

**A.S.D.GOVERNMENT DEGREE COLLEGE FOR WOMEN (A)**

**Affiliated to Adikavi Nannaya University  
Jagannaickpur, Kakinada.**

**DEPARTMENT OF COMPUTER SCIENCE**



**BRIDGE COURSE**

**2023-2024**

# **PERMISSION LETTER**

**Kakinada,**  
**Date: 03-10-2023.**

**To,**  
Dr. V.Anantha Lakshmi,  
Principal,  
A.S.D. Govt. Degree College for Women (A),  
Kakinada.

**From,**  
N.N.Subrahmanyeswari,  
Incharge of Department of Computer Science & Computer Applications,  
A.S.D. Degree College for Women (A),  
Kakinada.

**Sub:** Request to conduct the Bridge Course on “Fundamentals of Computers” for  
I B.Sc.(CS) students from 09-10-2023 to 18-10-2023-Reg.

Respected Madam,

The Department of Computer Science & Computer Applications wishes to organize the Bridge course on “Fundamentals of Computers” with a duration of 8 days from 09-10-2023 to 18-10-23 for all I B.Sc.(CS) students. This course aims to make the students get acquainted with the fundamentals of Computer Skills and learn the basics of programming so that the students will have a developed foundation in the subjects they will encounter, thereby minimizing the challenges of knowledge gaps. Please consider the request to conduct the Bridge course for the students.

Thanking you, Madam.

Yours faithfully,

*N.N.S. Eswari*  
INCHARGE  
DEPT. OF COMPUTER SCIENCE  
ASD GOVT DEGREE COLLEGE (W) (AUT. HONORUS)  
KAKINADA

**CIRCULAR**

# A.S.D.GOVERNMENT DEGREE COLLEGE FOR WOMEN (A)

Affiliated to Adikavi Nannaya University  
Jagannaickpur, Kakinada.

## DEPARTMENT OF COMPUTER SCIENCE

### CIRCULAR



Date: 04-10-2023

The Department of Computer Science wishes to organize the Bridge Course on “Fundamentals of Computers” from 09-10-2023 to 18-10-2023 for I B.Sc.(Computer Science) students to enhance their Skills on computers and working of computers.

- Timings : 3.00 PM to 4.PM

*N.N.S. Eswari*  
IN-CHARGE  
DEPT. OF COMPUTER SCIENCE  
ASD GOVT DEGREE COLLEGE (W) (AUTONOMOUS)  
KAKINADA

Incharge of the Department

*V. N. S.*  
PRINCIPAL  
A.S.D.GOV.T.DEGREE COLLEGE (W)  
AUTONOMOUS  
KAKINADA

Principal


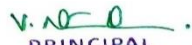
# A.S.D.GOVERNMENT DEGREE COLLEGE FOR WOMEN (A)

Affiliated to Adikavi Nannaya University

Jagannaickpur, Kakinada.

## DEPARTMENT OF COMPUTER SCIENCE

### Activity Register 2023-2024

Date	9-10-2023 TO 18-10-23
Conducted through (DRC/JKC/ELF/NCC/NSS/Department etc.,)	Department of Computer Science
Nature of Activity (seminar/workshop/exten Lecture etc)	<b>BRIDGE COURSE</b> I B.Sc. (Computer Science)
Title of the Activity	<b>Fundamentals of Computers</b>
Name of the Department/ Committee	<b>Department of Computer Science</b>
Details of Resourc persons ( Name, Designation etc.,)	N.Naga Subrahmanyeswari Lecturer in Computer Science K.Suryalakshmi Guest Lecturer in Computer Science
No. of students participated	30
Brief Report on the activity	To get the students acquainted with the Computer fundamentals and programming skills to enhance their caliber in Programming
Name of the Lecturers who planned & conducted the activity	<b>N.Naga Subrahmanyeswari</b> Lecturer in Computer Science <b>K.Surya Lakshmi</b> Guest Lecturer in Computer Science
Signature of the Department In-charge/ Convener of the Committee	 IN CHARGE DEPT. OF COMPUTER SCIENCE A.S.D.GOV'T DEGREE COLLEGE (W) AUTONOMOUS KAKINADA
Signature of the Principal	 PRINCIPAL A.S.D.GOV'T.DEGREE COLLEGE (W) AUTONOMOUS KAKINADA
Remarks	

# **A.S.D.GOVERNMENT DEGREE COLLEGE FOR WOMEN (A)**

**Affiliated to Adikavi Nannaya University**

**Jagannaickpur, Kakinada.**

## **DEPARTMENT OF COMPUTER SCIENCE**

### **BRIDGE COURSE**

**on**

### **“Fundamentals of Computers”**

The Department of Computer Science conducted Bridge course for I B.Sc Honours (Computer Science) students who did not have knowledge about Fundamentals of computers and Programming. With this 8-Day course students got acquainted with the basic fundamentals of computers where in the total introduction of the syllabus is covered and there by the student can rise up to a level to apprehend the subject.

#### **OBJECTIVIES:**

- To introduce the fundamentals of computing devices and reinforce computer vocabulary particularly with respect to personal use of computer hardware and software, the Internet, networking and mobile computing.
- To understand basics of computer and working with operating system.
- To acquire basic skills needed to operate a computer.
- To apply computing in problem solving.

# A.S.D.GOVERNMENT DEGREE COLLEGE FOR WOMEN (A)

Affiliated to Adikavi Nannaya University

Jagannaickpur, Kakinada.

## DEPARTMENT OF COMPUTER SCIENCE

### ATTENDANCE SHEET

S.No	Name of the Student	9/10/23	10/10/23	11/10/23	12/10/23	13/10/23	16/10/23	17/10/23	18/10/23
1	MUKKUDUPALLI SOUMYA	P	P	A	P	P	P	A	P
2	PALIVELA NEHA SWAROOPA	P	P	P	P	A	P	P	P
3	MALLADI AKHILA	P	A	P	P	P	A	P	P
4	YANAMADALA LAKSHMI PRAVALIKA	A	P	P	P	P	P	P	P
5	YEDIDA SRI LALITHA	A	P	P	A	P	P	P	P
6	YEDIDA MADHURI	P	A	P	P	P	P	P	P
7	SYED KARISHMA	P	P	A	P	P	P	P	P
8	PAPPU BHARGAVI	P	P	P	P	P	P	A	P
9	MANE VARSHITA NAGA SAI SRI	P	P	P	P	P	P	P	P
10	GEDELA VAISHNAVI	P	A	P	P	A	P	P	P
11	MYLA SATYA HEMA HASINI ANUSRI	P	P	A	A	P	P	P	P
12	YAMALA SUCHITHA DEVI	P	P	P	P	P	P	P	P
13	KADHA GOWRI SUMA	P	P	P	P	P	P	P	P
14	MOYAATI SATWIKA	A	P	A	P	P	P	P	P
15	REKADI PAVANI	P	P	P	P	P	P	P	A
16	SARAPU ROHINI	A	P	P	P	P	P	P	A
17	GINJALA SRAVANI	P	P	A	P	P	P	P	P
18	UNDRASAPU MANOHARI	P	A	P	P	P	A	P	P
19	BEERA MADHURI	P	P	P	P	P	P	P	P
20	GOLAGANI KALYANI	P	P	P	P	P	P	P	P
21	GADI DEVI	P	A	P	P	P	P	P	P
22	MATHA LEENA	P	P	A	P	P	A	P	A
23	THOTTARAMUDI MAMATHA	P	P	P	A	P	P	P	P
24	PILLA LOVA	A	P	P	P	P	P	P	A
25	YEDDU VASANTHA KUMARI	P	P	A	P	P	A	P	P
26	PALEPU RAMYA	P	P	P	P	P	A	P	P
27	KANGALA PAVANI	A	P	A	P	P	P	P	A
28	KADA PRAVALLIKA	P	P	P	P	P	P	P	P
29	OLETI SIRISHA	P	P	P	P	P	P	P	P
30	CHAGANTINAGA CHAKRAVENI	A	P	P	P	A	P	P	P

N.N.S. Essau  
Signature of the Incharge  
DEPT. OF COMPUTER SCIENCE  
ASD GOVT DEGREE COLLEGE FOR WOMEN  
KAKINADA



# A.S.D.GOVERNMENT DEGREE COLLEGE FOR WOMEN (A)

Affiliated to Adikavi Nannaya University

Jagannaickpur, Kakinada.

## DEPARTMENT OF COMPUTER SCIENCE

### BRIDGE COURSE

2023-2024

### Fundamentals of Computers

S.NO	DATE	SYLLABUS
01	9/10/23	❖ Introduction to Computers
02	10/10/23	❖ Computer Fundamentals
03	11/10/23	❖ Computer Components
04	12/10/23	❖ Working of Computer
05	13/10/23	❖ Hardware
06	16/10/23	❖ Software
07	17/10/23	❖ Classification of Computers
08	18/10/23	❖ Generation of Computers

*N.N.S. Eswari*  
IN CHARGE  
DEPT OF COMPUTER SCIENCE  
A.S.D.GOV'T DEGREE COLLEGE (WOMEN) (NON-RESIDENTIAL)  
KAKINADA

Signature of the Lecturers

# A.S.D.GOVERNMENT DEGREE COLLEGE FOR WOMEN (A)

Affiliated to Adikavi Nannaya University  
Jagannaickpur, Kakinada.

## DEPARTMENT OF COMPUTER SCIENCE



### BRIDGE COURSE TIME TABLE

I B.Sc Honours (Computer Science)

2023-2024

DAY	TIMINGS
9/10/23	3.00 P.M to 4.00 P.M
10/10/23	3.00 P.M to 4.00 P.M
11/10/23	3.00 P.M to 4.00 P.M
12/10/23	3.00 P.M to 4.00 P.M
13/10/23	3.00 P.M to 4.00 P.M
16/10/23	3.00 P.M to 4.00 P.M
17/10/23	3.00 P.M to 4.00 P.M
18/10/23	3.00 P.M to 4.00 P.M

*N.N.S. Eswari*  
IN CHARGE  
DEPT. OF COMPUTER SCIENCE  
ASD GOVT DEGREE COLLEGE (W) (AUTONOMOUS)  
KAKINADA

Signature of the Lecturers

# A.S.D.GOVERNMENT DEGREE COLLEGE FOR WOMEN (A)

Affiliated to Adikavi Nannaya University

Jagannaickpur, Kakinada.

## DEPARTMENT OF COMPUTER SCIENCE

BRIDGE COURSE 2023-2024

Topic: Fundamentals of Computers

### Signature Sheet

S.NO.	NAME OF THE STUDENT	CLASS	SIGNATURE
1.	MUKKUDUPALLI SOUMYA	I B.Sc (CS)	M. Soumya
2.	PALIVELA NEHA SWAROOPA	I B.Sc (CS)	P.Neha Swaroopa
3.	MALLADI AKHILA	I B.Sc (CS)	M. Akhila
4.	YANAMADALA LAKSHMI PRAVALIKA	I B.Sc (CS)	Y. Lakshmi pravalika
5.	YEDIDA SRI LALITHA	I B.Sc (CS)	Y. Sri lalitha.
6.	YEDIDA MADHURI	I B.Sc (CS)	Y. Madhuri
7.	SYED KARISHMA	I B.Sc (CS)	Sd. Karishma
8.	PAPPU BHARGAVI	I B.Sc (CS)	P. Bhargavi
9.	MANE VARSHITA NAGA SAI SRI	I B.Sc (CS)	M. Varshita
10.	GEDELA VAISHNAVI	I B.Sc (CS)	Gr. Vaishnavi
11.	MYLA SATYA HEMA HASINI ANUSRI	I B.Sc (CS)	M.S. H. H. Anusri.
12.	YAMALA SUCHITHA DEVI	I B.Sc (CS)	Y. Suchitha Devi
13.	KADHA GOWRI SUMA	I B.Sc (CS)	K. Gowri Suma
14.	MOYAATI SATWIKA	I B.Sc (CS)	M. Satwika
15.	REKADI PAVANI	I B.Sc (CS)	R. Pavani
16.	SARAPU ROHINI	I B.Sc (CS)	S. Rohini
17.	GINJALA SRAVANI	I B.Sc (CS)	G. Sravani
18.	UNDRASAPU MANOHARI	I B.Sc (CS)	U. Manohari
19.	BEERA MADHURI	I B.Sc (CS)	B. Madhuri
20.	GOLAGANI KALYANI	I B.Sc (CS)	G. Kalyani
21.	GADI DEVI	I B.Sc (CS)	G. Devi
22.	MATHA LEENA	I B.Sc (CS)	M. Leena
23.	THOTTARAMUDI MAMATHA	I B.Sc (CS)	T. Mamatha
24.	PILLA LOVA	I B.Sc (CS)	P. Lova
25.	YEDDU VASANTHA KUMARI	I B.Sc (CS)	Y. Vasantha Kumari
26.	PALEPU RAMYA	I B.Sc (CS)	P. Ramya
27.	KANGALA PAVANI	I B.Sc (CS)	K. Pavani
28.	KADA PRAVALLIKA	I B.Sc (CS)	K. pravallika
29.	OLETI SIRISHA	I B.Sc (CS)	O. Sirisha
30.	CHAGANTINAGA CHAKRAVENI	I B.Sc (CS)	Ch. Chakravani

N. N. S. Eswari  
Signature of the Incharge  
IN-CHARGE  
DEPT. OF COMPUTER SCIENCE

# **COURSE MATERIAL**

## Introduction to Computers:

A **computer** is an electronic device that accepts data from the user, processes it, produces results, displays them to the users, and stores the results for future usage.

**Data** is a collection of unorganized facts & figures and does not provide any further information regarding patterns, context, etc. Hence data means "unstructured facts and figures".

**Information** is a structured data i.e. organized meaningful and processed data. To process the data and convert into information, a computer is used.

## Computer Fundamentals:

Computer is an advanced electronic device that takes raw data as an input from the user and processes it under the control of a set of instructions (called program), produces a result (output), and saves it for future use. Computer fundamentals tutorial provides basic and advanced concepts of Bootstrap. Computer is an *electronic device* i.e. used to work with information or compute. It is derived from the Latin word "computare" which means to calculate. Our Computer fundamentals tutorial includes all topics of Computer fundamentals such as input devices, output devices, memory, CPU, motherboard, computer network, virus, software, hardware etc.

## Basic Fundamental of Computer:

- Step 1 – Accepts data as input.
- Step 2 – Saves the data/instructions in its memory and utilizes them as and when required.
- Step 3 – Execute the data and convert it into useful information.
- Step 4 – Provides the output.

## Computer Architecture:

**Computer architecture** can be defined as a set of rules and methods that describe the functionality, management and implementation of computers. To be precise, it is nothing but rules by which a system performs and operates.

### Sub-divisions

Computer Architecture can be divided into mainly three categories, which are as follows –

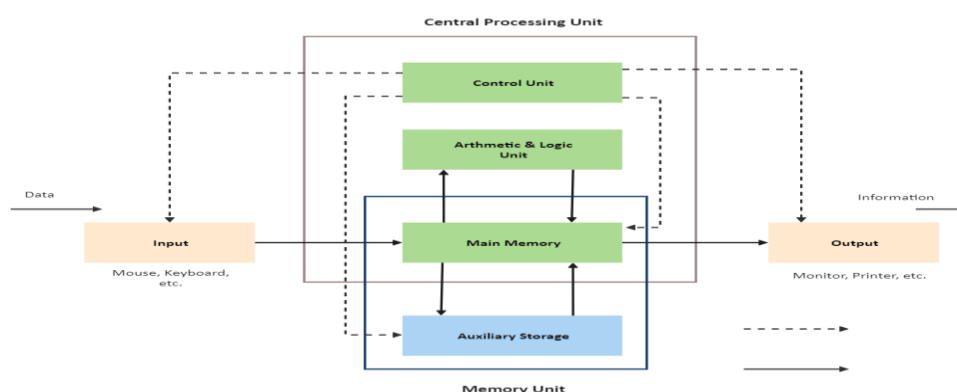
- **Instruction set Architecture or ISA** – Whenever an instruction is given to processor, its role is to read and act accordingly. It allocates memory to instructions and also acts upon memory address mode (Direct Addressing mode or Indirect Addressing mode).
- **Micro Architecture** – It describes how a particular processor will handle and implement instructions from ISA.
- **System design** – It includes the other entire hardware component within the system such as virtualization, multiprocessing.

### Structure

Let us see the example structure of Computer Architecture as given below. Generally, computer architecture consists of the following –

- Processor
- Memory
- Peripherals

All the above parts are connected with the help of system bus, which consists of address bus, data bus and control bus.



## Components of Hardware and Software:

### Hardware

Hardware, which is abbreviated as HW, refers to all physical components of a computer system, including the devices connected to it. You cannot create a computer or use software without using hardware. The screen on which you are reading this information is also hardware. Some of the commonly used hardware in your computer are described below:

### Computer Components:

#### Components of Input / Output devices

##### Input devices:

Following are some of the important input devices which are used in a computer –

- Keyboard
- Mouse
- Joy Stick
- Light pen
- Track Ball
- Scanner
- Graphic Tablet
- Microphone
- Optical Character Reader(OCR)
- Bar Code Reader
- Optical Mark Reader(OMR)

### Keyboard

Keyboard is the most common and very popular input device which helps to input data to the computer. The layout of the keyboard is like that of traditional typewriter, although there are some additional keys provided for performing additional functions.



Keyboards are of two sizes 84 keys or 101/102 keys, but now keyboards with 104 keys or 108 keys are also available for Windows and Internet.

The keys on the keyboard are as follows –

S.No	Keys & Description
1	<b>Typing Keys</b> These keys include the letter keys (A-Z) and digit keys (09) which generally give the same layout as that of typewriters.
2	<b>Numeric Keypad</b> It is used to enter the numeric data or cursor movement. Generally, it consists of a set of 17 keys that are laid out in the same configuration used by most adding machines and calculators.
3	<b>Function Keys</b> The twelve function keys are present on the keyboard which are arranged in a row at the top of the keyboard. Each function key has a unique meaning and is used for some specific purpose.
4	<b>Control keys</b> These keys provide cursor and screen control. It includes four directional arrow keys. Control keys also include Home, End, Insert, Delete, Page Up, Page Down, Control(Ctrl), Alternate(Alt), Escape(Esc).
5	<b>Special Purpose Keys</b> Keyboard also contains some special purpose keys such as Enter, Shift, Caps Lock, Num Lock, Space bar, Tab, and Print Screen.

## Mouse

Mouse is the most popular pointing device. It is a very famous cursor-control device having a small palm size box with a round ball at its base, which senses the movement of the mouse and sends corresponding signals to the CPU when the mouse buttons are pressed.

Generally, it has two buttons called the left and the right button and a wheel is present between the buttons. A mouse can be used to control the position of the cursor on the screen, but it cannot be used to enter text into the computer.



### Advantages

- Easy to use
- Not very expensive
- Moves the cursor faster than the arrow keys of the keyboard.

## Joystick

Joystick is also a pointing device, which is used to move the cursor position on a monitor screen. It is a stick having a spherical ball at its both lower and upper ends. The lower spherical ball moves in a socket. The joystick can be moved in all four directions.



The function of the joystick is similar to that of a mouse. It is mainly used in Computer Aided Designing (CAD) and playing computer games.

## Light Pen

Light pen is a pointing device similar to a pen. It is used to select a displayed menu item or draw pictures on the monitor screen. It consists of a photocell and an optical system placed in a small tube.



When the tip of a light pen is moved over the monitor screen and the pen button is pressed, its photocell sensing element detects the screen location and sends the corresponding signal to the CPU.

## Track Ball

Track ball is an input device that is mostly used in notebook or laptop computer, instead of a mouse. This is a ball which is half inserted and by moving fingers on the ball, the pointer can be moved.



Since the whole device is not moved, a track ball requires less space than a mouse. A track ball comes in various shapes like a ball, a button, or a square.

## Scanner

Scanner is an input device, which works more like a photocopy machine. It is used when some information is available on paper and it is to be transferred to the hard disk of the computer for further manipulation.





## **Microphone**

Microphone is an input device to input sound that is then stored in a digital form.



The microphone is used for various applications such as adding sound to a multimedia presentation or for mixing music.

## **Magnetic Ink Card Reader (MICR)**

MICR input device is generally used in banks as there are large number of cheques to be processed every day. The bank's code number and cheque number are printed on the cheques with a special type of ink that contains particles of magnetic material that are machine readable.



This reading process is called Magnetic Ink Character Recognition (MICR). The main advantages of MICR is that it is fast and less error prone.

## **Optical Character Reader (OCR)**

OCR is an input device used to read a printed text.



OCR scans the text optically, character by character, converts them into a machine readable code, and stores the text on the system memory.

## **Bar Code Readers**

Bar Code Reader is a device used for reading bar coded data (data in the form of light and dark lines). Bar coded data is generally used in labelling goods, numbering the books, etc. It may be a handheld scanner or may be embedded in a stationary scanner.



Bar Code Reader scans a bar code image, converts it into an alphanumeric value, which is then fed to the computer that the bar code reader is connected to.

## **Optical Mark Reader (OMR)**

OMR is a special type of optical scanner used to recognize the type of mark made by pen or pencil. It is used where one out of a few alternatives is to be selected and marked.



It is specially used for checking the answer sheets of examinations having multiple choice questions.

## **Output Devices:**

Following are some of the important output devices used in a computer.

- Monitors
- Graphic Plotter
- Printer



## Monitors

Monitors, commonly called as **Visual Display Unit (VDU)**, are the main output device of a computer. It forms images from tiny dots, called pixels that are arranged in a rectangular form. The sharpness of the image depends upon the number of pixels.

There are two kinds of viewing screen used for monitors.

- Cathode-Ray Tube (CRT)
- Flat-Panel Display

### Cathode-Ray Tube (CRT) Monitor

The CRT display is made up of small picture elements called pixels. The smaller the pixels, the better the image clarity or resolution. It takes more than one illuminated pixel to form a whole character, such as the letter 'e' in the word help.



A finite number of characters can be displayed on a screen at once. The screen can be divided into a series of character boxes - fixed location on the screen where a standard character can be placed. Most screens are capable of displaying 80 characters of data horizontally and 25 lines vertically.

There are some disadvantages of CRT –

- Large in Size
- High power consumption

### Flat-Panel Display Monitor

The flat-panel display refers to a class of video devices that have reduced volume, weight and power requirement in comparison to the CRT. You can hang them on walls or wear them on your wrists. Current uses of flat-panel displays include calculators, video games, monitors, laptop computer, and graphics display.



The flat-panel display is divided into two categories –

- **Emissive Displays** – Emissive displays are devices that convert electrical energy into light. For example, plasma panel and LED (Light-Emitting Diodes).
- **Non-Emissive Displays** – Non-emissive displays use optical effects to convert sunlight or light from some other source into graphics patterns. For example, LCD (Liquid-Crystal Device).

## Printers

Printer is an output device, which is used to print information on paper.

There are two types of printers –

- Impact Printers
- Non-Impact Printers

### Impact Printers

Impact printers print the characters by striking them on the ribbon, which is then pressed on the paper.

Characteristics of Impact Printers are the following –

- Very low consumable costs
- Very noisy
- Useful for bulk printing due to low cost
- There is physical contact with the paper to produce an image

These printers are of two types –

- Character printers
- Line printers

## Character Printers

Character printers are the printers which print one character at a time.

These are further divided into two types:

- Dot Matrix Printer(DMP)
- Daisy Wheel

### Dot Matrix Printer

In the market, one of the most popular printers is Dot Matrix Printer. These printers are popular because of their ease of printing and economical price. Each character printed is in the form of pattern of dots and head consists of a Matrix of Pins of size (5\*7, 7\*9, 9\*7 or 9\*9) which come out to form a character which is why it is called Dot Matrix Printer.



#### Advantages

- Inexpensive
- Widely Used
- Other language characters can be printed

#### Disadvantages

- Slow Speed
- Poor Quality

### Chain Printer

In this printer, a chain of character sets is used, hence it is called Chain Printer. A standard character set may have 48, 64, or 96 characters.

#### Advantages

- Character fonts can easily be changed.
- Different languages can be used with the same printer.

#### Disadvantages

- Noisy

### Non-impact Printers

Non-impact printers print the characters without using the ribbon. These printers print a complete page at a time, thus they are also called as Page Printers.

These printers are of two types –

- Laser Printers
- Inkjet Printers

### Characteristics of Non-impact Printers

- Faster than impact printers
- They are not noisy
- High quality
- Supports many fonts and different character size

### Laser Printers

These are non-impact page printers. They use laser lights to produce the dots needed to form the characters to be printed on a page.



#### Advantages

- Very high speed
- Very high quality output
- Good graphics quality
- Supports many fonts and different character size

#### Disadvantages

- Expensive
- Cannot be used to produce multiple copies of a document in a single printing

## **Inkjet Printers**

Inkjet printers are non-impact character printers based on a relatively new technology. They print characters by spraying small drops of ink onto paper. Inkjet printers produce high quality output with presentable features.



They make less noise because no hammering is done and these have many styles of printing modes available. Color printing is also possible. Some models of Inkjet printers can produce multiple copies of printing also.

### **Advantages**

- High quality printing
- More reliable

### **Disadvantages**

- Expensive as the cost per page is high
- Slow as compared to laser printer

## **Computer Memory:**

A memory is just like a human brain. It is used to store data and instructions. Computer memory is the storage space in the computer, where data is to be processed and instructions required for processing are stored. The memory is divided into large number of small parts called cells. Each location or cell has a unique address, which varies from zero to memory size minus one. For example, if the computer has 64k words, then this memory unit has  $64 * 1024 = 65536$  memory locations. The address of these locations varies from 0 to 65535.

Memory is primarily of three types –

- Cache Memory
- Primary Memory/Main Memory
- Secondary Memory

### **Cache Memory**

Cache memory is a very high speed semiconductor memory which can speed up the CPU. It acts as a buffer between the CPU and the main memory. It is used to hold those parts of data and program which are most frequently used by the CPU. The parts of data and programs are transferred from the disk to cache memory by the operating system, from where the CPU can access them.



### **Advantages**

The advantages of cache memory are as follows –

- Cache memory is faster than main memory.
- It consumes less access time as compared to main memory.
- It stores the program that can be executed within a short period of time.
- It stores data for temporary use.

### **Disadvantages**

The disadvantages of cache memory are as follows –

- Cache memory has limited capacity.
- It is very expensive.

### **Primary Memory (Main Memory)**

Primary memory holds only those data and instructions on which the computer is currently working. It has a limited capacity and data is lost when power is switched off. It is generally made up of

semiconductor device. These memories are not as fast as registers. The data and instruction required to be processed resides in the main memory. It is divided into two subcategories RAM and ROM.



#### Characteristics of Main Memory

- These are semiconductor memories.
- It is known as the main memory.
- Usually volatile memory.
- Data is lost in case power is switched off.
- It is the working memory of the computer.
- Faster than secondary memories.
- A computer cannot run without the primary memory.

#### Secondary Memory

This type of memory is also known as external memory or non-volatile. It is slower than the main memory. These are used for storing data/information permanently. CPU directly does not access these memories, instead they are accessed via input-output routines. The contents of secondary memories are first transferred to the main memory, and then the CPU can access it. For example, disk, CD-ROM, DVD, etc.



#### Characteristics of Secondary Memory

- These are magnetic and optical memories.
- It is known as the backup memory.
- It is a non-volatile memory.
- Data is permanently stored even if power is switched off.
- It is used for storage of data in a computer.
- Computer may run without the secondary memory.
- Slower than primary memories.

#### Working of Computer:

A computer takes input from the user, processes it according to instructions, and displays the result to the user through its output device. The computer is used to store a large amount of data or to store data at high speed.

#### Operating System:

An **Operating System** (OS) is an interface between a computer user and computer hardware. An operating system is a software which performs all the basic tasks like file management, memory management, process management, handling input and output, and controlling peripheral devices such as disk drives and printers.

An operating system is software that enables applications to interact with a computer's hardware. The software that contains the core components of the operating system is called the **kernel**.

The primary purposes of an **Operating System** are to enable applications (spftwares) to interact with a computer's hardware and to manage a system's hardware and software resources.

Some popular Operating Systems include Linux Operating System, Windows Operating System, VMS, OS/400, AIX, z/OS, etc. Today, Operating systems is found almost in every device like mobile phones, personal computers, mainframe computers, automobiles, TV, Toys etc.

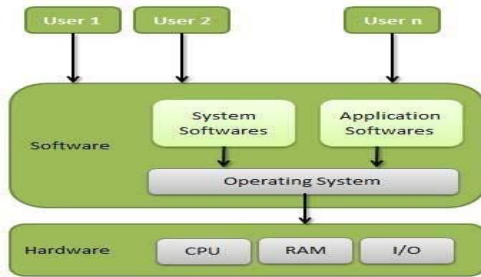
#### Definitions

We can have a number of definitions of an Operating System. Let's go through few of them:

An Operting System is the low-level software that supports a computer's basic functions, such as scheduling tasks and controlling peripherals.

## Architecture

We can draw a generic architecture diagram of an Operating System which is as follows:



### Software

Software is a set of programs, which is designed to perform a well-defined function. A program is a sequence of instructions written to solve a particular problem.

There are two types of software –

- System Software
- Application Software

### System Software

The system software is a collection of programs designed to operate, control, and extend the processing capabilities of the computer itself. These software products comprise of programs written in low-level languages, which interact with the hardware at a very basic level. System software serves as the interface between the hardware and the end users. Some examples of system software are Operating System, Compilers, Interpreter, Assemblers, etc.

Here is a list of some of the most prominent features of a system software –

- Close to the system
- Fast in speed
- Difficult to design
- Difficult to understand
- Less interactive
- Smaller in size
- Difficult to manipulate
- Generally written in low-level language

### Application Software

Application software products are designed to satisfy a particular need of a particular environment. All software applications prepared in the computer lab can come under the category of Application software. Application software may consist of a single program, such as Microsoft's notepad for writing and editing a simple text. It may also consist of a collection of programs, often called a software package, which work together to accomplish a task, such as a spreadsheet package.

Examples of Application software are the following –

- Payroll Software
- Student Record Software
- Inventory Management Software
- Income Tax Software
- Railways Reservation Software
- Microsoft Office Suite Software
- Microsoft Word
- Microsoft Excel
- Microsoft PowerPoint

Features of application software are as follows –

- Close to the user
- Easy to design
- More interactive
- Slow in speed
- Generally written in high-level language

- Easy to understand
- Easy to manipulate and use
- Bigger in size and requires large storage space

### Classification of Computers:

Computer can be broadly classified by their speed and computing power.

Sr.No.	Type	Specifications
1	PC (Personal Computer) or Micro-Computers	It is a single user computer system having a moderately powerful <b>microprocessor</b> . It is termed as a computer that is equipped microprocessor as its <b>CPU</b> .
2	Workstation	It is also a single user computer system, similar to the personal computer, however, has a more powerful microprocessor.
3	Mini-Computer	It is a multi-user computer system, capable of supporting hundreds of users simultaneously.
4	Main Frame	It is a multi-user computer system, capable of supporting hundreds of users simultaneously. Software technology is different from minicomputer.
5	Super-Computer	It is an extremely fast computer, which can execute hundreds of millions of instructions per second.

### PC (Personal Computer)



A PC can be defined as a small, relatively inexpensive computer designed for an individual user. PCs are based on the microprocessor technology that enables manufacturers to put an entire CPU on one chip. Businesses use personal computers for word processing, accounting, desktop publishing, and for running spreadsheet and database management applications. At home, the most popular use for personal computers is playing games and surfing the Internet.

### Workstation



The workstation is a computer used for engineering applications (**CAD/CAM**), desktop publishing, software development, and other such types of applications which require a moderate amount of computing power and relatively high-quality graphics capabilities.

Workstations generally come with a large, high-resolution graphics screen, a large amount of **RAM**, inbuilt network support, and a graphical user interface. Common operating systems for workstations are **UNIX**, and **Windows NT**. Like PC, workstations are also single-user computers like PC but are typically linked together to form a local area network, although they can also be used as stand-alone systems.



## Minicomputer

It is a midsize multi-processing system capable of supporting up to 250 users simultaneously.



## Mainframe

The mainframe is very large in size and is an expensive computer capable of supporting hundreds or even thousands of users simultaneously. Mainframe executes many programs concurrently and supports much simultaneous execution of programs.



## Supercomputer

Supercomputers are one of the fastest computers currently available. Supercomputers are very expensive and are employed for specialized applications that require an immense amount of mathematical calculations (number-crunching).



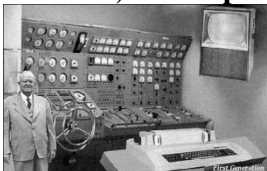
For example, weather forecasting, scientific simulations, (animated) graphics, fluid dynamic calculations, nuclear energy research, electronic design, and analysis of geological data (e.g. in petrochemical prospecting).

## Generations of Computers:

The development of computer systems is normally discussed as the development over different generations.

### First Generation

- The period 1940 to 1956, roughly considered as the First Generation of Computer.
- The first generation computers were developed by using vacuum tube or thermionic valve machine.
- The input of this system was based on punched cards and paper tape; however, the output was displayed on printouts.
- The first generation computers worked on binary-coded concept (i.e., language of 0-1). **Examples:** ENIAC, EDVAC, etc.



### Second Generation

- The period 1956 to 1963 is roughly considered as the period of Second Generation of Computers.
- The second generation computers were developed by using transistor technology.
- In comparison to the first generation, the size of second generation was smaller.
- In comparison to computers of the first generation, the computing time taken by the computers of the second generation was lesser.



### Third Generation

- The period 1963 to 1971 is roughly considered as the period of Third Generation of computers.
- The third generation computers were developed by using the Integrated Circuit (IC) technology.



- In comparison to the computers of the second generation, the size of the computers of the third generation was smaller.
- In comparison to the computers of the second generation, the computing time taken by the computers of the third generation was lesser.
- The third generation computer consumed less power and also generated less heat.
- The maintenance cost of the computers in the third generation was also low.
- The computer system of the computers of the third generation was easier for commercial use.

### Fourth Generation

- The period 1972 to 2010 is roughly considered as the fourth generation of computers.
- The fourth generation computers were developed by using microprocessor technology.



- By coming to fourth generation, computer became very small in size, it became portable.
- The machine of fourth generation started generating very low amount of heat.
- It is much faster and accuracy became more reliable.
- The production cost reduced to very low in comparison to the previous generation.
- It became available for the common people as well.

### Fifth Generation

- The period 2010 to till date and beyond, roughly considered as the period of fifth generation of computers.
- By the time, the computer generation was being categorized on the basis of hardware only, but the fifth generation technology also included software.
- The computers of the fifth generation had high capability and large memory capacity.
- Working with computers of this generation was fast and multiple tasks could be performed simultaneously.
- Some of the popular advanced technologies of the fifth generation include Artificial intelligence, Quantum computation, Nanotechnology, Parallel processing, etc.





# QUESTIONNAIRE

# **A.S.D.GOVERNMENT DEGREE COLLEGE FOR WOMEN (A)**

**Affiliated to Adikavi Nannaya University**

**Jagannaickpur, Kakinada.**

## **DEPARTMENT OF COMPUTER SCIENCE**

### **BRIDGE COURSE TEST**

**on**

### **“Fundamentals of Computers”**

1. Who is the brain of the computer. [ A ]
  - A. CPU
  - B. RAM
  - C. Motherboard
  - D. Hard Drive
2. Part of a computer that allows a user to put information into the computer ? [ B ]
  - A. Output Device
  - B. Input Device
  - C. Operating System
  - D. Software
3. which of the following printers cannot print graphics? [ B ]
  - A. Ink-jet
  - B. Daisy wheel
  - C. Laser
  - D. Dot matrix
4. The physical parts of a computer [ A ]
  - A. Hardware
  - B. Hard Drive
  - C. Disk Drive
  - D. Flopy Drive
5. A worldwide network of computers ? [ C ]
  - A. CPU
  - B. RAM
  - C. Internet
  - D. Network
6. A small picture that represents a folder, program or other things ? [ A ]
  - A. Icon
  - B. Desktop
  - C. Graphic
  - D. Image
7. What was the first computer virus called? [ A ]
  - A. Creeper
  - B. spyware
  - C. trojan horses,
  - D. bootkits

8. An example of non-numeric data is [ D ]  
A. Bank balance  
B. Examination marks  
C. Real numbers  
D. employee address
9. The process of connecting to the internet account is [ A ]  
A. LOGIN  
B. LOGOUT  
C. SIGNIN  
D. SIGNOUT
10. The name of the computer's brain is .... [ C ]  
A. Monitor  
B. hardware  
C. CPU  
D. byte
11. Computer has ..... memory? [ C ]  
A. Main memory  
B. primary memory  
C. both main memory or primary memory  
D. none of these
12. Select the technology that is used in the First generation of computer; [ D ]  
A. Transistor  
B. LSI  
C. VLSI  
D. Vacuum Tube
13. what menu is selected to print? [ C ]  
A. edit  
B. special  
C. file  
D. tools
14. An integrated circuit is [ B ]  
A. A complicated circuit  
B. Fabricated on a tiny silicon chip  
C. Much costlier than a single transistor  
D. An integrating device
15. The components that process data are located in the [ C ]  
A. Input device  
B. Output device  
C. System unit  
D. Storage Components
16. This type of computer is mostly used for automatic operations. [ B ]  
A. remote  
B. hybrid  
C. analog  
D. digital

17. Which of the following is not a type of computer on the basis of operation? [ A ]  
A. Remote  
B. Hybrid  
C. Analog  
D. Digital
18. The main system board of the computer is called \_\_\_\_\_. [ A ]  
A. Motherboard  
B. Processor  
C. Microchip  
D. None of these
19. The monitor of a computer is- [ D ]  
A. storage device  
B. processing device  
C. input device  
D. output device
20. Select the non-volatile memory; [ B ]  
A. SRAM  
B. ROM  
C. DRAM  
D. All of the above
21. Which of the following is an example of a web browser? [ A ]  
A. Google  
B. Apple  
C. Mozilla Firefox  
D. Microsoft
22. GUI abbreviation of; [ D ]  
A. Graph Use Interface  
B. Graphical Universal Interface  
C. Graphical Unique Interface  
D. Graphical User Interface
23. What is called data in computer? [ C ]  
A. to the sign  
B. the number  
C. given information  
D. sign and numerical information
24. Which device allows you to enter data and instructions into a computer? [ A ]  
A. Input device  
B. Output device  
C. ALU  
D. CPU
25. The main function of computer software is to turn data into [ A ]  
A. information  
B. program  
C. object  
D. both a and c

26. What type of intelligence is given to the computer? [ B ]
- A. Human
  - B. artificial
  - C. pure
  - D. Others
27. Who is the father of Computer. [ D ]
- A. Herman Hollertith
  - B. Ada Byron
  - C. Blaise Pascal
  - D. Charles Babbage
28. A set of computer programs used on a computer to perform different tasks is called [ C ]
- A. computer instructions
  - B. processor
  - C. software
  - D. hardware
29. Desktop computer is also known as [ A ]
- A. PC
  - B. Labtop
  - C. Mainframe
  - D. Palmtop
30. The generation constructs on VLSI microprocessor. [ B ]
- A. 1st
  - B. 4th
  - C. 3rd
  - D. 2nd