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Paper Name OPERATING System

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Q1 Ans1

Ans1:: Deadlock Prevention::

1) Mutual Exclusion.

Mutual section from the resource Points of view is the fact that a resource can never be used by more than one process simultaneouly which is fair enough but that is the main reason behind the deadlock.

2) Hold and wait....

3) No Preemption.....

4) circular wait.....

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Q2 => Ans 2

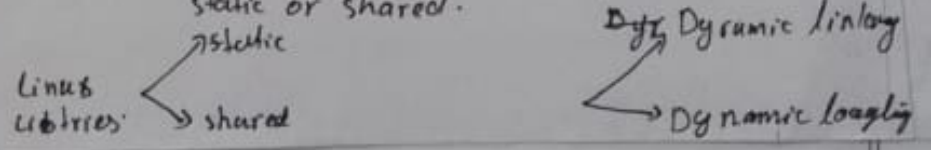
Ans 2 Dynamic Loading means loading the library (or any other binary for that matter) into the memory during load or run time.

Dynamic loading can be imagined to be similar to plugins that is an app can actully execute before the dynimic loading happens.

* Dynamic linking:- Refers to linking during load or that is done during load or run-time and not when the Axe is created.

In case of dynamic linking the linker while creating the Axe dose minimal work for the dynamic liner to work it actully has to load the libares too Hence its also called linking loader

Example:- Linux. there are two types of libraries static or shared.



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Ans 3

The most suitible component of an opreating system that seited to ensure fail, secure, orderly and efficent use of the task of memory mangment includes keeping tracke of use and free memory space as well as when where and How, much memory to allocate and delecte it is also responsible for swapping process in and out of main numory mangment is to ensure fair secure orderly and efficint use of a memory.

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ns 4

This is the simplest kind of encryption that Involes only one secret key to cipher and decipher Information Symentrical encryption is an old and best-known techniqee it uses a secret key that can either be a number, a word or a string of random letter- it is blanded with the plin tent or message to change the contant in a particular way. The sender and the recipent should know the secret key that is used to encrypt and diecrypt all the messages.

* Asymmetrical encryption:- Is alze known as a public key cryptogriphy which is a telatively new method compeared to symmatric encryption. Asymmetrical encryption uses two keys to encrypet a plain tent secret keys are exchenged over the internet or a large network it to ensure that malicious person do not

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misuse the Keys important to note that Keys that anyone with a secret Key Can decript the message.

* Symmatric encryption:- Uses a single Key that needs to be share amung the people who needs to recive the message. While asymmatical encription uses a pair of public Key and a private key to encrypt and decrypt the message when Communicting.
* Symmatric encryption is an olel technique while asymmatric encription is relatively new
* Asymmatric encryption was introduced to Complement the internet problem of the need to Share the Key in Symmatrical encryption model.

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Q5 = Ans

Ans Ans-5

The basic reason behind the occurnes of Internal and extranal fragmation is that Interal fergmation occurs when memory is Partiolind ~~into~~ to Into fined - size blocks when wheres extrand fergmation occurs when memory is Partitional Into varible size blocks.

2) when the memory blow alloted to the Process comes out to be slightly larger then requsted meang. Then the frel space lift in to alloted memory block Cused Internal fregrmentron it Creat Frel space causing a hole in the momory which is called extrnal fregmention.

3) The Problem of Internal fregmention can be solved by Partioing the memory into vrble size block and assign the best fit block to requsting Process.

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* * The Problim of Internal fragention can be reduced. but it can be totally elimented The Paging and segmention help In utilising the space freed up dne to extrnal freqmention by allowing a process to occupy the memory in a non-catigous ~~morm~~ monner.

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Ans 6

first fit :-

In the first fit oppoch is to allocate the first free. Portion or hole large enough. it finshes after finding the first suitible free Portion.

→ ★ **Best fit :-**

The best fit deals with allocting the smallest free portion which meet the requirments the requsting process. Thus algorthim first searches the entire list of free pattions- and consider the smallest hole.

Advantages :-

Memory ulliztion is much better then forst fit as it searches the smallest free portion.

Disadvantges :- it is slower and may tend to fill up memory with tiny usless holes.

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* **Worst fit :-**
In worst fit approch is the locate largest auliable free partions. So that the porton lest will be big enough to be use full.

* **Advantages:-**
Reduce the rate of Production of small gaps.

* **Disadvantages:-**
If a process require a larger memory arrives at a lasas stage than it cannot be accoted as the largest hole.

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07 Ans 07:

Ans Ans: 07 One might that in general processing are more flexible than threads for example processes are controlled independing by the OS, meaning that if one crashes it will not affect other Processes However, Processes require explicit communication using either message passing or shared memory which may add overhead since it requires support from the os kernel, using threads within a process allows them all to share the same address space simplifying communication between threads, However, threads, have their own problems because they communicat through shared memory they must run on same machine and cave.

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