

## CHAPTER NO2

### FUNDAMENTALS OF OPERATING SYSTEM

1. Which of the following is an example of open source operating system?  
 a) Windows                      b) Mac OS                      c) Unix                      **d) Linux**
2. UNIX operating system is \_\_\_\_\_ operating system?  
 a) Multitasking                      c) Multiuser  
 b) Single user                      **d) Multitasking-Multi user**
3. Which of the following operating system is used with apple computers?  
 a) **Mac OS**                      b) DOS                      c) Windows                      d) Unix
4. Which of the following is not a type of user interface?  
 a) Graphical user interface                      c) Menu drive interface  
 b) Command line interface                      **d) System interface**
5. GUI Stands for:  
 a) General user interface                      **c) Graphical user interface**  
 b) Grayed user interface                      d) Graphs, utilities and icons
6. Windows was developed by:  
 a) **Microsoft**                      c) Sun System  
 b) Bell                      d) HP
7. Which of the following is command line interface operating system?  
 a) MAC OS                      **b) DOS**                      c) Windows                      d) Unix
8. Which of the following is NOT a graphical user interface operating system?  
 a) Mac OS                      **b) DOS**                      c) Windows                      d) Unix
9. Which of the following is friendly user interface?  
 a) **Graphical user interface**                      c) Command line interface  
 b) Menu driven interface                      d) System interface
10. An operating system that allow multiple users to use computer at same time is called?  
 a) Single user Multitasking                      c) Single user OS  
 b) Single user single tasking                      **d) Multi user OS**
11. Which of the following is NOT Multitasking operating system?  
 a) **DOS**                      b) Unix                      c) Linux                      d) Windows
12. In which operating system, jobs are grouped in batches and the computer executes them one-by one?

- a) Time sharing  
**b) Batch processing**
- c) Real time processing  
d) Distributed
- 13. It allows many users to have access to a computer at the same time and shares the computer time**
- a) **Time sharing**  
b) Batch processing
- c) Real time processing  
d) Distributed
- 14. \_\_\_\_\_ processing systems must process information and produce a response within a specified time**
- a) Time sharing  
b) Batch processing
- c) **Real time**  
d) Distributed
- 15. Which icon is a temporary place (folder) for items that the user deletes from the hard disk?**
- a) **Recycle bin**  
b) Computer icon
- c) Folder icon  
d) File icon
- 16. Which icon allows the user to access the contents of computer drives and manage files and folders?**
- a) Recycle bin  
**b) Computer icon**
- c) Folder icon  
d) File icon
- 17. Which icon is used to store files?**
- a) Recycle bin  
b) Computer icon
- c) **Folder icon**  
d) File icon
- 18. Which of the following shortcut keys combination is used to delete a file from hard dish without sending it to Recycle Bin?**
- a) Alt + Delete  
b) Ctrl + Delete
- c) **Shift + Delete**  
d) Backspace + Delete
- 19. It may contain text, image, music or video:**
- a) Recycle bin  
b) Computer icon
- c) Folder icon  
**d) File icon**
- 20. The main screen of Microsoft windows is known as:**
- a) Computer  
**b) Desktop**
- c) Welcome screen  
d) Home
- 21. Which of the following antivirus software comes with Windows 10?**
- a) **Windows Defender**  
b) Norton
- c) Kaspersky  
d) AVG
- 22. What type of the software an operating system is?**
- a) Application software  
c) Utility program
- b) **System software**  
d) Language processor

**23. Which of the following acts as an interface between the user and the computer?**

- a) Application Software
- b) Language processor
- c) Operating system**
- d) Utility Program

**24. What is Process?**

- a) Program in execution**
- b) Job on secondary storage
- c) Contents of RAM
- d) Parts of Operating system

**25. A computer cannot boot if it do not have:**

- a) System software
- b) Language processor
- c) Operating system**
- d) Utility software

**26. A type of software that controls all functions of computer is known as:**

- a) MS EXCEL
- b) Compiler
- c) Operating system**
- d) Device Driver

**27. Which of the following is the part of operating system that organizes, stores and keep track of computer files and folders:**

- a) I/O management
- b) File Management**
- c) User Management
- d) Memory Management

**28. Which of the following is an example of Operating system?**

- a) MS EXCEL
- b) MS WORD
- c) MS POWER POINT
- d) MS WINDOWS**

- 29. DOS is \_\_\_\_\_ Operating System:**
- a) Single User Single Tasking                      b) Multi User Multi Tasking  
c) Single User Multitasking                      d) Multi User
- 30. Which of the following interface is based on textual input?**
- a) System interface                      b) Graphical User Interface  
c) Menu driven interface                      **d) Command Line Interface**

## **Short Questions with Answers**

**Q. 1. Give any three objectives of operating system.**

**Answer:**

**Convenience:** An OS makes a computer more convenient to use.

**Efficiency:** An OS allows the computer system resources to be used in an efficient manner.

**Ability to evolve:** An OS should be constructed in such a way as to permit the effective development, testing and introduction of new system functions without interfering with service.

**Q. 2. What are the main functions of operating systems?**

**Answer:**

- ✓ Process Management
- ✓ Memory Management
- ✓ Input/ output Management
- ✓ File Management
- ✓ Resource Management
- ✓ User Management

**Q. 3. Name different interfaces of operating systems.**

**Answer:**

There are three types of operating systems interfaces.

- I. Command Line Interface
- II. Menu Driven Interface

### III. Graphical User Interface (GUI)

#### **Q. 4. Briefly explain command line interface.**

**Answer:**

##### **Command Line Interface (CLI):**

- In CLI commands are given to computer with keyboard.
- It is based on textual input.
- The user types in commands and press enter to execute it.
- CLI is difficult to use because users have to remember the commands to perform any task.
- Two commonly used operating system that use CLI are:
  - i. DOS ( Disk operating system ) &
  - ii. UNIX

#### **Q.5 What do you know about graphical user interface?**

**Answer:**

##### **Graphical user interface (GUI):**

- GUI is a graphical interface for computer users to interact with computer.
- It uses windows, icons, menus & pointer.
- Window is a rectangular portion of monitor in which information is displayed.
- Icon is a graphical symbol that represents a file, folder, program device.
- To perform a task the user has to select icons or make choices in menus using a pointing device such as mouse.

#### **Q.6 What is windows operating system?**

**Answer:**

##### **Windows operating system:**

- Windows is the most popular operating system used on microcomputers.
- It was developed by Microsoft.
- Many different versions of windows operating system were developed.

Some of these versions are:

- ✓ **Windows 95**
- ✓ **Windows 98**
- ✓ **Windows XP**
- ✓ **Windows 7,8 and 10**
- The latest version is windows 10.

### **Q.7 Briefly explain windows defender.**

**Answer:**

#### **Windows Defender:**

- Windows 10 comes with windows defender.
- It is anti-virus software.
- Computer users do not have to buy anti-virus software.
- Windows defender is also installed as built in anti-virus software.
- It runs in the background and checks for viruses.
- It automatically scans programs and files.

### **Q.8 What does it mean to manage data?**

**Answer:**

#### **Managing data (Files/ Folders):**

- Managing data means storing files in secondary storage devices, such as :
  - ✓ Hard disk
  - ✓ USB flash drive
- Manage data in an organized way
- This helps in finding files easily and quickly.
- File management tools provide facilities to quickly and easily create folders.
- It also allows the user to delete files and folders that are not needed any more.

## **Long Questions with Answers**

### **Q.1. Explain the main functions of operating system.**

**Answer:**

**Following are the main functions of Operating System.**

- ✓ Process Management
- ✓ Memory Management
- ✓ Input/ output Management
- ✓ File Management
- ✓ Resource Management
- ✓ User Management

#### **Process Management:**

- Process Management is an essential part of operating system (OS).
- A process is a program in execution.
- In computer system, multiple processes are executing concurrently.
- Some waiting for their turn to be executed.
- The OS must allocate resources to processes.
- Enable processes to share and exchange information.

#### **Memory Management:**

- Memory Management is the process of allocating memory space.
- When programs are run by users, the operating system allocates portions of free memory to the programs.
- When a program is closed, operating system will free the memory.
- The operating system automatically loads user programs in available memory space.

#### **Input/ Output Management:**

- Input/ output management is the process of controlling all the input/output devices.
- Management of all the I/O devices is the responsibility of operating system.
- Operating system uses input/output controller.
- That controller manages and coordinates the operation of all the input/output devices.

#### **File Management:**

- File management system is part of operating system.

- It organizes stores and keeps track of computer files.
- Computer files can be
  - ✓ Documents
  - ✓ Programs
  - ✓ Images
  - ✓ Videos, etc.
- Operating system controls the common operations performed on files.

These operations include

- ✓ Creating
- ✓ Opening
- ✓ Editing
- ✓ Renaming and moving
- ✓ Copying, deleting and searching files

### **Resource management**

- Operating system manages the resources of a computer.
- The resources of a computer include
  - ✓ Microprocessor
  - ✓ Memory
  - ✓ Printer
  - ✓ Keyboard, etc.
- Operating system allocates resources of a computer to the application program.

### **User management**

- User management is an important feature of operating system for maintain a secure computer system.
- The operating system control by a person known as administrator.
- Administrator installs various programs on the computer system for users.
- A user can login to the computer system by entering the use name and password.

**Q2 what are the common interference of operating system? Explain in detail.**

**Answer:**

There are three types of operating systems interferences.

- Command line interference
- Menu driven interference



- Graphic user interference (GUI)

### **Command line interference (CLI)**

- In cu, command is given to computer with keyboard.
- It is based on textual input.
- The user types in a command and presses the enter key to execute it.
- Two commonly used operating systems that use CLI are:

- I. DOS (Disk Operating System) and
- II. UNIX

- Cu is difficult to use because users have to remembers the commands to perform any task.

### **Manu Driven Interference**

- Menu driven interface presents a menu on the screen
- User makes a choice and then the next menu appears
- Menu driven interface is easy to use as compared to CLI
- The user reads the options and makes his choices
- Menus contain the commands to use the operating system

### **Examples:**

- ✓ Novell's Netware
- ✓ Pro Dos

### **Graphical user interface (GUI):**

- GUI is a graphical interface for computer users to interact with computer.
- It uses, windows, icons, Menus and pointer.
- Window is a rectangular portion of monitor in which information is displayed.
- Icon is a graphical symbol that represents a file, folder, program and device etc.
- To perform a task, the user must select icons and make choices in menus using a pointing device such as mouse.

### **Q.3 In how many types an operating system can be classified?**

#### **Answer:**

Operating system can be classified into two major categories.

- Single-user operating system
- Multi-user operating system

### **Single user operating systems:**

Operating system that is used by a single user at a time is known as single-user operating system.

- It allows a single user to login and use the computer at a time. It is easy to use
- Resources of the computer, such as CPU, memory and input / output devices are not shared with other computers
- It is used on microcomputers
- User can open many programs at the same time
- It requires less memory and costs less

### **Examples:**

- ✓ **DOS**
- ✓ **Windows 95**
- ✓ **Windows XP and Windows 7 etc.**

### **Multi user operating system**

Operating system that allows many users to use a computer at the same time is known as multi-user operating system.

- It allows many users to login to a single big computer and run different programs at the same time.
- It shares the resources of the computer with other users over the network.
- It is used on minicomputers and mainframes.
- Users can communicate with each other and share files.
- It requires a powerful CPU, large memory and large hard drives.
- It supports multiprogramming and time-sharing.

### **Examples:**

- ✓ **Windows NT**
- ✓ **UNIX and**
- ✓ **Linux**

### **Q.4 Explain the following types of operating systems.**

1. Batch processing
2. Time-sharing
3. Real-time operating systems

**Answer:****1. Batch processing system**

- In a batch processing system, jobs are grouped in batches.
- Computers executes them one.by.one.
- When the current job terminates, the computer automatically loads the next job and starts executing it
- Batch processing systems are suitable for tasks where large amount of data has to be collected and processed on a regular basis.

**Examples:**

In examination report card system, all the data of students' examinations is collected and processed as a batch for printing report cards.

**2. Timesharing system**

- Timesharing system is a feature of operating system in which multiple users can run different programs on a large-scale computer.
- It allows many users to have access to a computer at the same time and share the computers time.
- In a timesharing system, the central processing unit is switched rapidly between the programs so that all the user programs are executed simultaneously.
- Timesharing operating systems are used in organizations, such as:
  - ✓ Airline
  - ✓ Bank
  - ✓ Hotel
  - ✓ University, etc.

**Examples:**

Hundreds of students access the university's mainframe computer at the same time and they run different program in timesharing system in interactive mode.

**3. Real time systems**

- Real time operating systems must process information and produce a response within a specified time.
- These are used to control industrial processes such as oil refining.
- Real time operating systems are used to supply immediate response within limited time.

**Example:**

- ✓ Space research programs
- ✓ Military

**Q. 5. Describe the Basic icons of Windows operating system.**

**Answer:**

Following are basic icons for windows operating system

- (a) Recycle Bin
- (b) Computer Icon
- (c) Folder Icon
- (d) File Icon
- (e) Program Icon
- (f) Shortcut Icons

**Recycle Bin:**

- It is temporary place (folder) for items that the user deletes from the hard disk.
- When a file or folder is deleted from a hard disk it goes to the Recycle Bin.
- The user can restore it to its original location.
- User can also delete a file or folder permanently from the Recycle Bin.

**Computer Icons:**

Computer Icon allows the user to access the contents of computer drives and manage files and folders.

**Folder Icon:**

- Folder Icon resembles a physical file folder.
- It is used to store files.
- A folder can have another folder inside it which is known as subfolder.
- Folders are used to keep files in an organized manner on a storage device such as hard disk so that they can be accessed easily.

**File Icon:**

- In a GUI, files are also represented by icons.
- A file may contain text, image, music or video.
- Users recognize a file by its icon.

**Program Icon:**

- Executable program files are also represented by icons.
- Different graphical symbols are used for different program icons.

**Shortcut Icon:**

- Shortcut icons are created to access a program, file or folder quickly.
- They have an arrow at the bottom left corner and the name below it.

## 2.4 EXERCISE SOLUTION

**Q.1 Select the best answer for the following MCQs.****Answer:**

I.	B	II.	A	III.	C	IV.	D	V.	B
VI.	B	VII.	D	VIII.	B	IX.	C	X.	B

**Q.2 Write short answer of the following questions.**

**1) Why operating system is important software for a computer? Give any five reasons.**

**Answer:**

- An Operating system is the most important software that runs on a computer.
- It manages the computer's memory and processes.
- It also manages it's software and hardware.
- It also allows you to communicate with the computer without knowing how to speak the computer's language.
- Operating system acts as an intermediary between programs and the computer

**2) Give any three objectives of operating system?**

**Answer:**

**Convenience:** An OS makes a computer more convenient to use.

**Efficiency:** An OS allows the computer system resources to be used in an efficient manner.

**Ability to evolve:** An OS should be constructed in such a way as to permit the effective development, testing and introduction of new system functions without interfering with service.

**3) Mention few disadvantages of using DOS.**

**Answer:****Disadvantages of DOS:**

- MS-DOS offered no multitasking and no memory protection.
- Less stability
- Plug and play: MS-DOS also wasn't plug and play.
- MS-DOS has limitations memory

**4) Name two operating systems which are used in modern mobile phones.****Answer:**

- Android OS
- I phone OS / IOS

**5) What difficulties a student may face if he/she is not familiar with the operating system of a computer?****Answer:****He/She:**

- will not be able to use the computer
- will not be able to start the programs
- will not be able to install the programs
- will not be to manage memory
- will not be able to manage storage devices, files and folders.

**6) Define UNIX and Windows operating system.****Ans:****UNIX**

- UNIX is a multi - user CLI operating system.
- It was introduced in 1969.
- It allows multiple users to run different programs at the same time.
- UNIX was developed for use on large computer system.

**Windows Operating System:**

- Windows is the most popular operating system.
- It was developed by Microsoft.
- Much easier to learn and use
- No need to memories the commands.
- Allows users to run more than one program at the same time.

**7) Differentiate between single - user and multi - user operating systems.****Answer:**

Operating system can be classified into two major categories.

- Single-user operating system
- Multi-user operating system

### **Single user operating systems:**

Operating system that is used by a single user at a time is known as single-user operating system.

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### **Examples:**

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- It supports multiprogramming and time-sharing.

### **Examples:**

- ✓ **Windows NT**
- ✓ **UNIX and**
- ✓ **Linux**

## **8) What is meant by managing data and why is it important?**

### **Answer:**

**Managing data (Files/ Folders):**

- Managing data means storing files in secondary storage devices, such as :
  - ✓ Hard disk
  - ✓ USB flash drive
- Manage data in an organized way
- This helps in finding files easily and quickly.
- File management tools provide facilities to quickly and easily create folders.
- It also allows the user to delete files and folders that are not needed any more.

**9) What is meant by resources of computer?****Answer:**

- All types of hardware and software are called resource of the computer.
- Hardware resources:
  - ✓ CPU, Motherboard
  - ✓ Video card
  - ✓ Hard drive
  - ✓ Memory, etc.
- Software resources:
  - ✓ System software
  - ✓ Application software

**10) What types of problems may a student face if no antivirus is installed in her/his computer?****Answer:**

If no antivirus is installed, the computer will get infected with viruses and the following common types of problems may be faced:

- Computer will slow down
- Hard Drive may malfunction
- Running out of Storage Space
- Unwanted Programs Start Automatically
- Disabled Security Solution
- Unusual Network Activity
- Error Messages
- False Reports/Advertisements
- Hardware and Accessory Problems, etc.



**Q.3 Write long answer of the following questions.****I. Explain the main functions of operating system.**

**Answer: Following are the main functions of Operating System.**

- ✓ Process Management
- ✓ Memory Management
- ✓ Input/ output Management
- ✓ File Management
- ✓ Resource Management
- ✓ User Management

**Process Management:**

- Process Management is an essential part of operating system (OS).
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- In computer system, multiple processes are executing concurrently.
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- Administrator installs various programs on the computer system for users.
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## **II. Describe operating system interfaces in detail.**

**Answer:** There are three types of operating systems interferences.

- Command line interference
- Menu driven interference
- Graphic user interference (GUI)

### **Command line interference (CLI)**

- In cu, command is given to computer with keyboard.
- It is based on textual input.
- The user types in a command and presses the enter key to execute it.
- Two commonly used operating systems that use CLI are:

III. DOS (Disk Operating System) and

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- Cu is difficult to use because users have to remembers the commands to perform any task.

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- To perform a task, the user must select icons and make choices in menus using a pointing device such as mouse.

### **III. Describe operating system types in detail.**

**Ans: Answer:**

#### **1. Batch processing system**

- In a batch processing system, jobs are grouped in batches.
- Computers executes them one.by.one.
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- Batch processing systems are suitable for tasks where large amount of data has to be collected and processed on a regular basis.

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**Examples:**

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- Real time operating systems must process information and produce a response within a specified time.
- These are used to control industrial processes such as oil refining.
- Real time operating systems are used to supply immediate response within limited time.

**Example:**

- ✓ Space research programs
- ✓ Military

**IV. Write notes on Macintosh and Linux operating systems.****Answer:****Macintosh operating system**

- Mac OS is a series of operating systems.
- It is developed by Apple.
- It was introduced in 1984.

- The latest version is Mac OS X.
- It is a UNIX based user - friendly operating system.
- There are some specialized versions of Mac OS X.

They are used on devices such as iPhone, iPod and iPad.

### **Linux operating system**

- Linux is free open - source operating system.
- It was introduced by Linux Torvalds in 1991.
- It is faster but difficult to use as compared to Macintosh.
- Its source code is freely available on Internet.

Linux OS can be installed on PCs, Laptops, Netbooks, Mobile, Tablet devices, Supercomputers etc.

### **V. Describe the Basic icon of Windows' operating system.**

**Answer:** Following are basic icons for windows operating system

- (a) Recycle Bin
- (b) Computer Icon
- (c) Folder Icon
- (d) File Icon
- (e) Program Icon
- (f) Shortcut Icons

### **Recycle Bin:**

- It is temporary place (folder) for items that the user deletes from the hard disk.
- When a file or folder is deleted from a hard disk it goes to the Recycle Bin.
- The user can restore it to its original location.
- User can also delete a file or folder permanently from the Recycle Bin.

### **Computer Icons:**

Computer Icon allows the user to access the contents of computer drives and manage files and folders.

### **Folder Icon:**

- Folder Icon resembles a physical file folder.
- It is used to store files.
- A folder can have another folder inside it which is known as subfolder.
- Folders are used to keep files in an organized manner on a storage device such as hard disk so that they can be accessed easily.

### **File Icon:**

- In a GUI, files are also represented by icons.
- A file may contain text, image, music or video.
- Users recognize a file by its icon.

**Program Icon:**

- Executable program files are also represented by icons.
- Different graphical symbols are used for different program icons.

**Shortcut Icon:**

- Shortcut icons are created to access a program, file or folder quickly.
- They have an arrow at the bottom left corner and the name below it.

**NOTE:**

**Dear students for obtaining highest percentage in Board exams you should go through all chapters in detail .These worksheets are given only for your help.**

## What is a Study Formula?

Students who get good grades apply this Study Formula EVERY TIME they study for exams.

## What study techniques should you adopt for preparation of Board exams.

Here is a list of study techniques, methods and considerations that would be likely to feature in a top student's Study Formula:

(By the way — this list is in somewhat of a chronological order, meaning the items nearer the top of the list are things you would probably do earlier in their exam preparation, while the things towards the end of the list are things you would probably do closer to the actual exam.)

- Making a list of all the topics that you need to study (i.e. making [Subject Maps](#))
- Looking at [past exams](#) to get an idea of the exam format.

- Writing **study notes**
- Researching topics you don't understand well enough
- Making diagrams and flow-charts of relevant processes
- Consolidating **study notes**
- Attempting practice exams using **past exam papers**
- Thinking about how you're going to allocate your time in the exam (i.e. preparing an exam timetable)