Name : Syed ihtisham ul Hay Bacha

ID : 14504

Paper : operating System

Submitted by : Daud Khan Khalil

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27 Tuesday 086/279

objective ANSWERS

3.00 am

8.30 (1) A (2) A (3) B

9.00 (4) B (5) A (6) A

9.30 (7) C (8) B (9) D

10.00 (10) C (11) C (12) B

10.30 (13) B (14) A (15) A

11.00 (16) B (17) A (18) B

Noon (19) B (20) B

12.30

1.00

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(1) The hardware mechanism that enables a device to notify CPU is called an ---------.

(a) interrupt (b) Signal
(c) Trap (d) process.

(2) The section of the process control block comprises of page and segment tables.

(a) Memory related information
(b) Accounting information
(c) Register information
(d) Scheduling information.

(3) The ---- System Call suspends the calling process.

(a) fork (b) wait
(c) exec (d) exit

(4) In ---- addressing, the recipient is not required to name the sender.

(a) Symmetric (b) Asymmetric (c) Both
(d) None of the above given.

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(2)

St Patrick's Day Holiday (N Ireland-U.K)

8.00 am

(5) ------ Command gives a snapshot of the current process.

(a) ps ✓ (b) top (c) who (d) ls

9.00

9.30 (6) ------ command to resume the execution of a suspended job in the foreground.

(a) fg ✓ (b) bg (c) jobs (d) kill

(7) You can use the ---- command to display the status of suspended and background process.

(a) fg (b) bg (c) jobs ✓ (d) kill

(8) you can terminate a foreground process by pressing.

(a) <ctrl-A> (b) <ctrl-c> ✓ (c) <ctrl-Z> (d) None

(9) A time sharing system is

(a) multi-tasking (b) Interective

(c) multi user (d) All of these ✓

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(10) The main Characteristic of a real time System is

(a) Efficiency (b) Large virtual Memory
(c) Large Secondary Storage device (D) Usability

(11) Shared Libraries and kernal modules are Stored in ----- directory

(a) /bin (b) /dev (c) /boot (D) /lib

(12) --- Schedular Selects the process from the Job pool and put them in main memory.

(a) Long term (b) Short term (c) Medium term
(D) Swapper

(13) in indirect inter process communication, asender ---- mention the name of the recipient.

(a) do (b) do not

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(14) A ------ is an integer variable that, apart from initilization is accessible only Through two standard atomic operations. Wait and Signal.

(a) Semaphore (b) Monitor (c) critical region (D) critical section.

(15) A Semaphore That Cause Busy-waiting is termed is _____.

(a) Spinlock (b) Monitor (c) critical region (D) Critical section

(16) The execution of critical Sections must Not be mutually exclusive.

(a) True (b) False

(17) The performance of Round Robin algorithm does not depends heavily on the Size of The time Vuantum.

(a) True (b) False

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(18) The following requirement for solvi critical section problem is known as ____.
"There exists a bound on the number of times that other process are allowed to enter their critical sections after a process has made a request to enter its critical section and before the request is granted.
(a) progress (b) Bounded waiting ✓
(c) Mutual Exclusive (d) critical regim.

(19) The critical section problem can be solved by the following except
(a) software based solution (b) Firmware based solution ✓
(c) operating system based solution (d) Hardware based solution

(20) ____ is also called swapper.
(a) swap spale (b) medium term schedular
(c) short term schedular (d) Long term schedular.

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"Section" - "B"

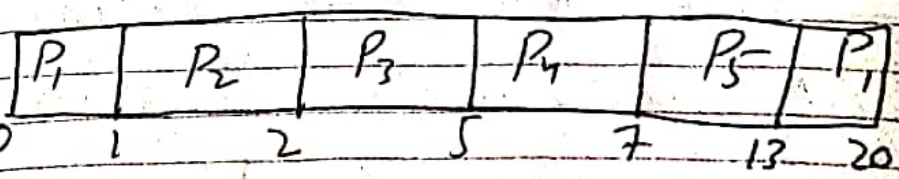
Q1:- Write the formula/procedure for Calculating the waiting time in preemptive Shortest Job first Scheduling.

Ans:-

preemptive SJF Scheduling is Sometimes Called Shortest remaining time first Scheduling we illustrate the working of the SJF algorithm by using the system state.

Process	Arrival time	Burst time	complet time	T-A-T	W-Time (B-T) (T-A-T)
P_1	0	8	20	20	8-20=12
P_2	1	1	2	1	1-1=0
P_3	2	3	5	3	0
P_4	3	2	7	4	2
P_5	4	6	13	9	3

GANT



= Average T-A-T => $\frac{20+1+0+2+3}{5}$

=> $\frac{37}{5}$

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Average waiting time $\Rightarrow \frac{12+0+0+2+3}{5}$

$\Rightarrow \frac{17}{5}$

Q2:- If a process exit and there are still threads of the process running will they continue to run?

Ans:-

No, Threads of the process will no longer run once the process is terminated. Because all threads in a process share the same time. Similarly a termination of a process terminates all threads within that process.

Q3:- Ans Resources sharing have both advantages of Threads and disadvantages of Threads.

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ADVANTAGES :-

① Responsiveness :-

Multithreading an interactive application may allow a program to continue running even if part of it is blocked or is performing a lengthy operation, thereby increasing responsiveness to the user.

Resource Sharing :-

By default, threads share the memory and the resources of the process to which they belong. Code sharing allows an application to have several different threads of activity all within the same address space.

DisAdvantages

Some of the main disadvantages of Threads are.

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(1) Resource Sharing :-
Where as resources sharing is one of the major advantages of threads. it is also a disadvantages because proper synchronization is needed between threads for accessing the shared resource (e.g data and file).

(2) Difficult programming Model :-
it is difficult to write, debug and maintain multi threaded programs for an average user. This is particularly true when it comes for writing code for synchronized access to shared resources.

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