine. The receiving machine re-creates the document using photocopier technology (for this reason, many fax machines can also operate as photocopiers).

(b) A ***fax modem*** is a special type of *modem* that allows a **computer** connected to a telephone line to send faxes directly. It does not need to produce a paper copy first, and when a fax is received the **computer** operator can process it.

CHAPTER 3 Introduction to Concept of Computers

We are living in the computer age today and most of our day to day activities cannot be accomplished without using computers. Sometimes knowingly and sometimes unknowingly we use computers. Whether we have to withdraw money from the **ATM (Automated Teller Machines retranslated as Any Time Money)**, publish a newsletter, drive a motorbike, design a building or even a new dress, go to a grocery shop and buy from cookies to tyres for our car- all involve computer in one way or the other.



We are breathing in the computer age and gradually computer has become such a dire necessity of life that it is difficult to imagine life without it. Computer is affecting every sphere of our life - be it government, business, education, legal practice, entertainment, defence or home - Computer has become an indispensable and multipurpose tool.

Whereas Supercomputers can forecast weather, embedded computers make smart devices like washing machines that beep when washing is complete or the automobiles that give you warning before breaking down.

NEED FOR COMPUTER LITERACY & KNOWLEDGE

Computers have made us dependent upon them. We expect them to be present at every place: be it the reservation counter, the microwave cooking or driving us. Now computers have moved into our society. So rapidly, one needs, at least the basic computer skills to pursue one's career goals and function effectively and efficiently. We can say that computer literacy is the need of today and a voice of tomorrow to survive in the fast changing world of computers.

For most of the people computer literacy is restricted to using the keyboard for typing a document or making use of it for the calculations. But this is not enough. One must know the fundamental concepts about what computers constitute of and how do they work. The lack of knowledge sometime leads to getting into great troubles. Lack of knowledge can cause mistakes while using the computer. Lack of knowledge also causes some fear in the people. This fear is termed as CYBERPHOBIA. This is not a technical term, it is just used for the people who are scared of using the computers.

Moreover, the computer as a subject has became an integral part of Bank (PO & Clerk) exams and many other Competitive exams.

COMPUTER : THE DEFINITION

"Computer is an electronic device for performing arithmetic and logical operations", or "Computer is a device or flexible machine to process data and convert it into information.

Now, in the above two definitions, three words are tricky that need some explanation. Let us start with **Logical Operations**- these are the type of operations in which decisions are involved. Data are simply raw facts of figures collected whereas the information is what one gets after processing data. Let us consider an example in which marks of various subjects are collected for a particular group of students. Now, once it adds the marks of all the students and calculates their respective percentage, this becomes information and it servers itself in finding out the answer for the queries like who has stood 1st in the class? Or How many students have got distinctions in the class? Or What is the overall performance of the class?

Computers are not only used for the purpose of calculations. An accountant or a grocery shop owner or a bank or ATM uses it like a computational device, an author uses it as a writing tool, a musician as a device for controlling the notes and tones, kids as a machine for playing games and so on.

Now, you must be thinking that what is so special about this machine that people from diversified fields can use it so flexibly for entirely different functions. The answer is that computer is programmable meaning that it all depends upon what program computer is using for performing a particular function.

Now, the next question that comes into mind is, what is a Program? In a very simple language we can say that a Program is a set of instructions telling the computer what to do.

The Computer Hardware (actual machine) is defined in such a way that it does whatever the Software (computer programs) tells it to do.

There are four basic operations which a computer performs irrespective of the program which is running on it. They are classified as :

1. **INPUT :** This is for the purpose of inserting or feeding data into the computer by means of an input device like keyboard.
2. **PROCESSING :** Some kind of processing is done in the computer to take out or transform the data in some way.
3. **OUTPUT :** The computer produces output on a device, such as printer, scanner or a monitor, that shows the result of processing operations.
4. **STORAGE :** The computer stores the result of processing operations for future use in some storage device like hard disk, compact disk drive (CD Rom) or a floppy disk.

HISTORY OF COMPUTER

Actually speaking electronic data processing does not go back more than just half a century i.e. they are in existence merely from early 1940's. The very first modern electronic computer became operational only in early 1940's. Infact, it's only a little more than just five decades ago since the first modern electronic computer was brought into existence for the purpose of business data processing. Computers before that were only used in scientific and technological field.

Although the present modern electronic computers are very recent but the idea was conceived far back. The same could be seen by the advents of the history. In early days when our ancestors used to reside in caves the counting was a problem. Still it was easier as he could count on his fingers but gradually it started becoming difficult. As the belonging and possession increased, the need of more counting tools grew. It was not possible to have more fingers. The record keeping switched to number of stones and then to scribbling on the walls of their caves. But it was not possible to restrict oneself to stones and walls and they had to look out for some other counting devices. As the civilization grew in mid-seventh century, the adding tools and devices started developing across the world. Thus we can say that idea of computing is as old as the civilization itself. It is very important to learn how people attempted to create early computers as they played very important role in reaching this stage.

When they started using stones to count their animals or the possessions, they never knew that this will lead to a computer of today. People started following a set of procedures to perform calculations with these stones, which later led to creation of a digital counting device, which was the predecessor of a computer.

1450 B.C.—ABACUS-CHINA

The abacus is the first known calculating device. This illustrates how the ancient computers worked. It was invented by the Chinese and is still widely used in the far east for commercial calculations. In its primitive form, it consists of a wooden frame with a number of wires with beads strung through them. The beads are used for counting and calculations. To show a number , beads are pulled down so that each rod represents a digit.

1600 A.D.—NAPIER BONES

Another counting device is Napier Bones. "John Napier, a Scottish Mathematician, invented it. The "bones" were strips of ivory with numbers written in them. When the bones were arranged properly, the user could read the numbers in adjacent columns to get the answer of a multiplication operation. During the 16th to 19th centuries, Europeans contributed in calculating machine by inventing several machines that used existing technologies like clockwise gears and levers.

1642 A.D.—ADDING MACHINE-BLAISE PASCAL-FRANCE

The well known French Scientist and Mathematician, Blaise Pascal invented the first machine which could add, carry digits automatically. He was only nineteen years old at that time. His machine was so revolutionary that the principle behind it is still used in most of the mechanical counters being used today. He became great philosopher and mathematician of Europe. His father was a tax commissioner and he used to accompany his father to his office. There he felt the need of some calculating device, which could save people like his father from that boring and tedious job of doing sums over and again. He came out with a machine "Pascaline" that worked with clockwise gears and levers. The machine was basically developed to perform addition and substraction operations. The machine rotated wheels to register values and lever was used to perform the carrying operations from one wheel to another. Although the machine was not accepted by the business but it initiated a series of inventions. To give honour to Pascal, a computer programming language was named after him. This language, Pascal, is generally used to teach programming to budding programers.

1692 A.D.–MULTIPLYING MACHINE-GOTTFRIED LEIBNITZ-GERMANY

Gottfried improved upon Pascal's machine and introduced a mechanism to carry out automatic multiplication of numbers. Leibnita is best known for his work with Sir Isaac Newton in developing a branch of Mathematics known as Calculus. The calculator invented by him could add, subtract, multiply and divide accurately. It could even perform square root function, although not always accurately.

1813 A.D.—DIFFERENCE ENGINE-CHARLES BABBAGE- ENGLAND

Since early 19th century, Charles Baggage, an Englishman, had been working on the development of a machine, which could perform complex calculations . In 1813 A.D. he invented the 'Different Engine' which could perform complex calculations and print them out as well. This machine was a steam -powered machine. While Babbage was working on his doctorate, he had to solve many complex formulae and he found it difficult to cope up with them in the given time period.

EARLY 1800'S JACQUARD LOOM- JOSEPH MARIE JACQUARD

In the early nineteenth century, a French weaver Joseph Marie Jacquard developed a programmable loom, which used large cards and holes punched in them to control the pattern automatically. The output was a thick rich cloth with repetitive floral or geometric patterns.

Jacquard patterns are still produced to this day. Others adapted the punched cards and used as the primary form of input. They were used till about 20-25 years ago.

1862—"ARITHROME-TER"-CHARLES XAVIER THOMAS-FRANCE

This was the first calculator with commercial prospects. Frenchman Charles Xavier Thomas (known as Charles of Colmar) developed it. He won a gold medal at the International Exhibition in London. The machine performed addition, subtraction, multiplication, division and square root functions accurately.

1863 A.D.—ANALYTIC ENGINE-CHARLES BABBAGE-ENGLAND

Babbage had been working on very elaborate machine all this time. By 1863 he had all the plans ready for the machine, which he named the Analytic Engine. He had conceived of a mechanism, which could carry out long sequence of complex calculations under automatic control. It would have the ability to store 1000, 50-digit numbers in one second and multiply 20-digit numbers in three minutes.

Babbage used a form of punched cards for inputting the data. That would have been a complete modern computer but technology at that time was not advanced enough to provide him with the hardware he required. He was thinking too far ahead of his time and his ideas could not be implemented. However, he was the first person to conceive of the "Stored Program Concept".

Babbage worked on his plans for years. He was accompanied by Augusta Ada Byron (the daughter of famous poet Lord Byron), a brilliant Mathematician whose contribution to Babbage's work is tremendous. She is the first female computer scientist and a programer. A computer programming language, Ada has also been named in her honour.

Charles Babbage is recognized as "the father of Computers". Although his plans could not be materialized and his analytical engine could not be completed in his life span but a working analytical engine was finally developed from his plans in year 1991 and is on the display at the Charles Babbage Institute at Minnesota.

1896 A.D.—PUNCH CARD MACHINE-DR. HER-MANN HALLERITH-USA

Dr. Hallerith is also a great figure in the history of computers. Dr. Hallerith used the idea of using cards and punching holes in them for speeding up the collation job of the American Census of 1880 (The US Constitution calls for thee census of the population after every ten years so as to determine the representation in the US House of representatives). He devised a card in which holes would be punched to indicate the presence of a particular criteria in a respondent. Using wire brushes in his machine the hole punched earlier in the card, enabled a wire to touch a metal plate which carried on electric charge. The charge was transmitted to respective electronic counters which automatically incremented the numbers. After the census was completed, Hallerith perfected his punched card equipment and marketed it. He founded the Tabulating Machine Company in 1896 to continue his work. Although the machines were in great demand but then Hallerith was not happy as he could not pursue his research work. In 1911 the Tabulating-Machine Company merged with other two companies to form Computing -Tabulating-Recording Company. Then Hallerith again started concentrating in inventing better equipment.

One of the partners, the marketing expert named Thomas Watson Sr. led the company. Under his guidance, the company wrote a great success story. Finally in 1924, management decided a new name for the company and then Computing-Tabulating-Recording Company converted to International Business.

MACHINES CORPORATION

Hallerith's idea has been refined and improved and punch cards are still used for recording data items to be input to computers. During the Second World War, an acute need for fast calculating machines was felt to carry out complex defense calculations. The British and the American Governments sponsored a number of projects in major Universities for the development of fast and accurate calculators and computers. This proved to be a boon for the industry which has never looked back since then.

EARLY ELECTRONIC COMPUTERS

1930s—TURING MACHINE-ALAN TURING

In late 1930s the English Mathematician wrote a paper describing the capabilities and limitations of a hypothetical general purpose-computing machine "Turing Machine". Turing also helped constructing Robinson, the British computer used during the World War II to decode German messages that were encrypted by the German Enigma machine. In 1950, Turing published a book titled "Computer Machinery and Intelligence", in which he proposed the Turing test of Artificial Intelligence. That test is still used by scientists. Turing test basically explains that computer is capable of "interacting" with the user.

1939-ABC (ATANASOFF BERRY COMPUTER)-JOHN ATANASOFF

Professor John Atanasoff is remembered because of his contribution of some concepts, which led to the development of the electronic computer. He, with a graduate student, Clifford Berry built an electronics calculating machine that could solve the problems of equations. ABC was first special, electronic computer.

1944—MARK I-DR. HOWARD AIKEN

Dr. Howard Aiken, who read the notes of Ada Byron was keenly interested in constructing an "Analytical Engine". He approached IBM. In spite of doing very well with punched card equipments, IBM hired Aiken and allocated $1 million for the research. Aiken, with his team members, came out with Mark I. Mark I was partly electronic and partly mechanical. It was bulky-8 feet high and 55 feet long. It took 3 to 5 seconds to perform a single multiplication operation.

1940s—MARK I-UNIVERSITY OF PENNSYLVANIA-USA

A group of scientists devised the Mark-I, which was the first Electromechanical calculators in the world. It utilized the punch-card concepts of Hallerith and powers, and it functioned by a series of electromagnetic relays and mechanical arithmetic counters.

During the World War II American Military asked Dr. John Mauchy of University of Pennsylvania to develop a machine which can quickly calculate the trajectories for missiles. A graduated student Presper Eckert helped him in building the device. This is another thing that the computer could not be completed until the two months after the war ended.

1943 A.D.—ENIAC-HARVARD UNIVERSITY-USA

Closely following on the heels of Mark-I, scientists of Harvard University brought out Electronic Numerical Integrator and Calculator (ENIAC) which was the first electronic computer. It weighed nearly 5 tons and occupied space equivalent to 2 big rooms and could perform all the calculations that a small pocket calculator of today can perform. It used vacuum tubes and was able to do 300 multiplications per second. This was faster than Mark I but the major problem of using this computer was that the staff had to rewire the machine completely for carrying out the new instructions.

1947 A.D.—EDSAC-CAMBRIDGE UNIVERSITY-ENGLAND

Electronic Delayed Storage and Calculation was the name given to the first electronic computer in the world. It was the first one to implement the 'stored program concepts'. Known later as the 'Von Neumann Concept', it proposed the use of binary numbers and the internal storage of instructions in digital form.

1951 A.D.—UNIVAC-I-USA

By now number of commercial companies were working on the development of computing systems. Sperry Rand Corporation of USA introduced the first commercial computer to the world and named it UNIVAC-I. Its introduction was followed by the entrance of IBM into the computer field with IBM-701 Computer.

COMPUTER GENERATIONS

In recent years, the computer industry has grown at a phenomenal pace. In a short time of 35 years or so computers have improved tremendously. In the last decade the speed of computer has increased 200 times. Not only that the reliability curve has also taken a sharp increase. The cost per unit of calculating has gone down by 500 times. The storage capacity is increasing so fast that now it seems that nothing is impossible to store. Large data can be stored in very small devices.

The term "generations" was initially introduced to distinguish between different hardware technologies. Gradually it shifted to both hardware and software as the total systems consists of both of them. The computers can be divided in five past generations, i.e., depending upon the technologies used. The five generations of computer are:

1st GENERATION

Until 1951, electronics computers were the exclusive possession of scientists and the military. Till then nobody tried to use them for business purpose. The idea of marketing them was conceived by Mauchy and Eckert, creators of ENIAC's. As US census bureau was already using IBCP cards, they were the pioneers in buying this computer for the first time in 1951. The company created by M and ETS became UNIVAC division of Sperry and Corporation.

The bringing of first UNIVAC (Universal automatic computers) general purpose electric digital computer, marks the beginning of the first generation of electronic computers.

These computers used valves and all the components were joined by copper wires. Due to large size of the components and due to the facts that the components had to be spaced apart as the valves dissipated a lot of heat, the computers were very bulky and required huge electric power, airconditioners, maintenance and space for their installation. Further, the speed of operation was very slow and had a very low reliability factor as vacuum tubes failed frequently. They were still given the name of "electronic brains" by the journalists. They also said that these electronic brains will change the world one-day. Later IBM corporation developed IBM 701, IBM 702 and IBM 650 and few other systems. These were called the First generation computers. **The popular brand of first generation computer was IBM 650**, which had a magnetic drum memory and utilized punch cards for input and output.

Computer belonging to this generation had the following characteristics:

1. Comparatively large in size as compared to present day computers.
2. Generated lot of heat, they were not consistent and reliable as the valves tended to fail frequently.
3. Low capacity internal storage.
4. Individual, non-related models.
5. Processors operated in the milliseconds speed range.
6. Internal storage consisted of magnetic drum and delay lines.

2nd GENERATION

FGC were very unreliable, mainly because of vacuum tubes which kept on burning out. Users had to be prepared all the time with dozen of extra tubes to replace them. The computers of this generation were characterized by the use of solid state devices (transistors) instead of vacuum tubes. Transistorized circuits were smaller, generated little heat, were less expensive and consumed less power than vacuum tube circuits and were much greater in processing capacity. Since transistors had a faster switching action, this generation computers were significantly faster and smaller and were more reliable too than first generation computers. The use of magnetic cores as the primary internal storage medium and the introduction of removable magnetic disc pack were other major developments of the second generation.

Some of the popular models in this generation lot computer systems, were IBM-1401, IBM- 1620, UNIVAC-1004. Many of these computers were used for business applications.

Computers of this generation had the following characteristics:

1. Smaller in size compared to the first generation computers.
2. Generated a lower level of heat, as components were much smaller.
3. Greater degree of reliability because of solid state technology.
4. Higher capacity of internal storage.
5. Use of core storage instead of magnetic drum and delay lines.

3rd GENERATION

A revolution in the computer developments took place with the development of integrated circuits (IC) on a single silicon chip. In 1958, Jack St. Clair Kelby and Robert Noyce invented the first IC. IC incorporated number of transistors and electronic circuits on a single wafer or chip of silicon. IC is called chip because of the way they are made. They are also called as semi conductors as combining layers of materials that have varying capacity to conduct electricity form them. This ushered in the third generation of computer systems in 1964. The integrated circuits enhanced considerably the processing capability and the speed of the computer. Some of the popular third generation computers are IBM-360, series, IBM-370 series and ICL-2900 series.

Integrated circuits technology is responsible for bringing in revolution in the computer industries. Scientists were aware that more powerful computers can be built by building more complex circuits, but as these circuits had to be wired by hand, these computers were too complex and expensive. IC solved this problem by introducing a computer that costed lower than first generation computer and offered more memory and faster processing. By 1967, IBM decided to change its track as number of programming language came in the market.

This was the beginning of software industry as the language grew and people who had the skills to translate user requirements in these language were high on demand now.

One more technology development which took place was the launching of first telecommunication satellite. The communication stations on the earth were now in a position to send and receive data by means of satellite enabling communications between the computer systems around the world.

Computers of this generation have the following characteristics:

1. Smaller in size as compared to second generation computers.
2. High capacity internal storage.
3. Remote communication facilities.
4. Multiprogramming facilities
5. Wide range of optional peripherals.

4th GENERATION

The 1970's marked the beginning of a new generation of computers, the development of microprocessor chip, which contains an entire central processing unit (CPU) on a single silicon chip led to the mushroom growth of inexpensive computers. They are not computers by themselves but they can perform all the functions of arithmetic logic unit and control units of the CPU. When these microprocessors are connected with memory and input-output devices, they become microcomputers. The semiconductor memories are also very small and very cheap.

There are several types of memory chips. Three of the most commonly used are- (a) Random Access Memory (RAM) in which data can be read or written corresponding to the main memory of the conventional computer, (b) Read Only Memory (ROM) and (c) Programmable Read Only Memory (PROM).

In the ROM chips, the data are burnt into the chip at the manufacturing time. It cannot be changed. These chips are used in systems where the data need to be changed. Even when power supply fails, the data remains in the memory. In case of PROM a user can program and even correct the data if necessary. The fourth generation of computer may be called microcomputer generation. The input and output devices used with fourth generation are quite advanced. The use of very large integrated circuits (VLIC) has made the fourth generation (micro) computers very compact, much less expensive, faster, more reliable and of much greater data processing capacity than equalized third generation computers.

Some computers belonging to fourth generation are DEC- 10, STAR- 1000, PDP-11 and APPLE Series Personal Computers.

5th GENERATION

Till fourth generation of computers, the major stress was on improving the hardware from valves to transistors and then to integrated circuits, which resulted in miniaturization and fast speed of computers. However, the lack of thinking power has forced the scientists to work further for Fifth generation computers. **The concept of "Artificial Intelligence" is being used in these computers and Japanese call them "Knowledge Processors".** Automatic programming, computational logic, pattern recognition and control of robots, the processes and which need skill and intelligence are examples of Artificial Intelligence. These computers, when developed, will be able to execute billions of instructions per languages will become obsolete on these machines and new computer languages and related software will be needed.

The fifth generation gives the highest priority to making systems that are easy and natural to use. Its other objective relates to the types of technological support needed to support "problem solving system" according to the fifth generation committee. In these systems, the Committee adds, "Intelligence will be greatly improved to approach that of a human being. When compared to conventional systems, the man- machine interface will be closer to that of human behaviour." The fifth generation has three functional requirements:

1. Easy to use computers with high intelligence and natural human input and output mechanism.
2. Reliable and efficient software development by new languages, new computer architectures and systems software which overcome previous problems
3. Improved overall functions and performance aimed at making computers smaller, lighter, faster, of greater capacity, more flexible and more reliable.

These are the objectives which set the main themes for the future of computing, whatever techniques are used to achieve them.

CHARACTERISTICS OF COMPUTER

Computer has become an essential part of our day-to-day activities. Computers are used more or less in every sphere of life. Its growing importance, is because of its unique features.

ACCURACY

Computers are very accurate. They do make mistakes but seldom. This is because of their physical circuit. Even if they make mistakes, it might be because of the faulty programs, some mistake made while feeding in the data or poorly designed system. The highly efficient error detecting techniques of the computer prevent its from showing false results.

SPEED

The computer was initially invented as a very high-speed calculator. This helped in completing many scientific projects that were previously impossible. The landing on the moon would not have been possible if computer had not been there, neither would we take an umbrella if saw clear sky and weather forecast told us that it would rain in the afternoon. We would have taken a lot of time in making the arrangements for flying abroad if computers were not there to book our seats so easily and fast. This ability to get the answers fast enough so that one has time to take an action on them (to make alternative arrangements in case of reservations) makes real-time -computing possible. Electrical pulses, so its speed is virtually instantaneous. When talking about speed of the computer, we don't talk in seconds or microseconds but in nanoseconds (10^{-9} seconds) or even picoseconds (10^{-12} seconds). You can very well imagine the speed of computer by the fact that a computer can add two 18-digit numbers in 300 to 400 nanoseconds, that means that it can do about 3 million calculations per second.

VERSATILITY

This means that the computers are capable of performing any type of task, provided the activity could be put into logical steps. It can be used from cooking (microwave oven) to spending a night on the moon (through satellites). In today's world it is difficult to imagine even a single field which is untouched by computer invasion.

STORAGE

A human mind acquires some knowledge and after it has used, it might keep it in its subconscious mind or might even forget it after some time. But computers can store massive amounts of information. This information can be used and reused time and again for years (unless something goes wrong with the hardware). Today's computers have the disks, which have the capacity of storing billions of characters. This is big enough to store the complete Britannica Thesaurus, dozens of computer programs or the applications, thousands of songs, huge databases, all the projects we have ever done in our life and much more.

MEMORY

Sometimes if we try to recall what we studied last year, we are not able to recollect. In case of computer, it's not like that. If we store any information in the computer's memory, it remains there till we delete it. Moreover the memory of computer is unlimited, we can store as long as we want.

AUTOMATION

A computer is much more than just a calculator in which we need to give the instructions at every step. It is an intelligent device and if programmed for an activity, it keeps doing it till it finishes, without any human intervention.

DILIGENCE

Computer being a machine, does not show any signs of fatigue, tiredness, lack of concentration, or lost interest. The speed, accuracy and the quality would be absolutely same in the first and the last calculation, even if millions of calculations are done by computer. It will not complain even once that they are bored. Thus, it is best specially for monotonous and voluminous work. Although that is a threat for the people who are working on the same kind of jobs.

RELIABILITY

Above all qualities of the computer make them reliable and also make us too dependent on them. They can be run for years and years without any loss of data or any other problem.

Although it has got so many uses but the only limitation we could find is that they are not creative. They are designed and run by humans only. They might make the exact copy of Picasos paintings but actually can not give the world their original creations, they might print out numberless books of Shakes-peare's *Hamlet* but can never write anything on its own, they might replicate the *Tajmahal*, seventh wonder of the world but will never be able to give an architecture like that. And we must be happy for that as we humans, still are superior to computers.

Till now we are only discussing the good points of computers like making your work easier, reducing the response time, facilitating the daily activities, dealing with large amounts of data and many more but there are some bad effects too attached with computers. It is still not possible to make absolute foolproof systems but now they are part of our lives. Researchers are on to improve and minimize (if not eliminate) these disadvantages of computers.

1. They're manufactured using hazardous chemicals hence harming the health of people working and also contributing in pollution.
2. They are failure prone. A failure in a nuclear power station, or airplane etc. can endanger many lives and resources.
3. Discarded computers are real junk and consume lot of space.
4. They are always a threat to personal privacy.
5. Working too much time in computer gives the user back pain, nerve injuries etc.
6. By automating tasks unemployment is increasing at a very fast pace.

Thus one has to be careful while working on the computer and take care of the negative effects, so that they do not overpower the positive effects of it.

CLASSIFICATION OF COMPUTERS

Initially computers were classified on the basis of their size, speed and cost but now there are many more attributes attached to them.

Each and every computer must fall in one of the four categories described below:

1. Supercomputer
2. Mainframe computer
3. Mini computer
4. Micro computer

SUPER COMPUTERS

A supercomputer is a computer which performs at a rate of speed which is far above that of other computers. The primary use for supercomputers is in scientific computing, which requires high-powered computers to perform complex calculations. Scientific organizations like NASA boast supercomputers the size of rooms for the purpose of performing calculations, rendering complex formulas, and performing other tasks which require a formidable amount of computer

power. Some supercomputers have also been designed for very specific functions like cracking codes and playing chess; Deep Blue is a famous chess-playing supercomputer.

In many cases, a supercomputer is custom-assembled, utilizing elements from a range of computer manufacturers and tailored for its intended use. Most supercomputers run on a Linux or UNIX operating system, as these operating systems are extremely flexible, stable, and efficient. Supercomputers typically have multiple processors and a variety of other technological tricks to ensure that they run smoothly.

The chief difference between a supercomputer and a mainframe is that a supercomputer channels all its power into executing a few programs as fast as possible, whereas a mainframe uses its power to execute many programs concurrently.

MAINFRAME COMPUTER

The mainframes are bigger in size, have vast amount of memory and can handle larger than minicomputers. Apart from that their input/output operations are very fast. For these reasons, the mainframes are generally used in environments where lot of data has to be processed like banks and research institutions.

MINI COMPUTER

The Mini- computers are slightly bigger in size, memory and speed when compared to Micro computers. They can handle bigger program and larger numbers compared to Microcomputers. The major differences is that the Minicomputer are multi user systems. A multi user system means, more than one user can work in the computer systems at the same time. These computers are generally used for scientific purposes and for small business establishments.

MICROCOMPUTERS

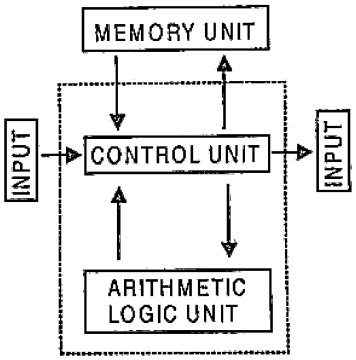
The Microcomputers are mainly used for personal use like word processing. Apart from that, these computer systems are generally used in those applications where there are lot of interaction between the computer and the user is required. Normally, only one user will be able to work on this system at a given time, which is called single user system. (The 16 wire bus microcomputer, is often called the super-micro, and the 32 wire bus microcomputer is often called as mega-micro. But these computers have become common, and these are generally known as Micro-Computers).

A basic computer system consists of three primary components:

1. Memory
2. Central Processing Unit (CPU) This unit consists of : (a) Control Unit (CU)
   (b) Arithmetic and Logical Unit (ALU)
3. Input/Output Unit

The memory provides a storage medium for the data and instructions to be executed. For the arithmetic and logical unit to operate efficiently, the stored information should be directly accessible at high speed. This access time is generally measured in terms of microseconds while the capacity is measured on terms of Kilo/ Mega bytes. The primary storage unit components have traversed the path from vacuum tubes to transistors. This has also resulted in miniaturization, speed improvement, accuracy, reliability and durability of the whole system.

The Control unit together with the arithmetic logical unit (ALU) is known as the Central Processing Unit (CPU) or the brain of the computers. This is responsible for the execution of programs and synchronization of entire system. Since input, output and secondary storage devices are at the periphery of the CPU, these are called the peripheral devices or simply peripherals.

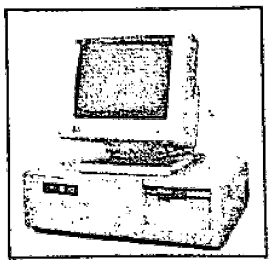


The function of the input device is to read and send data to the central processing unit of the computer. The data is sent from the input device to the CPU over cables. The data travels only in one direction, i.e., from the input device to the CPU. The input device is analogous to human eyes, ears and nose.

The function of the output device is to report the data that has been processed in the CPU. The processed data again travels in one direction, this time from the CPU to the output device over cables (channels). The output device is analogus to human speech and other actions.

DIFFERENT TYPES OF COMPUTERS

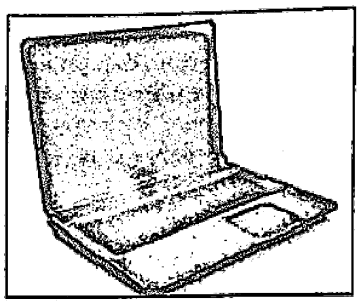
1. DESKTOP



This is the type of desktop computer_years ago,

When you hear the term computer tower this picture tells you what they are talking about. Computer towers started to take over the traditional desktop.

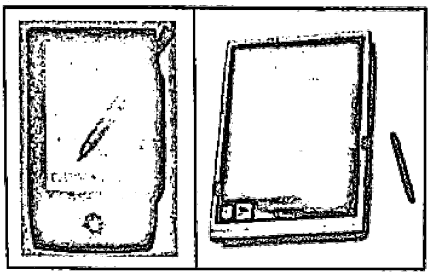
2. LAPTOP COMPUTERS



They were the first portable computer and weighed about 28 pounds. As the size reduced, the term changed to laptop. They weight about 10 to 12 pounds.

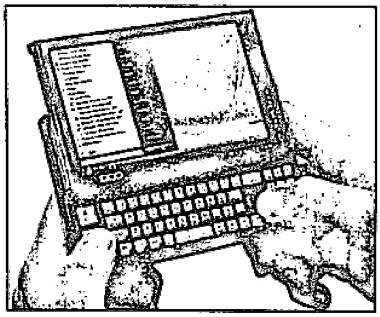
Gradually as the size decreased, smaller ones were called notebooks.

3. PERSONNAL DIGITAL ASSISTANTS (PDA'S)



Most people refer to this type of computer as a PDA. Generic term for hand-held devices such as Palm Pilots that are commonly used to store address and calendar information. Newer models include networking features.

4. TABLET PC



This type of computer is called a tablet PC. With a Tablet PC you use an electronic stylus to write on the screen, just like with a pen and paper, only your words are in digital ink. The Tablet PC saves your work just like you wrote it (as a picture), or you can let the Hand Recognition (HR) software turn your chicken-scratches into regular text.

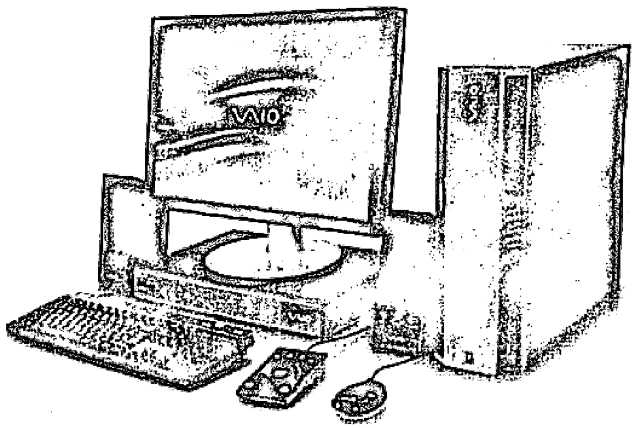
5. PERSONAL COMPUTER

A personal computer may be a desktop computer, a laptop, a tablet PC, or a handheld PC (also called a palmtop). The most common microprocessors in personal computers are x86-compatible CPUs. Software applications for personal computers include processing, spreadsheets, databases, Web browsers and e-mail clients, games, and special-purpose software applications. Modern personal computers often have connections to the Internet, allowing access to the World Wide Web and a wide range of other resources.

A PC may be used at home or in an office. Personal computers may be connected to a local area network (LAN), either by a cable or a wireless connection.

6. WORK STATION

They refer to this as a computer work station. The workstation is basically the whole complete package. Monitor, tower, keyboard, mouse, etc. Workstation is also connected to a network.



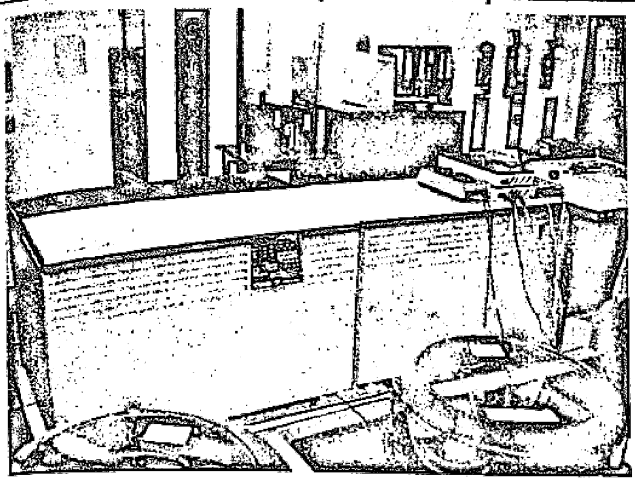
When talking about PC computers, most people probably think of the desktop type, which are designed to sit on your desk. PC stands for Personal Computer. The tower and the smaller mini-tower style cases have become popular as people started needing more room for extra drives inside. If you look at the older desktop compared to the newer tower the nice advantage was working on them.

A workstation is part of a computer network and generally would be expected to have more than a regular desktop PC of most everything, like memory, storage space, and speed.

The market for the smallest PCs is expanding rapidly. Software is becoming available for the small types of PC like the palmtop (PPC) and handheld (HPC). This new software is based on new operating systems like Windows CE (for Consumer Electronics). One big advantage for the newer programs is the ability to link the small computers to your home or work computer and coordinate the data. Most of the time you hear that referred to as sync your computer. Basically you carry a tiny computer like a PalmPilot around to enter new phone numbers and appointments among other things on your handheld model. Then later when you get back to your home or office you can move this information to your main computer.

7. MAINFRAME COMPUTERS

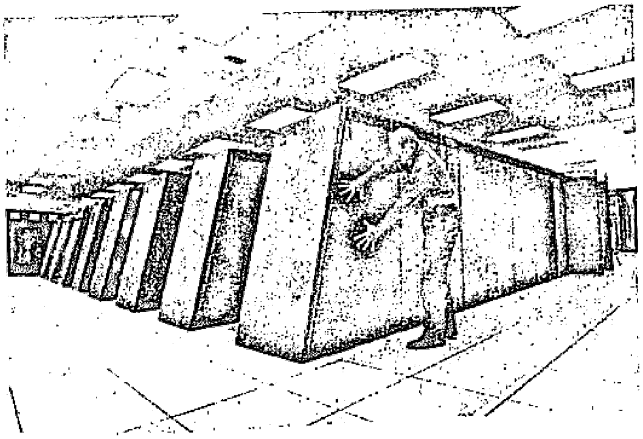
This is called a mainframe computer. A main frame is the heart of a network of computers or terminals which allows hundreds of people to work at the same time on the same data. It requires a special environment - cold and dry.



In the early days of computing, mainframes were huge computers that could fill an entire room or even a whole floor! As the size of computers has diminished while the power has increased, the term mainframe has fallen out of use in favour of enterprise server. You'll still hear the term used, particularly in large companies to describe the huge machines processing millions of transactions every day.

8. SUPER COMPUTER

This is an example of a supercomputer. We are talking HUGE companies use these. These are used for jobs that take massive amounts of calculating, like weather forecasting, engineering design and testing, serious decryption, economic forecasting, etc.



9. HYBRID COMPUTERS

Hybrid computers are computers that are designed to provide functions and features that are found with both analog computers and digital computers. The idea behind this combined or hybrid computer model is to create a working unit that offers the best of both types of computers. With most designs, the analog components of the equipment provide efficient processing of differential equations, while the digital aspects of the computer address the logical operations associated with the system.

By creating this type of integrated computer, the benefits of both analog and digital computing are readily available. A hybrid computer is extremely fast when it comes to managing equations, even when those calculations are extremely complicated. This advantage is made possible by the presence of the analog components inherent within the design of the equipment.

10. POINT OF SALE (POS)

Point of sale, or POS as it is more commonly abbreviated, refers to the capturing of data and customer payment information at a physical location when goods or services are bought and sold. The POS transaction is captured using a variety of devices which include computers, cash registers, optical and bar code scanners, magnetic card readers, or any combination of these devices. A POS system for a restaurant, for example, is likely to have all menu items stored in a database that can be queried for information in a number of ways. POS terminals are used in most industries that have a point of sale such as a service desk, including restaurants, lodging, entertainment, and museums

11. EMBEDDED SYSTEM

An embedded system is a computer system designed to perform one or a few dedicated functions often with real-time computing constraints. It is embedded as part of a complete device often including hardware and mechanical parts. By contrast, a general-purpose computer, such as a personal computer (PC), is designed to be flexible and to meet a wide range of end-user needs. Embedded systems control many devices in common use today.

Embedded systems are controlled by one or more main processing cores that are typically either microcontrollers or digital signal processors (DSP). The key characteristic, however, is being dedicated to handle a particular task, which may require very powerful processors. For example, air traffic control systems may usefully be viewed as embedded, even though they involve mainframe computers and dedicated regional and national networks between airports and radar sites (each radar probably includes one or more embedded systems of its own).

OBJECTIVE QUESTIONS

1. A(n) _____ system is a small, wireless handheld computer that scans an item's tag and pulls up the current price (and any special offers) as you shop.
   (1) PSS (2) POS
   (3) Inventory (4) data mining
   (5) None of these
2. Which of the following is NOT one of the four major data processing functions of a computer?
   (1) gathering data
   (2) processing data into information
   (3) analyzing the data or information
   (4) storing the data or information
   (5) None of these
3. Surgeons can perform delicate operations by manipulating devices through computers instead of manually. This technology is known as:
   (1) robotics.
   (2) computer forensics.
   (3) simulation.
   (4) forecasting.
   (5) None of these
4. _____ is the science that attempts to produce machines that display the same type of intelligence that humans do.
   (1) Nanoscience
   (2) Nanotechnology
   (3) Simulation
   (4) Artificial intelligence (AI)
   (5) None of these
5. _____ are specially designed computers that perform complex calculations extremely rapidly.
   (1) Servers
   (2) Supercomputers
   (3) Laptops
   (4) Mainframes
   (5) None of these
6. Which of the following is the correct order of the four major functions of a computer?
   (1) Process → Output → Input → Storage
   (2) Input → Output → Process → Storage
   (3) Process → Storage → Input → Output
   (4) Input → Process → Output à Storage
   (5) None of these
7. In analog computer
   (1) Input is first converted to digital form
   (2) Input is never converted to digital form
   (3) Output is displayed in digital form
   (4) All of above
   (5) None of these
8. In latest generation computers, the instructions are executed
   (1) Parallel only
   (2) Sequentially only
   (3) Both sequentially and parallel
   (4) All of above
   (5) None of these
9. Who designed the first electronics computer – ENIAC?
   (1) Van-Neumann
   (2) Joseph M. Jacquard
   (3) J. Presper Eckert and John W Mauchly
   (4) All of above
   (5) None of these
10. Modern Computer are very reliable but they are not
    (1) Fast (2) Powerful
    (3) Infallible (4) Cheap
    (5) None of these
11. IMB launched its first personal computer called IBM-PC in 1981. It had chips from Intel, disk drives from Tandon, operating system from Microsoft, the printer from Epson and the application software from everywhere. Can you name the country which contributed the video display?
    (1) India (2) China
    (3) Germany
    (4) Taiwan
    (5) None of these
12. What is meant by a dedicated computer?
    (1) Which is used by one person only
    (2) Which is assigned one and only one task
    (3) Which uses one kind of software
    (4) Which is meant for application software
    (5) None of these
13. a computer which CPU speed around 100 million instruction per second and with the word length of around 64 bits is known as
    (1) Super computer
    (2) Mini computer
    (3) Micro computer
    (4) Macro computer
    (5) None of these
14. The storage subsystem in a microcomputer consists mainly of ... or ... media with varying capacities
    (1) Memory or video
    (2) Magnetic or optical
    (3) Optical or memory
    (4) Video or magnetic
    (5) None of these
15. A hybrid computer
    (1) Resembles digital compute
    (2) Resembles analog compute
    (3) Resembles both a digital an analog computer
    (4) None of the above
    (5) None of these
16. The personal computer indus try was started by
    (1) IBM
    (2) Apple
    (3) Compaq
    (4) HCL
    (5) None of these
17. In the IBM PC-At, what do th words AT stand for
    (1) Additional Terminals
    (2) Advance technology
    (3) Applied technology
    (4) Advanced terminology
    (5) None of these

18. Which was the most popular first generation computer?
(1) IBM 1650 (2) IBM 360
(3) IBM 1130 (4) IBM 2700
(5) IBM 650

19. One millisecond is
(1) 10 seconds
(2) 10 seconds
(3) 1000 seconds
(4) 10000 seconds
(5) 1/1000 seconds

20. Number crunchier is the informal name for
(1) Mini computer
(2) Super computer
(3) Microcomputer
(4) Mainframe computer
(5) None of these

21. Which company is the biggest player in the microprocessor industry?
(1) Motorola (2) IBM
(3) Intel (4) AMD
(5) None of these

22. Symbolic logic was discovered by
(1) George Boole
(2) Herman Hollerith
(3) Van Neumann
(4) Basic Pascal
(5) None of these

23. What was the nick name of the computer used by the Americans in 1952 for their H-bomb project?
(1) ENIAC (2) EDSAC
(3) MANIAC (4) UNIVAC
(5) None of these

24. computer operators
(1) writes computer programs for specific problems
(2) operate the device which input and output data from the computer
(3) normally require a college degree in computer science
(4) all of the above
(5) None of these

25. The first electronic computer in the world was
(1) UNIVAC (2) EDVAC
(3) ENIAC (4) All of above
(5) None of these

26. Which was the computer conceived by Babbage?
(1) Analytical engine
(2) Arithmetic machine
(3) Donald Knuth
(4) All of above
(5) None of these

27. Offline device is
(1) A device which is not connected to CPU
(2) A device which is connected to CPU
(3) A direct access storage device
(4) An I/O device
(5) None of these

28. Microprocessors can be used to make
(1) Computer
(2) Digital systems
(3) Calculators
(4) All of the above
(5) None of these

29. Which American Computer Company is called big blue?
(1) Microsoft
(2) Compaq Corp
(3) IBM
(4) Tandy Sevenson
(5) None of these

30. The first electronic general purpose digital computer built by Motley and Accrete called ENIAC did not work on the stored program concept. How many numbers could it store in its internal memory?
(1) 100 (2) 20
(3) 40 (4) 80
(5) None of these

31. The digital computer was developed primarily in
(1) USSR (2) Japan
(3) USA (4) UK
(5) None of these

32. The subject of cybernetics deals with the science of
(1) Genetics
(2) Control and communications
(3) Molecular biology
(4) Biochemistry
(5) None of these

33. Most of the inexpensive personal computer does not have any disk or diskette drive. What is the name of such computers?
(1) Home computers
(2) Diskless computers
(3) Dedicated computer
(4) General computer
(5) None of these

34. Which of the following required large computer memory?
(1) Imaging (2) Graphics
(3) Voice
(4) All of above
(5) None of these

35. A term associated with the comparison of processing speeds of different computer system is:
(1) EFTS (2) MPG
(3) MIPS (4) CFPS
(5) None of these

36. Who invented the microprocessor?
(1) Marcian E Huff
(2) Herman H Goldstein
(3) Joseph Jacquard
(4) All of above
(5) None of these

37. One computer that is not considered a portable computer is
(1) Minicomputer
(2) A laptop computer
(3) Micro computer
(4) All of the above
(5) None of these

38. When was the world's first laptop computer introduced in the market and by whom?
(1) Hewlett-Packard
(2) Epson, 1981
(3) Laplink traveling software Inc. 1982
(4) Tandy model-2000, 1985
(5) None of these

39. The first microprocessor built by the Intel Corporation was called
(1) 8008 (2) 8080
(3) 4004 (4) 8800
(5) None of these

40. Who built the world's first electronic calculator using telephone relays, light bulbs and batteries/
(1) Claude Shannon
(2) Konrard Zues
(3) George Stibits
(4) Howard H. Aiken
(5) None of these

41. IBM 7000 digital computer
(1) Belongs to second generation
(2) Uses VLSI
(3) Employs semi conductor memory
(4) Has modular constructions
(5) None of these

42. In the third Generation of computers
(1) Distributed data processing first became popular
(2) An operating system was first developed
(3) High level procedural language were first used
(4) Online real time systems first become popular
(5) None of these

43. The first firm to mass-market a microcomputer as a personal computer was
(1) IBM
(2) Super UNIVAC
(3) Radio Shaks
(4) Data General Corporation
(5) None of these

44. A digital computer did not score over an analog computer in terms of
(1) Speed (2) Accuracy
(3) Reliability
(4) Cost (5) None of these

45. Who is credited with the idea of using punch cards to control patterns of a weaving machine?
(1) Pascal (2) Hollerith
(3) Babbage (4) Jacquard
(5) None of these

46. Which was the world's first minicomputer and when was it introduced?
(1) PDP-I, 1958
(2) IBM System/36, 1960
(3) PDP-II, 1961
(4) VAX 11/780, 1962
(5) None of these

47. The proper definition of a modern digital computer is
(1) An electronic automated machine that can solve problems involving words and numbers
(2) A more sophistic and modified electronic pocket calculator
(3) Any machine that can perform mathematical operations
(4) A machine that works on binary code
(5) None of these

48. A modern electronic computer is a machine that is meant for
(1) Doing quick mathematical calculations
(2) Input, storage, manipulation and outputing of data
(3) Electronic data processing
(4) Performing repetitive tasks accurately
(5) None of these

49. Most important advantage of an IC is its
(1) Easy replacement in case of circuit failure
(2) Extremely high reliability
(3) Reduced cost
(4) Lower power consumption
(5) None of these

50. Where was India's first computer installed and when?
(1) Indian Institute of Technology, Delhi, 1977
(2) Indian Institute of Science, Bangalore, 1971
(3) Indian Iron & Steel Co. Ltd., 1968
(4) Indian Statistical Institute, Calcutta, 1955
(5) None of these

51. Chief component of first generation computer was
(1) Transistors
(2) Vacuum Tubes and Valves
(3) Integrated Circuits
(4) None of above
(5) None of these

52. Second Generation computers were developed during
(1) 1949 to 1955
(2) 1956 to 1965
(3) 1965 to 1970
(4) 1970 to 1990
(5) None of these

53. The computer size was very large in
(1) First Generation
(2) Second Generation
(3) Third Generation
(4) Fourth Generation
(5) None of these

54. Microprocessors as switching devices are for which generation computers
(1) First Generation
(2) Second Generation
(3) Third Generation
(4) Fourth Generation
(5) None of these

55. Which generation of computer is still under development
(1) Fourth Generation
(2) Fifth Generation
(3) Sixth Generation
(4) Seventh Generation
(5) None of these

56. Artificial Intelligence is associated with which generation?
(1) First Generation
(2) Second Generation
(3) Fifth Generation
(4) Sixth Generation
(5) Fourth Generation

57. Which operation is not performed by computer
(1) Inputting (2) Processing
(3) Controlling
(4) Understanding
(5) None of these

58. Fifth generation computer is also known as
(1) Knowledge information processing system
(2) Very large scale integration (VLSI)
(3) Both of above
(4) None of above
(5) None of these

59. The computer that process both analog and digital is called
(1) Analog computer
(2) Digital computer

(3) Hybrid computer
(4) Mainframe computer
(5) None of these

60. Most of the commonly used personal computers/laptops do not have a command key known as—
(1) Turnover (2) Shift
(3) Alter (4) Delete
(5) Insert

Bank of Baroda Clerk Exam, 30.11.2008

61. PARAM and ANURAG are super computers developed in
(1) China
(2) USSA
(3) England
(4) India
(5) None of these

62. To access a mainframe or super computer, users often use a-
(1) Terminal
(2) Node
(3) Desktop
(4) Hand held
(5) None of these

63. Computers that are portable and convenient for users who travel are known as ——
(1) super computers
(2) laptops
(3) mini computers
(4) file servers
(5) None of these

SBI Clerk Exam, 19.08.2007

64. The first machine to successfully perform a long series of arithmetic and logical operations was:
(1) ENIAC
(2) Mark-I
(3) Analytic Engine
(4) UNIVAC-1
(5) None of these

65. Analog computer works on the supply of
(1) Continuous electrical pulses
(2) Electrical pulses but not continuous
(3) Magnetic strength
(4) None of the above
(5) None of these

ANSWERS

1.(2)	2.(3)	3.(1)	4.(4)
5.(2)	6.(4)	7.(2)	8.(3)
9.(3)	10.(3)	11.(4)	12.(2)
13.(1)	14.(2)	15.(3)	16.(1)
17.(2)	18.(5)	19.(5)	20.(2)
21.(3)	22.(1)	23.(3)	24.(2)
25.(3)	26.(1)	27.(1)	28.(4)
29.(3)	30.(2)	31.(3)	32.(2)
33.(1)	34.(4)	35.(3)	36.(1)
37.(1)	38.(2)	39.(3)	40.(3)
41.(4)	42.(4)	43.(3)	44.(2)
45.(4)	46.(1)	47.(4)	48.(2)
49.(2)	50.(4)	51.(2)	52.(2)
53.(1)	54.(4)	55.(2)	56.(3)
57.(4)	58.(1)	59.(3)	60.(1)
61.(4)	62.(1)	63.(2)	64.(2)
65.(2)			

EXPLANATIONS

2. (1) There are four basic operation of computer which a computer performs Input, Processing, Output, and Storage.
3. (1) Robot can perform any human physical work. Robot movement can be controlled through computer from remote location.
4. (4) Artificial intelligence is a science of developing intelligence in machine (computer). AI produces intelligence in computer to take decision and display intelligence like human.AI is the science that attempts to create machines that will emulate the human thought process.
5. (2) a super computer is a computer which performs at a rate of speed which is far above that of other computer. The primary use of supercomputer is in scientific computing which requires high speed computer to perform complex calculation.
6. (4) I am plotting a graph in micro soft excel, I am entering the values (input), the computer will calculate the values and plot the graph for me (processing), then display the graph (output), and after that, I will save it (storage) in my hard disk.
7. (2) In analog computer accept inputs which vary with respect to time, and directly apply these inputs to various devices within the computer which performs the computing operations of additions, subtraction, multiplication, division, integration and function generation
10. (3) Infallible (fail-safe, reliable). Computer failure is uncertain that lead to data and information loss.
12. (2)dedicated system is a computer specially configured to perform a single, data-processing function for reasons of efficiency or convenience such as performing security tasks at a computer canter.
14. (2) only magnetic and optical media used for memory storage. Video and memory is not a storage media.
20. (2) a computer whose dominant characteristic is its ability to perform large amounts of numerical computations quickly is Supercomputers, for example, are sometimes called number crunchers. In addition, the term number cruncher is often applied to powerful workstations.
35. (3) Instructions per second (IPS) is a measure of a computer's processor speed. The term is commonly used in association with a numeric value such as thousand instructions per second (KIPS), million instructions per second (MIPS), or Million Operations per Second (MOPS).
57. (4) Computer does not have it own mind. It performs the function as per instruction written in programme. It can't understand the data, whatever data comes as a input, it process and control as per instruction written on code.