Dear Students!!

In this e-book of 10th class, study material of computer science is being sent to you as per new syllabus (2023-24). You can easily prepare your test / papers by reading these notes and watching the video lectures given below. Following are the links of the video lectures in blue colour. Watch these video lectures by clicking on the relevant link of chapter to have better understanding of various concepts.

10th Class - Computer Science Syllabus & Video Lecture Links (Pbi)			
Chapter	**Explanation of Chapter**	**Solution of Exercise**	**Quick Revision**
Chapter-1 Office Tools	https://youtu.be/Id9j6u84ogo	https://youtu.be/0mdtRvkR1L8	https://youtu.be/nTTjLqVlS8s
Chapter -2 HTML-1	https://youtu.be/NOnCpsDMSYs	https://youtu.be/mQfZJaMMrWQ	https://youtu.be/DhYiCrQHtRo
Chapter -3 HTML-2	https://youtu.be/ULZGiTDL7D0	https://youtu.be/V_TcVpdRovE	https://youtu.be/QCVBtx12JQ4
Chapter -4 HTML-3	https://youtu.be/5xCOSrPMcBI	https://youtu.be/V_TcVpdRovE	https://youtu.be/7PtF2oI18YI
Chapter -5 Operating SYstem	https://youtu.be/QRWDEfZKcGI	https://youtu.be/N3kHjbycNrM	https://youtu.be/WAlILgkMeQ0
Chapter -6 Desktop Publishing	https://youtu.be/9GBAIiFMUaI	https://youtu.be/yYRWP3I6Fng	https://youtu.be/9X3_1LwA2ro
Chapter -7 Microsoft Publisher	https://youtu.be/QWhIyb10sdI	https://youtu.be/jKIT9a49jm4	https://youtu.be/11Q2g2_BzE4
Links of Playlists	https://www.youtube.com/playlist?list=PLja3EaJFAjmbp-HISbHmdHogP10foUyqn	https://www.youtube.com/playlist?list=PLja3EaJFAjmaI7j9srJRw_bNjqBGIcVyf	https://www.youtube.com/playlist?list=PLja3EaJFAjmbHFqNBhHHZzeDGbQM3yhsQ

HTML Practical Lecture Links	Practical Session – HTML Programming (Part-1)	https://youtu.be/DcYz0QX9CVs
	Practical Session – HTML Programming (Part -2)	https://youtu.be/qLlzLKrbhIA
	Practical Session – HTML Programming Using Monile	https://youtu.be/PYFuKCwdIOY

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Please use the following link to download the study material/e-books/e-contents for 6th to 12th classes:

http://cspunjab.nirmancampus.co.in/study.php

Chapter 5th
Operating System

Que:I Multiple choice questions:

1. **An operating system is a _____**
   a. Terminal   b. **System Software**   c. Application Software   d. Processor

2. **_____ refers to keeping several programs in different parts of the main memory at the same time and executing them concurrently.**
   a. Multi-application   b. Multi-processing   c. **Multi-programming**   d. Multi timing

3. **The users of _____ operating system do not interact with the computer directly.**
   a. **Batch Processing System**   b. Time Sharing System   c. Network Operating System   d. Distributed system

4. **A _____ acts as a security guard between the internet and our local area network.**
   a. Operating System   b. Processor   c. **Firewall**   d. Security Threat

5. **GUI stands for _____**
   a. Graph User Interface   b. Graphics User Interface   c. **Graphical User Interface**   d. None of these

Que:II Fill in the blanks:

1. The little CPU time given to each user in the Time-Sharing operating system is known as _____.
2. _____ refers to a mechanism or a way to control the access of programs, processes, or users to the resources defined by a computer system.
3. _____ is a program that acts as an interface between the user and the computer hardware.
4. _____ replicate itself and infects the files and programs of our PC and can make them non-functional.

Ans: 1. **Time Slice**   2. **Protection**   3. **Operating System**
       4. **Computer Viruses**

Que:III Write True or False:

1. In tightly coupled systems, there is a single primary memory, which is shared by all the processors.
2. A Multi-User Operating System is a system that allows only one user to access a computer system at one time.
3. Confidentiality ensures that data exchanged is not accessible to unauthorized users.
4. Firewall cannot block unauthorized access to our PC.
5. Anti-malware is a computer program used to prevent, detect, and remove malware.

Ans: 1. **True**   2. **False**   3. **True**   4. **False**   5. **True**

Que:IV Short answer type Questions:

Q:1 What is an Operating System?
Ans: Operating system is System Software. It is used to operate or run computer. It provides an environment in which the users can work efficiently on the computer system. It is a software that acts as an interface between the user and the computer hardware and controls the execution of all kinds of programs. Examples of Operating Systems are: Windows, DOS, Unix, Linux, Mac OS etc.

Q:2 Write the name of types of operating systems.
Ans: Following are some popular types of Operating Systems:

- Batch Operating System
- Multi-Programming Operating System
- Time-Sharing Operating Systems
- Multi-Processing Operating System
- Network Operating System
- Real Time Operating System

Q:3 Make a list of the common functions of operating system.
Ans: Following list shows the most common functions of an operating system:

1. Program Execution
2. To control Input output related operations
3. File Manipulation
4. Communication
5. Error Detection
6. Resource Management
7. Protection

Q:4 What are Computer Security Threats? Write their names.

Ans: A computer security threat refers to any possible malicious attack. These threats can affect the smooth functioning of our PC. The most harmful types of computer security threats are given below:

- Malware
- Phishing
- Rootkit
- Keylogger

Q:5 What is Firewall?

Ans: A firewall helps us to secure and protect our Information from various Security threats. It acts as a security guard between the internet and our local area network. It prevents hackers from attacking our system. Firewall blocks unauthorized access to our PC.

Que:V Long Answer Type Questions:

Q:1 Explain various functions of operating system.

Ans: The main functions of the operating system are:

1. **Program Execution:** The operating system executes user programs and system programs in the computer.
2. **Input Output Operation:** The operating system controls all the input/output operations in the computer.
3. **File System Manipulation:** The operating system manages the files and directories in the computer system.
4. **Communication:** The operating system handles the communication between different types of devices and programs in a computer system.
5. **Error detection:** The operating system can detect various types of errors in the computer system and correct them too.
6. **Resource Management:** The various resources of the computer system, such as: Memory, CPU, Storage, etc. are also managed by the operating system.
7. **Protection:** The operating system provides various technologies to protect user data and programs.

Q:2 Write the difference between the Single-user and multi-user operating systems.

Ans: Following table shows the major differences between these two systems:

Single-User Operating System	Multi-User Operating System
1. In these Systems, only one user can access the computer at the same time.	1. In these System, more than one user can access a computer at the same time.
2. All the resources are allocated to a single user of the system.	2. All the resources are allocated among multiple users of the system.
3. Processing of system is faster.	3. Processing of system is slower.
4. These systems are simplistic and easy to design.	4. These are complicated and difficult to design
5. Types of Single User Operating systems are: • Single-User Single-Task systems • Single-User Multi-Task systems.	5. The types of Multi-User Operating System are: • Time Sharing Operating System • Distributed Operating System
6. Examples: MS DOS, Windows 95, Personal Computers, etc.	6. Examples: Mainframe Computers such as IBM AS400, Linux & Unix Distributed OS, etc.

**Q:3 What is Time-Sharing Operating System? Write its advantages and disadvantages.**

Ans: In Time sharing systems, many terminals/users are connected to a main computer system at the same time. A little time of CPU is given to each user's program in a circular way. This little CPU time given to each user is known as Time Slice or Time Quantum. The system switches rapidly from one user to the next user.

Advantages of Time-Sharing System:
- Reduces CPU idle time.
- Reduces the output of paper.
- Avoids duplication of software.

Disadvantages of Time-Sharing System:
- Large main memory is required for user programs.
- It requires CPU scheduling techniques.
- Memory management is required.
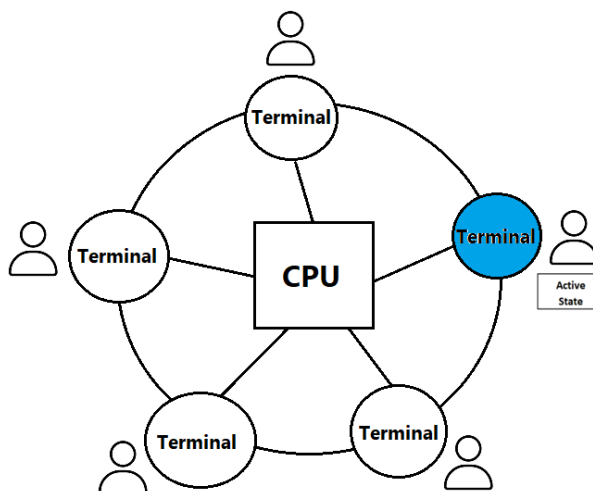
Q:4 What is Multi-Processing Operating Systems? Explain.

Ans: Multiprocessing system is used to describe interconnected computers, with two or more CPUs. These systems have the ability to simultaneously execute several programs. In such a system, instructions from different and independent programs can be processed simultaneously by different CPUs. The basic organization of a typical multiprocessing system is shown below:
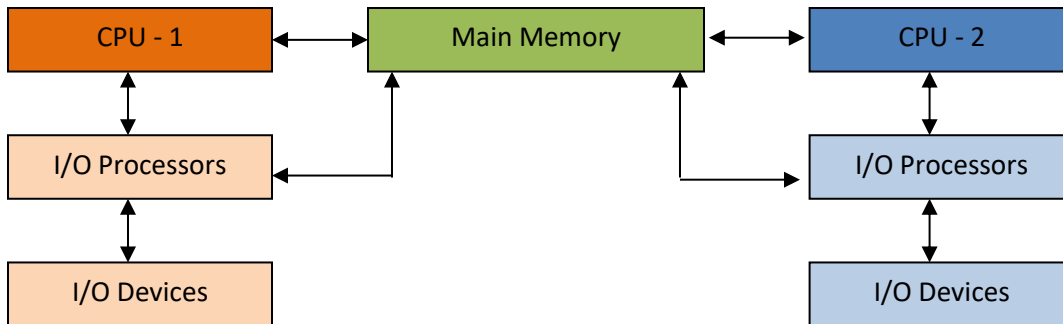
Fig: Basic Organization of Multiprocessing System

Multiprocessing systems are of two types:

- **Tightly Coupled Systems: These systems are also known as Parallel Processing Operating Systems. In these systems, there is a single primary memory, which is shared by all the processors.**
- **Loosely Coupled Systems: These systems are also known as Distributed Operating Systems. In these systems, each processor has its own local memory.**