**Chapter 9 – Uniprocessor Scheduling**

**TRUE/FALSE QUESTIONS:**

T F 1)  In a multiprogramming system multiple processes exist concurrently in main memory.

T F 2)  The key to multiprogramming is scheduling.

T F 3)  The medium-term scheduler is invoked whenever an event occurs that may lead to

the blocking of the current process or that may provide an opportunity to preempt a

currently running process in favor of another.

T F 4)  Scheduling affects the performance of the system because it determines which processes

will wait and which will progress.

T F 5)  The main objective of long-term scheduling is to allocate processor time in such a way

as to optimize one or more aspects of system behavior.

T F 6)  In most interactive operating systems adequate response time is the critical requirement.

T F 7)  One problem with a pure priority scheduling scheme is that lower-priority processes

may suffer starvation.

T F 8)  FCFS performs much better for short processes than long ones.

T F 9)  Round robin is particularly effective in a general purpose time sharing system or

transaction processing system.

T F 10)  The objective of a fair-share scheduler is to monitor usage to give fewer resources

to users who have had more than their fair share, and more to those who have had

less than their fair share.

T F 11)  The traditional UNIX scheduler employs multilevel feedback using round robin within

each of the priority queues.

T F 12)  First-come-first-served (FCFS) is a simple scheduling policy that tends to favor I/O

bound processes over processor bound processes.

T F 13)  In the Highest Response Ration Next (HRRN) scheduling policy, longer jobs are favored

because they yield a larger ratio from the smaller denominator in the equation.

T F 14)  A disadvantage of simulation is that results for a given run only apply to that particular

collection of processes under that particular set of assumptions.

T F 15)  In fair share scheduling each user is assigned a weighting of some sort that defines that

user's share of system resources as a fraction of the total usage of those resources.

**MULTIPLE CHOICE QUESTIONS:**

1)  The decision as to which available process will be executed by the processor:

A)  long-term scheduling   B)  I/O scheduling

C)  medium-term scheduling   D)  short-term scheduling

2)  The \_\_\_\_\_\_\_\_\_ determines which process, among ready processes, is selected next for execution.

A)  decision mode   B)  selection function

C)  TAT   D)  long-term scheduler

3)  Which of the following scheduling policies allow the O/S to interrupt the currently running

process and move it to the Ready state?

A)  FIFO   B)  FCFS

C)  non-preemptive   D)  preemptive

4)  The \_\_\_\_\_\_\_\_\_\_ specifies the instants in time at which the selection function is exercised.

A)  decision mode   B)  medium-term scheduling

C)  ready state   D)  TAT

5)  The traditional UNIX scheduler divides processes into fixed bands of priority levels,

with the highest priority band being the \_\_\_\_\_\_\_\_\_ .

A)  user process band   B)  swapper band

C)  file manipulation band   D)  utilization band

6)  This is a decision whether to add a new process to the set of processes that are currently active:

A)  short-term scheduling   B)  long-term scheduling

C)  medium-term scheduling   D)  I/O scheduling

7)  A risk with \_\_\_\_\_\_\_\_\_ is the possibility of starvation for longer processes, as long as there is a

steady supply of shorter processes.

A)  SRT   B)  SPN

C)  FIFO   D)  FCFS

8)  The decision as to which process' pending I/O request shall be handled by an available I/O device:

A)  long-term scheduling   B)  short-term scheduling

C)  I/O scheduling   D)  medium-term scheduling

9)  In the case of the \_\_\_\_\_\_\_\_\_\_ policy, the scheduler always chooses the process that has the shortest

expected remaining processing time.

A)  SRT   B)  FCFS

C)  SPN   D)  HRRN

10)  This is a decision whether to add a process to those that are at least partially in main memory

and therefore available for execution:

A)  long-term scheduling   B)  I/O scheduling

C)  short-term scheduling   D)  medium-term scheduling

11)  Response time in an interactive system is an example of:

A)  user-oriented criteria for long-term scheduling policies

B)  system-oriented criteria for short-term scheduling policies

C)  system-oriented criteria for long-term scheduling policies

D)  user-oriented criteria for short-term scheduling policies

12)  \_\_\_\_\_\_\_\_\_\_ considers the execution history of a related group of processes along with the

individual execution history of each process in making scheduling decisions.

A)  TAT   B)  HRRN

C)  FSS   D)  FCFS

13)  The operating system must make \_\_\_\_\_\_\_\_\_ types of scheduling decisions with respect to

the execution of processes.

A)  six   B)  four

C)  five   D)  three

14)  Typically, the swapping-in function for processes is based on the need to manage \_\_\_\_\_\_\_ .

A)  the degree of multiprogramming   B)  I/O requirements

C)  process priorities   D)  virtual memory

15)  The strategy that schedules processes based on their group affiliation is generally

referred to as \_\_\_\_\_\_\_\_\_ .

A)  shortest process next   B)  fair share scheduling

C)  queuing analysis   D)  simulation modeling

**SHORT ANSWER QUESTIONS:**

1)  The aim of \_\_\_\_\_\_\_\_\_\_ is to assign processes to be executed by the processor or processors

over time, in a way that meets system objectives, such as response time, throughput, and

processor efficiency.

2)  The \_\_\_\_\_\_\_\_\_ scheduler determines which programs are admitted to the system for processing.

3)  \_\_\_\_\_\_\_\_\_ is the elapsed time between the submission of a request until the response begins

to appear as output.

4)  The simplest scheduling policy is \_\_\_\_\_\_\_\_\_\_ .

5)  \_\_\_\_\_\_\_\_\_\_ scheduling is part of the swapping function.

6)  In terms of the queuing model, \_\_\_\_\_\_\_\_\_\_ is the total time that the item spends in the system

(waiting time plus service time).

7)  Giving each process a slice of time before being preempted is a technique known as \_\_\_\_\_\_\_\_ .

8)  A common technique for predicting a future value on the basis of a time series of past

values is \_\_\_\_\_\_\_\_\_\_ .

9)  The \_\_\_\_\_\_\_\_\_\_ scheduler executes most frequently and makes the fine-grained decision

of which process to execute next.

10)  The \_\_\_\_\_\_\_\_\_\_ approach means that the operating system allocates the processor to a

process and when the process blocks or is preempted, feeds it back into one of several

priority queues.

11)  The need to know or estimate required processing times for each process, the starvation

of longer processes, and the lack of preemption are all difficulties with the \_\_\_\_\_\_\_\_\_\_

scheduling technique.

12)  Response time and throughput are examples of \_\_\_\_\_\_\_\_\_\_ criteria for short term scheduling.

13)  \_\_\_\_\_\_\_\_\_ is a scheduling policy in which the process with the shortest expected processing

time is selected next, and if a shorter process becomes ready in the system, the currently

running process is preempted.

14)  The traditional UNIX scheduler, such as those used in SVR3 and 4.3 BSD UNIX systems,

divides processes into fixed \_\_\_\_\_\_\_\_\_\_ of priority levels.

15)  A scheduling mechanism that requires no prior knowledge of process length, yet can nevertheless

favor shorter jobs, is known as the \_\_\_\_\_\_\_\_\_\_ scheduling mechanism.