Two marks

MAY 2021

Time : Three hours
U/ID 46510/UCC4B

Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer any TEN questions.

1. List any four operating system.

2. What is system program?

3. What is deadlock?

4. What are multiprocessor system?

5. What is dynamic loading?

6. What are the scheduling criteria?

7. What is address binding?

8. What is internal fragmentation?

9. What is swapping?

10. What is RAID?

11. Define : Paging.

12. What is directory structure?

Answers

1. Four operating systems: Windows, macOS, Linux, Android.

2. A system program is software that manages and controls computer hardware and provides services to other software applications.

3. Deadlock is a situation in which two or more processes are unable to proceed because each is waiting for the other to release a resource.

4. Multiprocessor systems have multiple CPUs (central processing units) that work together to execute tasks simultaneously, improving performance.

5. Dynamic loading is a technique in which a program's modules are loaded into memory only when they are required, saving memory space.

6. Scheduling criteria include factors like CPU utilization, throughput, waiting time, and response time.

7. Address binding is the process of associating a memory address with a particular variable or instruction during compilation or execution.

8. Internal fragmentation occurs when memory allocated to a process is larger than what the process actually needs, leading to wasted memory.

9. Swapping is the process of moving a process from main memory to secondary storage to free up space for other processes.

10. RAID (Redundant Array of Independent Disks) is a technology used to store data across multiple disks for redundancy and improved performance.

11. Paging is a memory management technique that divides physical memory into fixed-sized blocks or pages, allowing for efficient memory allocation.

12. Directory structure is the organization of files and directories on a storage device, which typically forms a hierarchical tree-like structure.

MAY 2022

Time : Three hours
U/ID 46510/UCC4B

Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer any TEN questions.

1. Define time sharing.

2. What is meant by dual mode operation?

3. Define the term-cooperating process.

4. What is deadlock?

5. What is paging?

6. Define virtual memory.

7. What are file operations?

8. What is a directory?

9. What is Allocation method?

10. Define segmentation.

11. What is kernel I/O?

12. What is encryption?

Answers

1. Time sharing is an operating system technique where multiple users or processes share a single computer's resources by providing each with a small time slice to execute their tasks.

2. Dual mode operation refers to a computer system's ability to switch between two modes: user mode (restricted access) and kernel mode (privileged access) to ensure the protection and security of the system.

3. Cooperating processes are processes that can communicate and synchronize with each other to achieve a common goal or share resources.

4. Deadlock is a situation in which two or more processes are unable to proceed because each is waiting for the other to release a resource.

5. Paging is a memory management technique that divides physical memory into fixed-sized blocks or pages to efficiently allocate and manage memory.

6. Virtual memory is a memory management technique that uses a combination of physical and disk-based memory to provide the illusion of a larger, contiguous address space to applications.

7. File operations include tasks like creating, reading, writing, and deleting files on a computer system.

8. A directory is a file system component used to organize and manage files and other directories in a hierarchical structure.

9. Allocation method refers to the strategy used for allocating file storage space on a storage device, such as contiguous allocation, linked allocation, or indexed allocation.

10. Segmentation is a memory management technique that divides memory into segments, each with its own base and limit, used to improve memory protection and sharing.

11. Kernel I/O refers to the input and output operations managed by the operating system's kernel, ensuring efficient and secure communication with hardware devices.

12. Encryption is the process of converting data into a coded format to protect it from unauthorized access, ensuring data security and confidentiality.

DECEMBER 2022

Time : Three hours
U/ID 46510/UCC4B

Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer any TEN questions.

1. Define the term ‘Operating Systems’ with examples.

2. Define IPC.

3. List the process states.

4. What is compile time binding?

5. Define virtual memory.

6. What are Fragmentation?

7. What are different types of access methods?

8. What is demand paging?

9. What is file structure?

10. Define allocation methods.

11. What is authentication?

12. What is threats?

Answers

1. Operating Systems are software that manage computer hardware and provide an interface for user interaction. Examples include Windows, macOS, Linux, and Android.

2. IPC stands for Inter-Process Communication and refers to mechanisms that allow processes to exchange data and information with each other.

3. Process states typically include new, ready, running, waiting, and terminated.

4. Compile-time binding is the association of program instructions with memory addresses at the time of compilation.

5. Virtual memory is a memory management technique that combines physical and disk-based memory to create an illusion of a larger memory space.

6. Fragmentation refers to the inefficient use of memory, where allocated memory becomes divided into small, non-contiguous chunks, leading to wasted space.

7. Different types of access methods include sequential, direct, and indexed access methods used for reading and writing data in files.

8. Demand paging is a memory management technique where pages are loaded into memory only when they are needed, reducing initial loading times.

9. File structure defines how data is organized and stored within a file, including the format and organization of records and fields.

10. Allocation methods are strategies for allocating storage space for files, like contiguous, linked, or indexed allocation.

11. Authentication is the process of verifying the identity of a user or system to ensure secure access to resources.

12. Threats are potential dangers or risks to a computer system, network, or data, such as viruses, malware, or hacking attempts.

DECEMBER 2020

Time : Three hours
U/ID 46510/UCC4B

Maximum : 75 marks

PART A — (10 × 2 = 20 marks) Answer any TEN questions.

1. Define the term Operating System with examples.

2. Write examples of deadlock

3. What is meant by process?

4. What is a CPU Scheduling?

5. Define Multiprogramming

6. What is meant by dual mode operation?

7. Define : Virtual Memory.

8. Define :Paging.

9. What is a fragmentation?

10. Define: Time Sharing

11. List two advantages of file system structure

12. What is a Single level directory?

Answers

1. An operating system is system software that manages computer hardware and provides services for software applications. Examples include Windows, macOS, Linux, and Android.

2. Examples of deadlock situations include:

a. Process A holding a resource needed by process B, while process B holds a resource needed by process A.
b. Two trains approaching each other on a single-track railway with only one available track.

3. A process is a program in execution. It includes the program counter, stack, registers, and other data.

4. CPU Scheduling is the process of determining which process gets to use the CPU at a given time, considering factors like priority and fairness.

5. Multiprogramming is a technique that allows multiple programs to be loaded into memory and executed concurrently, improving CPU utilization.

6. Dual mode operation refers to a computer system's ability to switch between user mode (restricted access) and kernel mode (privileged access) for security and protection.

7. Virtual Memory is a memory management technique that uses both physical and disk-based memory to create the illusion of a larger memory space for applications.

8. Paging is a memory management technique that divides physical memory into fixed-sized blocks or pages to efficiently allocate and manage memory.

9. Fragmentation refers to inefficient memory utilization, including external fragmentation (wasted space outside allocated memory) and internal fragmentation (wasted space within allocated memory).

10. Time Sharing is an operating system feature that allows multiple users to share a computer's resources by providing each with a small time slice for their tasks.

11. Two advantages of file system structure:
a. Organization: It provides an organized and efficient way to store and retrieve data.
b. Security: It allows for access control and data protection.

12. A Single Level Directory is a file system structure where all files are organized in a single directory, without any subdirectories.

DECEMBER 2021

Time : Three hours
U/ID 46510/UCC4B

Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer any TEN questions.

1. Name the four components of computer system.

2. What is multi-programming?

3. What is system call?

4. What is mutual exclusion?

5. What is dynamic loading?

6. What is Allocation Method?

7. What is Demand Paging?

8. What is free space management?

9. What is I/O System?

10. What is RAID?

11. Define Paging.

12. What is threat?

Answers

1. The four components of a computer system are: CPU (Central Processing Unit), Memory (RAM), Input/Output Devices, and Storage (Hard Drive or SSD).

2. Multi-programming is an operating system technique that allows multiple programs to be loaded into memory and executed concurrently to maximize CPU utilization.

3. A system call is a function provided by the operating system that allows processes to request services from the kernel, such as input/output operations or memory management.

4. Mutual exclusion is a concept in concurrent programming that ensures that only one process or thread can access a critical section of code at a time to prevent data corruption.

5. Dynamic loading is a technique in which a program's modules are loaded into memory only when they are required, saving memory space.

6. Allocation Method refers to the strategy used to allocate storage space for files, such as contiguous allocation or linked allocation.

7. Demand Paging is a memory management technique where pages are brought into memory only when they are needed, reducing initial loading times.

8. Free space management is the process of keeping track of available and used space on storage devices to efficiently allocate and manage storage.

9. The I/O System refers to the components and mechanisms in an operating system responsible for input and output operations between the computer and its peripherals.

10. RAID (Redundant Array of Independent Disks) is a technology used to store data across multiple disks for redundancy and improved performance.

11. Paging is a memory management technique that divides physical memory into fixed-sized blocks or pages to efficiently allocate and manage memory.

12. A threat is a potential danger or risk to a computer system, network, or data, such as viruses, malware, hacking attempts, or other security risks.