Department of Computer Science & Engineering

100003/CS600F-COMPREHENSIVE COURSE WORK

Operating System- Module 4&5 Questions

1. What is Address Binding?
a) going to an address in memory
b) locating an address with the help of another address
c) binding two addresses together to form a new address in a different memory space
d**) a mapping from one address space to another**

2. Binding of instructions and data to memory addresses can be done at ____________
a) Compile time
b) Load time
c) Execution time
d) All of the mentioned

3. If the process can be moved during its execution from one memory segment to another, then binding must be ____________
a) delayed until run time
b) preponed to compile time
c) preponed to load time
d) none of the mentioned

4. What is Dynamic loading?
a) loading multiple routines dynamically
b) loading a routine only when it is called
c) loading multiple routines randomly
d) none of the mentioned

5. The idea of overlays is to ____________
a) data that are needed at any given time
b) enable a process to be larger than the amount of memory allocated to it
c) keep in memory only those instructions
d) all of the mentioned

6. The ___________ swaps processes in and out of the memory.
a) Memory manager
b) CPU
c) CPU manager
d) User

7. If a higher priority process arrives and wants service, the memory manager can swap out the lower priority process to execute the higher priority process. When the higher priority process finishes, the lower priority process

is swapped back in and continues execution. This variant of swapping is sometimes called?
a) priority swapping
b) pull out, push in
c) roll out, roll in
d) none of the mentioned

8. If binding is done at assembly or load time, then the process _____ be moved to different locations after being swapped out and in again.
a) can
b) must
c) can never
d) may

9. In a system that does not support swapping ____________
a) **the compiler normally binds symbolic addresses (variables) to relocatable addresses**
b) the compiler normally binds symbolic addresses to physical addresses
c) the loader binds relocatable addresses to physical addresses
d) binding of symbolic addresses to physical addresses normally takes place during execution

10. The address generated by the CPU is referred to as ____________
a) Physical address
b) **Logical address**
c) Neither physical nor logical
d) None of the mentioned

11. The address loaded into the memory address register of the memory is referred to as ____________
a) **Physical address**
b) Logical address
c) Neither physical nor logical
d) None of the mentioned

12. The run time mapping from virtual to physical addresses is done by a hardware device called the ____________
a) Virtual to physical mapper
b) **Memory management unit**
c) Memory mapping unit
d) None of the mentioned

13. The size of a process is limited to the size of ____________
a) **physical memory**
b) external storage
c) secondary storage
d) none of the mentioned

14. If execution time binding is being used, then a process ______ be swapped to a different memory space.
a) has to be
b) can never
c) must
d) may

15. Swapping requires a _________
a) motherboard
b) keyboard
c) monitor
d) backing store

16. The backing store is generally a ____________
a) fast disk
b) disk large enough to accommodate copies of all memory images for all users
c) disk to provide direct access to the memory images
d) all of the mentioned

17. The ________ consists of all processes whose memory images are in the backing store or in memory and are ready to run.
a) wait queue
b) ready queue
c) cpu
d) secondary storage

18. The _________ time in a swap out of a running process and swap in of a new process into the memory is very high.
a) context – switch
b) waiting
c) execution
d) all of the mentioned

19. The major part of swap time is _______ time.
a) waiting
b) transfer
c) execution
d) none of the mentioned

20. Swapping _______ be done when a process has pending I/O, or has to execute I/O operations only into operating system buffers.
a) must
b) can
c) must never
d) maybe

21. Which one of the following is the address generated by CPU?

a) physical address

b) absolute address

c) logical address

d) none of the mentioned

22. Run time mapping from virtual to physical address is done by ____________

a) **Memory management unit**

b) CPU

c) PCI

d) None of the mentioned

23. Memory management technique in which system stores and retrieves data from secondary storage for use in main memory is called?

a) fragmentation

b) paging

c) mapping

d) none of the mentioned

24. The address of a page table in memory is pointed by ____________

a) stack pointer

b) page table base register

c) page register

d) program counter

25. Program always deals with ____________

a) logical address

b) absolute address

c) physical address

d) relative address

26. The page table contains ____________

a**) base address of each page in physical memory**

b) page offset

c) page size

d) none of the mentioned

27. What is compaction?

a) a technique for overcoming internal fragmentation

b) a paging technique

c) **a technique for overcoming external fragmentation**

d) a technique for overcoming fatal error

28. Operating System maintains the page table for ____________

a) each process

b) each thread

c) each instruction

d) each address

29. In contiguous memory allocation ____________

a) each process is contained in a single contiguous section of memory
b) all processes are contained in a single contiguous section of memory
c) the memory space is contiguous
d) none of the mentioned

30. he relocation register helps in ____________
a) providing more address space to processes
b) a different address space to processes
c) to **protect the address spaces of processes**
d) none of the mentioned

31. The operating system and the other processes are protected from being modified by an already running process because ____________
a) they are in different memory spaces
b) they are in different logical addresses
c) they have a protection algorithm
d) every address generated by the CPU is being checked against the relocation and limit registers

32. When memory is divided into several fixed sized partitions, each partition may contain ________
a**) exactly one process**
b) at least one process
c) multiple processes at once
d) none of the mentioned

33. In fixed size partition, the degree of multiprogramming is bounded by ___________
a) the number of partitions
b) the CPU utilization
c) the memory size
d) all of the mentioned

34. The first fit, best fit and worst fit are strategies to select a ______
a) process from a queue to put in memory
b) processor to run the next process
c) free hole from a set of available holes
d) all of the mentioned

35. . In internal fragmentation, memory is internal to a partition and ____________
a) is being used
b) is not being used
c) is always used
d) none of the mentioned

36. A solution to the problem of external fragmentation is ____________
a) compaction
b) larger memory space

c) smaller memory space
d) none of the mentioned

37. The disadvantage of moving all process to one end of memory and all holes to the other direction, producing one large hole of available memory is ____________

a) the cost incurred
b) the memory used
c) the CPU used
d) all of the mentioned

38. __________ is generally faster than _________ and _________

a) first fit, best fit, worst fit
b) best fit, first fit, worst fit
c) worst fit, best fit, first fit
d) none of the mentioned

39. External fragmentation exists when?

a) enough total memory exists to satisfy a request but it is not contiguous
b) the total memory is insufficient to satisfy a request
c) a request cannot be satisfied even when the total memory is free
d) none of the mentioned

40. When the memory allocated to a process is slightly larger than the process, then ____________

a) internal fragmentation occurs
b) external fragmentation occurs
c) both internal and external fragmentation occurs
d) neither internal nor external fragmentation occurs

41. Physical memory is broken into fixed-sized blocks called ________

a) frames
b) pages
c) backing store
d) none of the mentioned

42. Logical memory is broken into blocks of the same size called _________

a) frames
b) pages
c) backing store
d) none of the mentioned

43. very address generated by the CPU is divided into two parts. They are ____________

a) frame bit & page number
b) page number & page offset
c) page offset & frame bit

d) frame offset & page offset

44. The __________ is used as an index into the page table.

a) frame bit

b) page number

c) page offset

d) frame offset

45. The _____ table contains the base address of each page in physical memory.

a) process

b) memory

c) page

d) frame

46. The size of a page is typically ____________

a) varied

b) power of 2

c) power of 4

d) none of the mentioned

47. If the size of logical address space is 2 to the power of m, and a page size is 2 to the power of n addressing units, then the high order _____ bits of a logical address designate the page number, and the ____ low order bits designate the page offset.

a) m, n

b) n, m

c) m – n, m

d) m – n, n

48. With paging there is no ________ fragmentation.

a) internal

b) external

c) either type of

d) none of the mentioned

49. The operating system maintains a ______ table that keeps track of how many frames have been allocated, how many are there, and how many are available.

a) page

b) mapping

c) frame

d) memory

50. Paging increases the ______ time.

a) waiting

b) execution

c) context – switch

d) all of the mentioned

51. Smaller page tables are implemented as a set of _______

a) queues
b) stacks
c) counters
d) registers

52. The page table registers should be built with _______

a) very low speed logic
b) very high speed logic
c) a large memory space
d) none of the mentioned

53. For larger page tables, they are kept in main memory and a __________ points to the page table.

a) page table base register
b) page table base pointer
c) page table register pointer
d) page table base

54. Time taken in memory access through PTBR is ____________

a) extended by a factor of 3
b) extended by a factor of 2
c) slowed by a factor of 3
d) slowed by a factor of 2

55. Each entry in a translation lookaside buffer (TLB) consists of ____________

a) key
b) value
c) bit value
d) constant

56. If a page number is not found in the TLB, then it is known as a ____________

a) TLB miss
b) Buffer miss
c) TLB hit
d) All of the mentioned

57. An ______ uniquely identifies processes and is used to provide address space protection for that process.

a) address space locator
b) address space identifier
c) address process identifier
d) none of the mentioned

58. The percentage of times a page number is found in the TLB is known as

____

a) miss ratio
b) hit ratio

c) miss percent
d) none of the mentioned

59. Memory protection in a paged environment is accomplished by ____________
a) protection algorithm with each page
b) restricted access rights to users
c) restriction on page visibility
d**) protection bit with each page**

60. When the valid – invalid bit is set to valid, it means that the associated page ____________
a) is in the TLB
b) has data in it
c**) is in the process's logical address space**
d) is the system's physical address space

61. In a paged memory, the page hit ratio is 0.35. The required to access a page in secondary memory is equal to 100 ns. The time required to access a page in primary memory is 10 ns. The average time required to access a page is?
a) 3.0 ns
b) 68.0 ns
c) 68.5 ns
d) 78.5 ns

62. To obtain better memory utilization, dynamic loading is used. With dynamic loading, a routine is not loaded until it is called. For implementing dynamic loading ____________
a) special support from hardware is required
b) special support from operating system is essential
c) special support from both hardware and operating system is essential
d) **user programs can implement dynamic loading without any special support from hardware or operating system**

63. In segmentation, each address is specified by ____________
a**) a segment number & offset**
b) an offset & value
c) a value & segment number
d) a key & value

64. In paging the user provides only ________ which is partitioned by the hardware into ________ and ______
a) one address, page number, offset
b) one offset, page number, address
c) page number, offset, address
d) none of the mentioned

65. Each entry in a segment table has a ____________
a) segment base

b) segment peak
c) segment value
d) none of the mentioned

66. The segment limit contains the ___________
a) starting logical address of the process
b) starting physical address of the segment in memory
c) segment length
d) none of the mentioned

67. The offset 'd' of the logical address must be ___________
a) greater than segment limit
b) **between 0 and segment limit**
c) between 0 and the segment number
d) greater than the segment number

68. When the entries in the segment tables of two different processes point to the same physical location ___________
a) the segments are invalid
b) the processes get blocked
c) **segments are shared**
d) all of the mentioned

69. The protection bit is 0/1 based on ___________
a) write only
b) read only
c) read – write
d) none of the mentioned

70. If there are 32 segments, each of size 1Kb, then the logical address should have ___________
a) 13 bits
b) 14 bits
c) 15 bits
d) 16 bits

71. Consider a computer with 8 Mbytes of main memory and a 128K cache. The cache block size is 4 K. It uses a direct mapping scheme for cache management. How many different main memory blocks can map onto a given physical cache block?
a) 2048
b) 256
c) 64
d) 8

72. A multilevel page table is preferred in comparison to a single level page table for translating virtual address to physical address because ___________
a) it reduces the memory access time to read or write a memory location

b**) it helps to reduce the size of page table needed to implement the virtual address space of a process**
c) it is required by the translation lookaside buffer
d) it helps to reduce the number of page faults in page replacement algorithms

73. _____ is the concept in which a process is copied into the main memory from the secondary memory according to the requirement.
a) Paging
b) **Demand paging**
c) Segmentation
d) Swapping

74. The pager concerns with the ____________
a) **individual page of a process**
b) entire process
c) entire thread
d) first page of a process

75. Swap space exists in ____________
a) primary memory
b) secondary memory
c) cpu
d) none of the mentioned

76. When a program tries to access a page that is mapped in address space but not loaded in physical memory, then ____________
a) segmentation fault occurs
b) fatal error occurs
c) page fault occurs
d) no error occurs

77. In FIFO page replacement algorithm, when a page must be replaced ____________
a) oldest page is chosen
b) newest page is chosen
c) random page is chosen
d) none of the mentioned

78. Which algorithm chooses the page that has not been used for the longest period of time whenever the page required to be replaced?
a) first in first out algorithm
b) additional reference bit algorithm
c) least recently used algorithm
d) counting based page replacement algorithm

79. A process is thrashing if ____________
a) it is spending more time paging than executing

b) it is spending less time paging than executing
c) page fault occurs
d) swapping can not take place

80. In virtual memory. the programmer __________ of overlays.
a) has to take care
b) does not have to take care
c) all of the mentioned
d) none of the mentioned

81. Virtual memory is normally implemented by ________
a) demand paging
b) buses
c) virtualization
d) all of the mentioned

82. A swapper manipulates ___________ whereas the pager is concerned with individual _______ of a process.
a) the entire process, parts
b) all the pages of a process, segments
c) the entire process, pages
d) none of the mentioned

83. The valid – invalid bit, in this case, when valid indicates?
a) the page is not legal
b) the page is illegal
c) **the page is in memory**
d) the page is not in memory

84. page fault occurs when?
a) a page gives inconsistent data
b) **a page cannot be accessed due to its absence from memory**
c) a page is invisible
d) all of the mentioned

85. When a page fault occurs, the state of the interrupted process is ____________
a) disrupted
b) invalid
c) saved
d) none of the mentioned

86. When a process begins execution with no pages in memory?
a) process execution becomes impossible
b) **a page fault occurs for every page brought into memory**
c) process causes system crash
d) none of the mentioned

87. If the memory access time is denoted by ‘ma’ and ‘p’ is the probability of a page fault (0 <= p <= 1). Then the effective access time for a demand paged memory is ___________

a) p x ma + (1-p) x page fault time

b) ma + page fault time

c) **(1-p) x ma + p x page fault time**

d) none of the mentioned

88. Locality of reference implies that the page reference being made by a process ___________

a) will always be to the page used in the previous page reference

b) **is likely to be one of the pages used in the last few page references**

c) will always be one of the pages existing in memory

d) will always lead to page faults

89. Which of the following page replacement algorithms suffers from Belady’s Anomaly?

a) Optimal replacement

b) LRU

c) FIFO

d) Both optimal replacement and FIFO

90. A process refers to 5 pages, A, B, C, D, E in the order : A, B, C, D, A, B, E, A, B, C, D, E. If the page replacement algorithm is FIFO, the number of page transfers with an empty internal store of 3 frames is?

a) 8

b) 10

c) 9

d) 7

91. A process refers to 5 pages, A, B, C, D, E in the order : A, B, C, D, A, B, E, A, B, C, D, E. If the page replacement algorithm is FIFO, the number of page transfers with an empty internal store of 3 frames is?

a) 8

b) 10

c) 9

d) 7

92. A virtual memory system uses First In First Out (FIFO) page replacement policy and allocates a fixed number of frames to a process. Consider the following statements.

P : Increasing the number of page frames allocated to a process sometimes increases the page fault rate

Q : Some programs do not exhibit locality of reference

Which of the following is TRUE?

a) Both P and Q are true, and Q is the reason for P

b) Both P and Q are true, but Q is not the reason for P

c) P is false but Q is true

d) Both P and Q are false

93. What is the Optimal page – replacement algorithm?

a) Replace the page that has not been used for a long time

b) Replace the page that has been used for a long time

c) **Replace the page that will not be used for a long time**

d) None of the mentioned

94. Optimal page – replacement algorithm is difficult to implement, because ____________

a) it requires a lot of information

b) **it requires future knowledge of the reference string**

c) it is too complex

d) it is extremely expensive

95. For 3 page frames, the following is the reference string:

7 0 1 2 0 3 0 4 2 3 0 3 2 1 2 0 1 7 0 1

How many page faults does the LRU page replacement algorithm produce?

a) 10

b) 15

c) 11

d) 12

96. Applying the LRU page replacement to the following reference string.

1 2 4 5 2 1 2 4

The main memory can accommodate 3 pages and it already has pages 1 and 2. Page 1 came in before page 2.

How many page faults will occur?

a) 2

b) 3

c) 4

d) 5

97. The minimum number of page frames that must be allocated to a running process in a virtual memory environment is determined by ____________

a) the instruction set architecture

b) page size

c) physical memory size

d) number of processes in memory

98. Consider the following page reference string.

1 2 3 4 2 1 5 6 2 1 2 3 7 6 3 2 1 2 3 6

For LRU page replacement algorithm with 4 frames, the number of page faults is?

a) 10

b) 14

c) 8

d) 11

99. Consider the following page reference string.

1 2 3 4 2 1 5 6 2 1 2 3 7 6 3 2 1 2 3 6

For LRU page replacement algorithm with 5 frames, the number of page faults is?

a) 10

b) 14

c) 8

d) 11

100. Consider the following page reference string.

1 2 3 4 2 1 5 6 2 1 2 3 7 6 3 2 1 2 3 6

For FIFO page replacement algorithms with 3 frames, the number of page faults is?

a) 16

b) 15

c) 14

d) 11

101. Consider the following page reference string.

1 2 3 4 2 1 5 6 2 1 2 3 7 6 3 2 1 2 3 6

For FIFO page replacement algorithms with 4 frames, the number of page faults is?

a) 16

b) 15

c) 14

d) 11

102. Consider the following page reference string.

1 2 3 4 2 1 5 6 2 1 2 3 7 6 3 2 1 2 3 6

For Optimal page replacement algorithms with 3 frames, the number of page faults is?

a) 16

b) 15

c) 14

d) 11

103. ______ is a unique tag, usually a number identifies the file within the file system.

a) File identifier

b) File name

c) File type

d) None of the mentioned

104. File type can be represented by ____________

a) file name

b) **file extension**

c) file identifier

d) none of the mentioned

105. hat is the mounting of file system?

a) crating of a filesystem

b) deleting a filesystem

c) **attaching portion of the file system into a directory structure**

d) removing the portion of the file system into a directory structure

106. Mapping of file is managed by ____________

a) file metadata

b) page table

c) virtual memory

d) file system

107. Which one of the following explains the sequential file access method?

a) random access according to the given byte number

b) **read bytes one at a time, in order**

c) read/write sequentially by record

d) read/write randomly by record

108. A file control block contains the information about ____________

a) file ownership

b) file permissions

c) location of file contents

d) all of the mentioned

109. Which table contains the information about each mounted volume?

a) mount table

b) system-wide open-file table

c) per-process open-file table

d) all of the mentioned

110. What is raw disk?

a) disk without file system

b) empty disk

c) disk lacking logical file system

d) disk having file system

111. The data structure used for file directory is called ____________

a) mount table

b) hash table

c) file table

d) process table

112. In which type of allocation method each file occupy a set of contiguous block on the disk?

a) **contiguous allocation**

b) dynamic-storage allocation

c) linked allocation

d) indexed allocation

113. If the block of free-space list is free then bit will ____________

a) 1

b) 0

c) any of 0 or 1

d) none of the mentioned

114. Which protocol establishes the initial logical connection between a server and a client?

a) transmission control protocol

b) user datagram protocol

c) mount protocol

d) datagram congestion control protocol

115. File attributes consist of ____________

a) name

b) type

c) identifier

d) all of the mentioned

116. The information about all files is kept in ____________

a) swap space

b) operating system

c) seperate directory structure

d) none of the mentioned

117. The larger the block size, the ______ the internal fragmentation.

a) greater

b) lesser

c) same

d) none of the mentioned

118. Sequential access method ______ on random access devices.

a) works well

b) doesnt work well

c) maybe works well and doesnt work well

d) none of the mentioned

119. A relative block number is an index relative to ____________

a**) the beginning of the file**

b) the end of the file

c) the last written position in file

d) none of the mentioned

120. For large files, when the index itself becomes too large to be kept in memory?

a) index is called

b) **an index is created for the index file**

c) secondary index files are created

d) all of the mentioned

121. What will happen in the two level directory structure?

a) **each user has his/her own user file directory**

b) the system doesn't its own master file directory

c) all of the mentioned

d) none of the mentioned

122. What will happen in the two level directory structure?

a) each user has his/her own user file directory

b) the system doesn't its own master file directory

c) **all of the mentioned**

d) none of the mentioned

123. In the tree structured directories ____________

a) the tree has the stem directory

b) the tree has the leaf directory

c) **the tree has the root directory**

d) all of the mentioned

124. The current directory contains, most of the files that are ____________

a**) of current interest to the user**

b) stored currently in the system

c) not used in the system

d) not of current interest to the system

125. Which of the following are the types of Path names?

a) absolute & relative

b) local & global

c) global & relative

d) relative & local

126. An absolute path name begins at the ____________

a) leaf

b) stem

c) current directory

d) root

127. A relative path name begins at the ____________

a) leaf

b) stem

c) **current directory**

d) root

128. In a tree structure, when deleting a directory that is not empty?

a) The contents of the directory are safe
b) **The contents of the directory are also deleted**
c) contents of the directory are not deleted
d) none of the mentioned

129. n contiguous allocation ____________

a) **each file must occupy a set of contiguous blocks on the disk**
b) each file is a linked list of disk blocks
c) all the pointers to scattered blocks are placed together in one location
d) none of the mentioned

130. n linked allocation ____________

a) each file must occupy a set of contiguous blocks on the disk
b) **each file is a linked list of disk blocks**
c) all the pointers to scattered blocks are placed together in one location
d) none of the mentioned

131. In indexed allocation ____________

a) each file must occupy a set of contiguous blocks on the disk
b) each file is a linked list of disk blocks
c) **all the pointers to scattered blocks are placed together in one location**
d) none of the mentioned

132. On systems where there are multiple operating system, the decision to load a particular one is done by ____________

a) **boot loader**
b) bootstrap
c) process control block
d) file control block

133. _______ and ________ are the most common strategies used to select a free hole from the set of available holes.

a) **First fit, Best fit**
b) Worst fit, First fit
c) Best fit, Worst fit
d) None of the mentioned

134. To solve the problem of external fragmentation ________ needs to be done periodically.

a) **compaction**
b) check
c) formatting
d) replacing memory

135. Contiguous allocation has two problems _________ and _________ that linked allocation solves.

a) **external – fragmentation & size – declaration**

b) internal – fragmentation & external – fragmentation

c) size – declaration & internal – fragmentation

d) memory – allocation & size – declaration

136. Indexed allocation _________ direct access.

a) **supports**

b) does not support

c) is not related to

d) none of the mentioned

137. Consider a disk where blocks 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 17, 18, 25, 26 and 27 are free and the rest of the blocks are allocated. Then the free space bitmap would be _____________

a) 1000011000000011100111111100011111…

b) 11000011000000011100111111100011111…

c) 0111100111111100011000000011100000…

d) 00111100111111100011000000011100000…

138. The heads of the magnetic disk are attached to a _____ that moves all the heads as a unit.

a) spindle

b**) disk arm**

c) track

d) none of the mentioned

139. The time taken to move the disk arm to the desired cylinder is called the ____________

a) positioning time

b) random access time

c) **seek time**

d) rotational latency

140. The time taken for the desired sector to rotate to the disk head is called ____________

a) positioning time

b) random access time

c) seek time

d**) rotational latency**

141. What is the host controller?

a) controller built at the end of each disk

b) **controller at the computer end of the bus**

c) all of the mentioned

d) none of the mentioned

142. Consider a disk queue with requests for I/O to blocks on cylinders.
98 183 37 122 14 124 65 67
Considering FCFS (first cum first served) scheduling, the total number of head movements is, if the disk head is initially at 53 is?
a) 600
b) 620
c) 630
d) 640

143. Consider a disk queue with requests for I/O to blocks on cylinders.
98 183 37 122 14 124 65 67
Considering SSTF (shortest seek time first) scheduling, the total number of head movements is, if the disk head is initially at 53 is?
a) 224
b) 236
c) 245
d) 240

144. SSTF algorithm, like SJF __________ of some requests.
a) **may cause starvation**
b) will cause starvation
c) does not cause starvation
d) causes aging

145. In the ______ algorithm, the disk arm starts at one end of the disk and moves toward the other end, servicing requests till the other end of the disk. At the other end, the direction is reversed and servicing continues.
a) LOOK
b) SCAN
c) C-SCAN
d) C-LOOK

146. In the _______ algorithm, the disk head moves from one end to the other, servicing requests along the way. When the head reaches the other end, it immediately returns to the beginning of the disk without servicing any requests on the return trip.
a) LOOK
b) SCAN
c) C-SCAN
d) C-LOOK

147. In the ______ algorithm, the disk arm goes as far as the final request in each direction, then reverses direction immediately without going to the end of the disk.
a) LOOK
b) SCAN

c) C-SCAN
d) C-LOOK

148. The _______ program initializes all aspects of the system, from CPU registers to device controllers and the contents of main memory, and then starts the operating system.
a) main
b) bootloader
c) bootstrap
d) rom

149. In SCSI disks used in high end PCs, the controller maintains a list of _________ on the disk. The disk is initialized during ________ which sets aside spare sectors not visible to the operating system.
a) destroyed blocks, high level formatting
b) bad blocks, partitioning
c) **bad blocks, low level formatting**
d) destroyed blocks, partitioning

150. In SCSI disks used in high end PCs, the controller maintains a list of bad blocks on the disk. The disk is initialized during low-level formatting which sets aside spare sectors not visible to the operating system. The scheme used is known as _______ or ________
a) **sector sparing & forwarding**
b) forwarding & sector utilization
c) backwarding & forwarding
d) sector utilization & backwarding