**Chapter 7 – Memory Management**

**TRUE/FALSE QUESTIONS:**

T F 1)  In a uniprogramming system main memory is divided into two parts.

T F 2)  The use of unequal size partitions provides a degree of flexibility to fixed

partitioning.

T F 3)  In a multiprogramming system the available main memory is not generally

shared among a number of processes.

T F 4)  Programs in other processes should not be able to reference memory locations

in a process for reading or writing purposes without permission.

T F 5)  The memory protection requirement must be satisfied by the operating system

rather than the processor.

T F 6)  Any protection mechanism must have the flexibility to allow several processes

to access the same portion of main memory.

T F 7)  Secondary memory provides fast access at relatively high cost.

T F 8)  A hardware mechanism is needed for translating relative addresses to physical

main memory addresses at the time of execution of the instruction that contains

the reference.

T F 9)  In a multiprogramming environment the programmer knows at the time of coding

how much space will be available and where that space will be.

T F 10)  Overlay programming wastes programmer time.

T F 11)  The principal operation of memory management is to bring processes into main

memory for execution by the processor.

T F 12)  A physical address is the location of a word relative to the beginning of the program

and the processor translates that into a logical address.

T F 13)  The best-fit algorithm is usually the worst performer.

T F 14)  All segments of all programs must be of the same length.

T F 15)  Segmentation does not eliminate internal fragmentation.

**MULTIPLE CHOICE QUESTIONS:**

1)  Main memory divided into a number of static partitions at system generation time is \_\_\_\_\_\_\_ .

A)  fixed partitioning   B)  simple segmentation

C)  dynamic partitioning   D)  simple paging

2)  Main memory divided into a number of equal size frames is the \_\_\_\_\_\_\_\_\_\_ technique.

A)  simple paging   B)  dynamic partitioning

C)  fixed partitioning   D)  virtual memory segmentation

3)  With \_\_\_\_\_\_\_\_\_\_ a process is loaded by loading all of its segments into dynamic partitions that

need not be contiguous.

A)  simple paging   B)  virtual memory segmentation

C)  virtual memory paging   D)  simple segmentations

4)  One technique for overcoming external fragmentation is \_\_\_\_\_\_\_\_\_\_ .

A)  loading   B)  compaction

C)  relocation   D)  partitioning

5)  A \_\_\_\_\_\_\_\_\_\_\_ is a particular example of logical address in which the address is expressed as

a location relative to some known point, usually a value in a processor register.

A)  logical address   B)  relative address

C)  absolute address   D)  physical address

6)  The chunks of a process are known as \_\_\_\_\_\_\_\_\_\_ .

A)  pages   B)  addresses

C)  frames   D)  segments

7)  Available chunks of memory are known as \_\_\_\_\_\_\_\_\_\_\_ .

A)  frames   B)  segments

C)  addresses   D)  pages

8)  The concept of Memory Management satisfies certain system requirements including:

A)  relocation   B)  protection

C)  physical organization   D)  all of the above

9)  In the Dynamic Partitioning technique of memory management, the placement algorithm

that chooses the block that is closest in size to the request is called \_\_\_\_\_\_\_\_\_\_ .

A)  first-fit   B)  best-fit

C)  last-fit   D)  next-fit

10)  In the Dynamic Partitioning technique of memory management, the placement algorithm

that scans memory from the location of the last placement and chooses the next available

block that is large enough to satisfy the request is called \_\_\_\_\_\_\_\_\_\_ .

A)  last-fit   B)  best-fit

C)  next-fit   D)  first-fit

11)  A problem with the largely obsolete Fixed Partitioning memory management technique is

that of:

A)  allowing only a fixed number of processes B)  inefficient use of memory

C)  internal fragmentation D)  all of the above

12)  The page table for each process maintains \_\_\_\_\_\_\_\_\_ .

A)  the physical memory location of the process

B)  the frame location for each page of the process

C)  the page location for each frame of the process

D)  the logical memory location of the process

13)  In a system employing a segmentation scheme for memory management wasted space

is due to \_\_\_\_\_\_\_\_\_ .

A)  external fragmentation   B)  frames of different sizes

C)  internal fragmentation   D)  segments of different sizes

14)  In a system employing a paging scheme for memory management wasted space is

due to \_\_\_\_\_\_\_\_\_ .

A)  internal fragmentation   B)  pages of different specified sizes

C)  external fragmentation   D)  frames of different specified sizes

15)  In a system employing a segmentation scheme for memory management a process

is divided into \_\_\_\_\_\_\_\_\_ .

A)  one segment per thread

B)  a number of threads

C)  a number of segments which need not be of equal size

D)  a number of segments which must be of equal size

**SHORT ANSWER QUESTIONS:**

1)  The task of subdividing memory to accommodate multiple processes is carried out

dynamically by the operating system and is known as \_\_\_\_\_\_\_\_\_\_\_ .

2)  A \_\_\_\_\_\_\_\_\_\_ is a variable length block of data that resides in secondary memory.

3)  In a practice known as \_\_\_\_\_\_\_\_\_ , the program and data are organized in such a way

that various modules can be assigned the same region of memory with a main program

responsible for switching the modules in and out as needed.

4)  A \_\_\_\_\_\_\_\_\_\_ is an actual location in main memory.

5)  A fixed length block of data that resides in secondary memory is a \_\_\_\_\_\_\_\_\_\_ .

6)  When there is wasted space internal to a partition due to the fact that the block of data

loaded is smaller than the partition is referred to as \_\_\_\_\_\_\_\_\_\_.

7)  \_\_\_\_\_\_\_\_\_ in a computer system is organized as a linear, or one-dimensional, address

space, consisting of a sequence of bytes or words.

8)  A \_\_\_\_\_\_\_\_\_ is a fixed length block of main memory.

9)  As time goes on, memory becomes more and more fragmented and memory utilization

declines, creating a phenomenon referred to as \_\_\_\_\_\_\_\_\_ .

10)  A compromise to overcome the disadvantages of fixed partitioning and dynamic

partitioning is the \_\_\_\_\_\_\_\_\_\_ .

11)  A \_\_\_\_\_\_\_\_\_\_ is a reference to a memory location independent of the current assignment

of data to memory.

12)  The \_\_\_\_\_\_\_\_\_\_ shows the frame location for each page of the process.

13)  A \_\_\_\_\_\_\_\_\_\_ can occur as a result of a programming error when a process attempts to

store data beyond the limits of a fixed-sized buffer and consequently overwrites adjacent

memory locations.

14)  Countermeasures to defend systems against attacks can be classified into two categories:

compile-time defenses and \_\_\_\_\_\_\_\_\_ defenses.

15)  The basic tools of memory management are paging and \_\_\_\_\_\_\_\_\_\_ .