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PAPER : OPERATING SYSTEM

EXAM : MID TERM SPRING 2020

TEACHER : SIR DAUD

DATE : 21/4/20

QNo-1 (M-1)

ANSWER :- Interrupt

QNo-2 (M-1)

ANSWER :- Register information.

QNo-3 (M-1)

ANSWER :- wait

QNo-4 (M-1)

ANSWER :- Asymmetric

QNo-5 (M-1)

ANSWER :- PS

Q No 6 (M-1)

Answer :- fg

Q No 7 (M-1)

Answer :- bg

Q No 8 (M-1)

Answer :- <ctrl-c>

Q No 9 (M-1)

Answer :- Multi-Tasking

Q No 10 (M-1)

Answer :- Efficiency

Q No 11 (M-1)

Answer :- /lib

Q No 12 (M-1)

Answer :- Short term

Q No 13 (M-1)

Answer :- do not

Q No 14 (M-1)

Answer :- Semaphore

Q No 15 (M-1)

Answer :- Spinlock

Q No 16 (M-1)

Answer :- False

Q No 17 (M-1)

Answer :- ~~False~~ True

Q No 18 (M-1)

Answer :- Bounded waiting

Q No 19 (M-1)

Answer :- Firmware based solution

Q No 20 (M-1)

Answer :- Medium term scheduler

Q No 21 (M-2)

write the formula/procedure for calculating the waiting time in preemptive shortest job first scheduling.

Solution :-

Process	Arrival Time	Burst time	RT	CT	TAT (CT-AT)	WT (TAT-BT)
P ₁	0	8	7	20	20	12
P ₂	1	1	0	2	1	0
P ₃	2	8	20	5	3	0
P ₄	3	2	0	7	4	2
P ₅	4	8	0	13	9	3

RT for Remaining Time

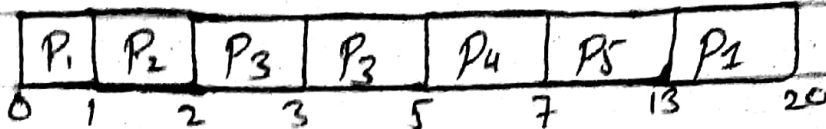
CT for Completion Time

TAT for Turn Around Time

Formula (Completion Time - Arrival Time).

WT for waiting Time
Formula (Turn Around Time - Burst Time)

GIANT CHART :-



$$\text{AVG WT} = \frac{12 + 0 + 0 + 2 + 3}{5} = \frac{17}{5} = 3.4$$

$$\text{AVG TAT} = \frac{20 + 1 + 3 + 4 + 9}{5} = \frac{37}{5} = 7.4$$

Q No 22 (M-3)

if a process exits and there are still threads of that process running, will they continue to run?

Answer :-

No, thread of the process will no longer run once the process terminated because all threads in a process share the same address space all threads are suspended.

Q No 23 (M-5)

Considering the Resource sharing feature of thread, what do you think is resource sharing an advantage of a thread or disadvantage of a thread. Explain your answer briefly.

Answer :-

Advantages :-

1) Responsiveness :-

Multi threading in 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.

2) 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.

Disadvantages :-

Resource sharing :-

Whereas resource sharing is one of the major advantages of threads, it is also a disadvantage

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because Proper Synchronization is needed between threads for accessing the shared resources (e.g. data and files).

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 to writing code for Synchronized access to shared resources.

END