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DEPARTMENT OF COMPUTER SCIENCE AND APPLICATIONS

QUESTION BANK

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TITLE OF THE PAPER	**:**	**OPERATING SYSTEM**
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ONE WORK

UNIT – I INTRODUCING OPERATING SYSTEM

1. An operating system is_____

A System Software
B Application Software
C Developing Software
D All of these

Ans: A. System Software

2. The minimum number of frames to be allocated to a process is decided by the_____

A The amount of available physical memory
B operating system
C instruction set architecture
D instruction set architecture

Ans: C. instruction set architecture

3. How many types in operating system main task network manager?

A 5
B 3
C 7
D 9

Ans: A. 5

4. Expand RAM

A Read Access Memory
B Random Access Memory
C Random Allocated Memory
D Read Allocated Memory

Ans: B. Random Access Memory

5. The process manager decides how to allocates the _____

A ALU
B **RAM**
C ROM
D CUP

Ans: D. CUP

6. Expand IBM:

A International Business Management
B International Business Machine
C Interactive Business machine
D Interactive Business Management

Ans: B. International Business Machine

7. _____are powerful computers that provide specialized services to other computers on client networks

A Software
B hardware
C Server
D CPU

Ans: C. Server

8. How many types of operating system?

A 5
B 7
C 8
D 9

Ans: A. 5

9. The operating system provides immediate feedback to the user and response time can be measured in_____

A Low time
B More time less
C Much faster
D Fraction of seconds

Ans: D. Fraction of seconds

10. Hybrid system combination of_____

A Embedded
B Embedded and batch
C batch and interactive
D real and interactive

Ans: C. batch and interactive

ONE MARK

UNIT – II MEMORY MANAGEMENT

1. The sections of a disk are called _____

A Sectors B overlays

C cache D segments

Ans: A. sectors

2. The sections of a main memory is called _____

A demand paging B subroutine

C page frames D frames

Ans: C. page frames

3. SMT stands for _____

A Segment Main Table B Segment Map Table

C Subroutine Map Table D Segment Main Time

Ans: B. Segment Map Table

4. _____ is an example for logical group

A page frames B subroutine

C Overlays D SMT

Ans: B. subroutine

5. Computer systems automatically store data in an intermediate memory unit called _____

A page memory B SMT memory

C cache memory D demand page memory

Ans: C. cache memory

6. Page frames are all the

A same size B different size

C memory allocation D exact size

Ans: A. same size

7. RAM stands for

A Random And Memory B Read Access Memory

C Random Access Memory D Read And Memory

Ans: C. Random Access Memory

8. EAT=

A PFXS+(1-PF)X(ma) B 1-ma

C PFXS (1-ma) D PFXS(ma)

Ans: A. PFXS+(1-PF)X(ma)

9. As pages are swapped between main memory and secondary storage ,all tables are

A deleted B inserted

C updated D segmented

Ans: C. updated

10. A CPU cache is _____ cache

A software B hardware

C memory D deleting

Ans: B. hardware

ONE MARK

UNIT – III PROCESSOR MANAGEMENT

1. A _____ is an inactive unit, such before we begin ,lets clearly define some terms.

A process B Program

C Task D multi process

Ans: B. program

2. _____requires that the processor be allocated to each job or to each process for a period of time and de-allocated at an appropriate moment.

A preprocessor B programmer

C multi- program D task

Ans: C. multi- program

3. The _____, also known as the CPU, is the part of the machine that performs the calculations and executes the programs.

A Processor B polices

C dead lock D interrupts

Ans: A. processor

4. The process scheduler is the ___ that assigns the CPU execute the processor of those jobs placed on the READY queue by the job scheduler.

A low-level scheduler B high-level scheduler

C middle-level scheduler D process scheduler

Ans: A. low-level scheduler

5. The control program that handles the interruption sequence of events is called the_____

A Controls B Back end

C Units D interrupt

Ans: D. interrupt

6. ____is more serious than indefinite postponement because it affects more than one job.

A Deadlock B interrupt

C Handler D starving

Ans: A. Deadlock

7. _____ one form of multiprocessing , is an situation in which two or more processor operate in unison.

A Equal process B parallel process

C multi process D low process

Ans: B. parallel process

8. _____processor have several processors on a single chip.

A multi-core B multi-program

C multi-task D multi-process

Ans: A. multi-core

9. The ___ configuration is an asymmetric multi-processing system.

A single user B multi- processor

C Demand D master

Ans: C. demand

10. In a highly interactive environment , there also a third layer of the process manager called the _____

A low-level scheduler B high-level scheduler

C middle-level scheduler D process scheduler

Ans: C. middle-level scheduler

ONE WORK

UNIT – IV DEVICE MANAGEMENT

1. _____ are assigned to only one job at a time.

A Dedicated devices B shared devices

C storage devices D virtual devices

Ans: A. Dedicated devices

2. _____can be assign to several process.

A Dedicated devices B shared devices

C storage devices D virtual devices

Ans: B. shared devices

3. Expand: USB

A United Serial Bus B United Several Bus

C Universal Several Bus D Universal serial Bus

Ans: D. Universal serial Bus

4. ____was developed for routine secondary storage in early computer systems

A Magnetic tape B position

C Records D storage media

Ans: A. Magnetic tape

5. Magnetic tape__ feet long

A 2500 B 2678

C 6574 D 2400

Ans: D. 2400

6. Expand IRG

A interactive-record gap B inter-record gap

C interactive-record grid D inter-record grid

Ans: B. inter-record gap

7. Each circle is a___

A Path B Head

C Track D cost

Ans: C. track

8. Expand CAV

A Constant Angular Velocity B Continue Angular Velocity

C Constant Aires Velocity D Continue Aries Velocity

Ans: B. Continue Angular Velocity

9. __drives is fast.

A movable-head disk B search time

C Transfer time D fixed-head disk

Ans: D. fixed-head disk

10. The __monitors the status of every device control unit and channel.

A I/O scheduler B I/O request

C I/O traffic handler D I/O device handler

Ans: C. I/O traffic handler

ONE MARK

UNIT – V FILE MANAGEMENT

1. A___ is a group of related bytes

A Track B Field

C File D Data

Ans: B. Field

2. A___ is a group of related fields

A Time B Field

C Record D File

Ans: C. Record

3. A____ is a group of related records

A Field B records

C File D data

Ans: C. File

4. ___are special files with listings of filenames and their attributes

A Directories B database

C Interact D sector

Ans: A. Directories

5. File manager that a ___ must be created.

A Record B database

C Program D file

Ans: D. File

6. ____length records are the most common because they are the easiest to access directly.

A Fixed B variable

C Physical D record format

Ans: A. Fixed

7. All files are composed of___

A Variables B data

C Field D records

Ans: D. records

8. Records use ___storage, they are stored one after the other.

A Contiguous B Non - contiguous

C Index D non –indexed

Ans: A. contiguous

9. Some systems these are called the ____ of the file and are linked together with pointers.

A Increase B decrease

C Extents D direction

Ans: C. extents

10. Expand CBA

A Current Byte Address B Compute Byte Address

C Current Bit Address D Compute Bit Address

Ans: A. Current Byte Address

TWO MARKS
UNIT – I INTRODUCING OPERATING SYSTEM

1. What is an operating system?

Ans: An operating system is system software that manages computer hardware and software resources and provides common services for computer programs .An operating system ,in its most general sense ,is software that allows a user to run another applications on a computing device .While it is possible for a software application to interface directly with hardware.

2. What is the kernel?

Ans: This provides basic-level control over all of the computer hardware devices .Main roles include reading data from memory and writing data to memory, process execution orders, determining how data is received and sent by devices such as the monitor, keyboard and mouse, and determining how to interpret data received from networks.

3. What is an user interface?

Ans: This component allows interaction with the user , which may occur through graphical icons and a desktop or through a command line

4. What are the types of operating systems?

Ans: There are five types of operating system
1. Batch systems 2. Interactive systems 3. Real-time systems
4.Hybrid systems 5.Embedded systems

5. What is mean by memory manager?

Ans: The memory manager is in-charge of main memory, also known as RAM, short for Random Access Memory. The memory manager checks the validity of each request for memory space and, if it is a legal request its allocate a portion of memory that isn't already in use. In a multiuser environment, the memory manager sets up a table to keep track of who using which section memory.

6. What is an processor manager?

Ans: The processor manager decides how to allocate the Central Processing Unit (CPU). An important function of the processor manager is to keep track of status of each process. A process is defined here as an instance of execution of a program.

7. Write short note on brief history of machine hardware?

Ans: To appreciate the role of the operating system, we need to discuss the essential aspects of the computer system hardware, the physical machine electronic components, including memory chips, input/output devices, storage devices and CPU.

1. Main memory 2. i/o devices 3.CPU

8. What is a server?

Ans: Servers are powerful computers that provide specialized services to other computers on client networks. Ex can include print servers, internet servers, e-mail servers, etc.. Each performs critical network tasks.

9. What are the types of Real time systems?

Ans: There are two types 1.hard real-time system 2.Soft real-time system

10. What is mean by batch systems?

Ans: The users of a batch operating system do not interact with the computer directly. Each user prepares his jobs on an off-line device like punch cards and submits it to the computer operator. To speed up processing, jobs with similar needs are batched together and run as a group.

TWO MARKS

UNIT – II MEMORY MANAGEMENT

1. What is memory management?

Ans: Memory management is the process of controlling and coordinating computer memory, assigning portions called blocks to various running programs to optimize overall system performances

2. What are the types of fragmentation?

Ans: There are two types of fragmentation 1.Internal fragmentation 2.external fragmentation.

3. Define de-allocation.

Ans: De-allocation of memory by the operating system (OS) is a way to free the Random Access Memory (RAM)of finished process and allocate new ones. We all know that the computer memory comes with a specific size.

4. Define page memory allocation.

Ans: Before a job is loaded into memory, it is divided into parts called pages that will be loaded into memory locations called page frames .Paged memory allocation is based on the concept of dividing each incoming job into pages of equal size.

5. Define demand page memory allocation.

Ans: The segmented /demand paged memory allocations scheme evolved from the two we have just discussed. It is a combination of segmentation and demand paging ,and it offers the logical benefits of segmentation , as well as the physical benefits of paging.

6. Define virtual memory.

Ans: Virtual memory is a memory management capability of an Operating System that uses hardware and software to allow a computer to compensate for physical memory shortages by temporarily transferring data from random access.

7. What is page fault?

Ans: If the referred pages are not present in the main memory than there will be a miss and the concept is called page miss or page fault .the CPU has access to the missed pages from the secondary memory.

8. What is swapping?

Ans: Swapping is a process out means removing all of its pages from memory, or marking them so that they will be removed by the normal pages replacement process.

9. What is partitioned model?

Ans: The above disadvantages of the single contiguous model can be overcome by another memory management technique called partitioned model.

10. What is fixed partitioning?

Ans: The earliest and one of the simple technique which can be used to load more than one processes into the main memory is fixed partitioning or contiguous memory allocation

11. Define cache memory.

Ans: Caching is based on the idea that the system can use a small amount of expensive high-speed memory to make a large amount of slower, less-expensive memory work faster than main memory.

TWO MARKS

UNIT – III PROCESSOR MANAGEMENT

1. Define process scheduler.

Ans: A job has been placed on the READY queue by the job scheduler , the process scheduler takes over . It determines which jobs gets the CPU , when , and for how long .The process scheduler is the low-level scheduler.

2. What is middle-level scheduler?

Ans: In an highly interactive environment, there also a third layer of process manager called the middle-level scheduler.

3. List out process scheduling algorithms.

Ans: There are six process in process scheduling algorithms
1. First-come, first-served. 2.Shortest job next 3.priority scheduling
4. Shortest remaining time. 5. Round robin. 6. multiple level queues

4. What is interrupts?

Ans: Memory manager issued page interrupts to accommodate job requests. An another type of interrupts that occurs when the time quantum expires and the processor is de-allocated from the running job and allocated to another one.

5. What is interrupt handler?

Ans: The control program that handles the interruption sequence of events is called the interrupt handler.

6. Define Deadlock.

Ans: Deadlock is more serious than indefinite postponement or starvation because it affects more than one job. Resources are being tired up, the entire system not just a few programs is affected .EX: Traffic Jam

7. How many cases in deadlock?

Ans: There are seven cases in deadlock
1. Deadlock on file request. 2. Deadlock in database
3.Deadlock in dedicated device allocation 4.Deadlock in multiple device allocation
5. Deadlock in spooling 6.Deadlock in a network 7. Deadlock in disk sharing

8. How many conditions for deadlock?

Ans: There are three conditions in deadlocks
1.Mutual exclusion 2.Resource holding 3.circular wait

9. Define starvation.

Ans: We have concentrated on deadlocks, the results of liberal allocation of resources. At the opposite end is starvation, the result of conservative allocation of resources where a single job is prevented from execution.

10. What is multi-core processor?

Ans: Multi-core processor has several processors on a single chip. As a processor become smaller in size and faster in processing speed, CPU designers begin to use nanometer-sized transistors.

TWO MARKS

UNIT – IV DEVICE MANAGEMENT

1. How many types of devices?

Ans: There are three types of devices: shared devices, dedicated devices and. virtual devices

2. Define dedicated devices.

Ans: Dedicated devices are assigning to only one job at a time. They serve that job for the entire time its active are until it release them. Some devices are tape, drives ,printers, and plotter

3. Define shared devices.

Ans: Shared devices can be assigning to several process. For instances, a disk, or any other direct storage devices, can be shared by several process.

4. List out USB controllers assign bandwidth priority.

Ans: USB controls three priority: Highest priority, Medium priority and Lowest priority

5. What are DASD and SASD?

Ans: **DASD** - Direct Access Storage Device. **SASD** - Sequential Access Storage Device

6. What is sequential access storage media?

Ans: Magnetic tape was developed for routine secondary storage in early computer system and features records that are stored serially, one after the other .The length of these records is usually records determined the application program.

7. Define IRG.

IRG - Inter-record Gap.

Ans: The tape needs time and space to; stop a gap is inserted between each record .This inter-record gap is about ½ inch long regardless of the sizes of the records it separates.

8. How many types in access storage devices?

Ans: There are three categories: Magnetic disks, Optical disks and Flash memory.

9. Define optical disk storage.

Ans: The advent of optical disk storage made possible by developments in laser technology. Among the many difference between an optical disc and a magnetic disk is the design of the disk track and sectors.

10. Define I/O scheduler.

Ans: The I/O scheduler performs the same job as the process scheduler on processor management. That is it allocates the devices, control units, and channels. Under heavy loads on the number of request is greater than number of available paths, the I/O scheduler must decide to request to satisfy first.

TWO MARKS

UNIT – V FILE MANAGEMENT

1. What is meant by capability list?

Ans: A capability list shows the access control information from a different perspective .It lists every user and the files to which each has access.

2. Define hashing algorithm.

Ans: The program used to store the data follows a set of instructions, called A hashing algorithm that transforms each key into a number; the records logical address.

3. Define file manager.

Ans: The file manager controls every file in the system. We learn how files organized logically, how they are stored physically, how they are accessed , and who is allowed to access them. We also study the interaction between the file manager and the device manager.

4. Define responsibility of file manager.

Ans: The file manager has a complex job. Keep track of there each file is stored. Use a policy that will determine where and the files will be stored. Allocate each file when a user has been cleared for access to it, and then record its use. De-allocate the file when the file is to be returned to storage.

5. Define directories.

Ans: Directories are special files with listings of filenames and their attributes. Data collected to monitor system performance and provide for system accounting is collected into files.

6. Define Sub-directories.

Ans: File managers create an MFD for each volume that can contain entries for both files sub-directories. A sub-directory is created when a user opens an account to access the computer system.

7. Define filename.

Ans: Filename within a single directory, filenames must be unique : in some operating system the filenames are case sensitive.

8. Define record format.

Ans: All files are composed of records. When a user gives a command to modify the contents of a file, it's actually a command to access records with in the file. Within each file, the records are all presumed to have to the same format.

9. Define contiguous storage.

Ans: When records use contiguous storage, they are stored one after the other. This was the scheme used in early operating systems. It's very simple to implement and manage.

10. Define sequential record organization.

Ans: Sequential record organization is by for the easiest to implement because records are stored and retrieved serially, one after the other. To find a specific record the file is searched from its beginning until records is found.

FIVE MARKS

UNIT – I INTRODUCING OPERATING SYSTEM

1. Define operating system software?
2. Write a brief history of machine hard ware?
3. Explain the different types of operating system?
4. Discuss about object-oriented design.

UNIT – II MEMORY MANAGEMENT

1. Explain the different type of partition in memory management.
2. What are the advantages and disadvantage of segmented memory management?
3. Write short note on single user contiguous scheme.
4. Write short note on fixed partitions.
5. Write short note on dynamic partitions.
6. Explain de-allocation.
7. Explain virtual memory.
8. Explain paged memory allocation.

UNIT – III PROCESSOR MANAGEMENT

1. Describe about process scheduling algorithms.
2. How do you avoid deadlock? Explain.
3. Describe job scheduling versus process scheduling process scheduler.
4. Explain Process scheduler.
5. Explain 7 cases of deadlock.
6. Explain starvation.
7. Discuss about multi-core processor

UNIT – IV DEVICE MANAGEMENT

1. Differentiate the three categories of devices.
2. How to calculate the access times for a fixed head disk drive? Explain.
3. Explain sequential access storage.
4. Discuss about components of the I/O subsystems.

UNIT – V FILE MANAGEMENT

1. Discuss about physical storage allocation
2. What are levels in file management system? Explain
3. Discuss the responsibilities of the file manager
4. Explain briefly basic concept of access control matrix and access control lists
5. Explain file organization

TEN MARKS

UNIT – I INTRODUCING OPERATING SYSTEM

1. Describe about the function of operating system
2. Discuss the history of operating system
3. Explain briefly operating system software and object-oriented design

UNIT – II MEMORY MANAGEMENT

1. Explain best-fit versus first fit allocation.
2. Explain the page replacement policies in memory management.
3. Explain the fixed and dynamic partition multiprogramming .

UNIT – III PROCESSOR MANAGEMENT

1. Explain typical multiprocessing configurations.
2. Explain about deadlock and 7 cases of deadlock
3. Explain process scheduler ,process scheduling policies and process scheduling algorithms

UNIT – IV DEVICE MANAGEMENT

1. Discuss about different types of storage devices
2. Discuss the features of various direct access storage devices

UNIT – V FILE MANAGEMENT

1. Explain file organization and sequential with other file organization
2. Describe about file organizations advantages
3. Explain access methods and physical storage allocation