

MULTIPLE CHOICE QUESTIONS

Operating System

1. Virtual memory is:
 - A. An extremely large main memory
 - B. An extremely large secondary memory
 - C. An illusion of an extremely large main memory
 - D. A type of memory used in super computers
2. Spatial locality refers to the portion that once a location is referenced:
 - A. It will not be referenced again
 - B. It will be referenced again
 - C. A nearby location will be referenced soon
 - D. None of the above
3. Which of the following is an example of a SPOOLED device?
 - A. The terminal used to enter the input data for a program being executed
 - B. The secondary memory device in a virtual memory system
 - C. A line printer used to print the output of a number of jobs
 - D. None of the above
4. Page fault occurs when:
 - A. The page is in main memory
 - B. The page is not in main memory
 - C. The page is corrupted by application software
 - D. One tries to divide a number by 10.
5. Overlay is:
 - A. A part of an operating system
 - B. A specific memory location

- The only state transition that is initiated by the user process itself is:*
- A. Block
 - B. Wake up
 - C. Dispatch
 - D. None of the above
- Working set (t, k) at an instant of time, t, is the set of:*
- A. K future references that the operating system will make
 - B. Future references that the operating system will make in the next 'k' times units
 - C. K references with high frequency
 - D. Pages that have been referenced in the last k times units
- Fragmentation is:*
- A. Dividing the secondary memory into equal sized fragments
 - B. Dividing the main memory into equal-sized fragments
 - C. Fragments of memory words used in a page
 - D. Fragments of memory words unused in a page
- Which of the following are real-time systems?*
- A. A process control system
 - B. Aircraft control system
 - C. An on-line railway reservation system
 - D. Both (B) and (C)
- Dijkstra's banking algorithm in an operating system solves the problem of:*
- A. Deadlock avoidance
 - B. Mutual exclusion
 - C. Deadlock recovery
 - D. Context switching

14. In page memory systems, if the page size is increased, then the internal fragmentation generally:
 - A. Becomes less
 - B. Remains constant
 - C. Becomes more
 - D. None of the above
15. An operating system contains 3 user processes each requires 2 units of resource R. The minimum number of units of R such that no deadlock will ever occur is:
 - A. 3
 - B. 5
 - C. 4
 - D. 6
16. Critical region is:
 - A. A part of the operating system which is not allowed to be accessed by any process
 - B. A set of instructions that access common shared resource which exclude one another in time
 - C. The portion of the main memory which can be accessed only by one process at a time
 - D. None of the above
17. Kernel is:
 - A. Considered as the critical part of the operating system
 - B. The software which monitors the operating system
 - C. The set of primitive functions upon which the rest of operating system functions are built up
 - D. None of the above
18. With a single resource, deadlock occurs
 - A. If there are more than two processes competing for that resource
 - B. If there are only two processes competing for that resource
 - C. If there is a single process competing for that resource
 - D. None of the above

19. Necessary conditions for deadlock are:
 A. Non-preemption and circular wait
 B. Both (A) and (B)
 C. Mutual exclusion and partial allocation
 D. None of the above
20. In time sharing operating system, when the time slot given to a process is completed, the process goes from the RUNNING state to the:
 A. BLOCKED State
 B. SUSPENDED state
 C. READY state
 D. TERMINATED state
21. At a particular time, the value of a counting semaphore is 10. It will become 7 after
 A. 3 V operations
 B. 5 V operations and 2 P operations
 C. 3 P operations
 D. 13 P operations and 10 V operations
22. Supervisor call:
 A. Is a call made by the supervisor of the system
 B. Is a call with control functions
 C. Are privileged calls that are used to perform resource management functions, which are controlled by the operating system
 D. Is a call made by someone working in root directory
23. Semaphore are used to solve problem of:
 A. Race condition
 B. Mutual exclusion
 C. Process synchronization
 D. Both (B) and (C)
24. If the property of locality of reference is well pronounced in a program:
 A. The number of page faults will be more
 B. The number of page faults will be less
 C. Execution will be faster
 D. Both (B) and (C)
25. At a particular time of computation, the value of a counting semaphore, 7. Then 20 P operations and 'x' V operations were completed on this semaphore. If the final value of the semaphore is 5. X will be:
 A. 15 B. 18
 C. 22 D. 13
26. Pre-emptive scheduling, is the strategy of temporarily suspending a running process:
 A. Before the CPU time slice expires
 B. When it requests I/O
 C. To allow starving processes to run
 D. None of the above
27. Mutual exclusion problem occurs:
 A. Between two disjoint processes that do not interact
 B. Among processes that share resources
 C. Among processes that do not use the same resource
 D. None of the above
28. Sector interleaving in disks is done by:
 A. The disk manufacturer
 B. The operating system
 C. The disk controller card
 D. None of the above
29. Memory protection is of no use in a:
 A. Single user system
 B. Non-multitasking system
 C. Non-multiprogramming
 D. None of the above
30. Some computer systems support dual mode operation- the user mode and the supervisor or monitor mode. These refers to the modes
 A. By which user programs handle their data
 B. By which the operating system executes user programs
 C. In which the processor and the associated hardware operate
 D. Of memory access
31. Disk scheduling involves deciding:
 A. Which disk should be accessed next
 B. The order in which disk access requests must be serviced
 C. The physical location where files should be accessed in the disk
 D. None of the above
32. A computer system has 6 tape drives, with 'n' processes competing for them. Each process may need 3 tape drives. The maximum value of 'n' for which the system is guaranteed to be deadlock free is:
 A. 2 B. 4
 C. 3 D. 1
33. Dirty bit is used to show the:
 A. Page with corrupted data
 B. Wrong page in the memory
 C. Page that is modified after being loaded into cache memory
 D. Page that is less frequently accessed
34. Fence register is used for:
 A. CPU protection
 B. File protection
 C. Memory protection
 D. All of the above
35. Which of the following is a service not supported by the operating system?
 A. Protection B. Compilation
 C. Accounting D. I/O operation
36. The first-fit, best-fit and the worst-fit algorithm can be used for:
 A. Contiguous allocation of memory
 B. Indexed allocation of memory
 C. Linked allocation of memory
 D. All of the above
37. Which of the following is a single-user operating system?
 A. MS-DOS
 B. XENIX
 C. UNIX
 D. Both (A) and (C)
38. In Round Robin CPU scheduling, as the time quantum is increased , the average turnaround time:
 A. Increases
 B. Remains constant
 C. Decreases
 D. Varies irregularly
39. In a multiprogramming environment:
 A. The processor executes more than one process at a time
 B. The programs are developed by more than one person
 C. More than one process resides in the memory
 D. A single user can execute many programs at the same time.

40. Which of the following are true?
- A re-entrant procedure can be called any numbers of times
 - A re-entrant procedures can be called even before the procedure has not returned from its previous call
 - Re-entrant procedures cannot be called recursively
 - Re-entrant procedures can be called recursively
41. In a paged memory, the page hit ratio is 0.35. The time required to access a page in secondary memory is equal to 100ns. The time required to access a page in primary memory is 10ns. The average time required to access a page is:
- 3.0 ns
 - 68.0 ns
 - 68.5 ns
 - 78.5 ns
42. A state is safe if the system can allocate resources to each process (up to its maximum) in some order and still avoid deadlock: which of the following are true?
- Deadlock state is unsafe
 - Unsafe state may lead to a deadlock situation
 - Unsafe state must lead to a deadlock, deadlock state is a subset of unsafe state
 - All of the above
43. The size of the virtual memory depends on the size of the:
- Data bus
 - Address bus
 - Main memory
 - None of the above
44. In a multi-user operating system, 20 requests are made to use a particular resource per hour, on an average. The probability that no requests are made in 45 minutes is:
- e^{-15}
 - $1 - e^{-5}$
 - $1 - e^{-10}$
45. In which of the following scheduling policies does context switching never take place?
- Round robin
 - First come first serve
 - Shortest job first
 - Both (B) and (C)
46. In which of the following directory systems, it is possible to have multiple complete paths for a file, starting from the root directory?
- Single level directory
 - Tree structural directory
 - Two level directory
 - Acyclic graph
47. Suppose that a process is in 'BLOCKED' state waiting for some I/O service. When the service is completed, it goes to be:
- RUNNING state
 - SUSPENDED state
 - READY state
 - TERMINATED state
48. In a system that does not support swapping:
- The compiler normally binds symbolic addresses (variables) to relocate addresses
 - The compiler normally binds symbolic addresses to physical addresses
 - The loader binds relocatable addresses to physical addresses
 - All of the above
- To obtain better memory utilization, dynamic loading is used. With dynamic loading, a routine is not loaded until it is called for. For implementing dynamic loading:
- Special support from hardware is essential
 - Special support from operating system is essential
 - Special support from both hardware and operating system are essential
 - User programs can implement dynamic loading without any special support from the operating system or hardware
49. Which of the following is true?
- The linkage editor is used to edit programs which have to be later linked together
 - The linkage editor links objects modules during compiling or assembling
 - The linkage editor links object modules and resolves external references between them before loading
 - The linkage editor resolves external references between the object modules during execution time
50. Which of the following is true?
- Overlays are used to increase the size of physical memory
 - Overlays are used to increase the logical address space
 - When overlays are used, the size of a process is not limited to the size of physical memory
 - Overlays are used whenever the physical address space is smaller than the logical address space
52. In partitioned memory allocation scheme is:
- Best fit algorithm is always better than the first fit algorithm
 - First fit algorithm is always better than the best fit algorithm
 - Superiority of the first fit and best-fit algorithm depend on the sequence of memory requests
 - None of the above
53. Cascading termination refers to termination of all child processes before the parent terminations:
- Normally
 - Normally or abnormally
 - Abnormally
 - None of the above
54. For implementing a multiprogramming operating system:
- Special support from processor is essential
 - Special support from processor is not essential
 - Cache memory must be available
 - More than one processor must be available
55. Consider a system having 'm' resources of the same type. These resources are shared by 3 processes A,B,C, which have time demands of 3,4,6 respectively. The minimum value of 'm' that ensures that deadlock will never occur is:
- 11
 - 12
 - 13
 - 14
56. A system has 3 processes sharing 4 resources. If each process needs a maximum of 2 units then deadlock:
- Can never occur
 - Has to occur
 - May occur
 - None of the above

57. 'm' processes share 'n' resource of the same type. The maximum need of each process does not exceed 'n' and the sum all their maximum needs is always less than $m+n$. In this set up deadlock:

- A. Can never occur
- B. Has to occur
- C. May occur
- D. None of the above

58. A process refers to 5 pages, A,B,C,D and E in the order-A; B; C; D; A; E; ; B; C; D; E. If the page replacement algorithm is FIFO, the number of pages which transfer with transfer with an empty internal store of 3 frames is:

- A. 8
- B. 10
- C. 9
- D. 7

59. Distributed system should:

- A. Meet prescribed time constraints
- B. Aim better system utilization
- C. Aim better resource sharing
- D. Aim low system overhead

60. The main function of shared memory is:

- A. Use primary memory efficiently
- B. Do inter process communication
- C. Do intra process communication
- D. None of the above

61. Which of the following is the most suitable scheduling scheme in a real-time operating system?

- A. Round robin
- B. Pre-emptive scheduling
- C. First-come-first-serve
- D. Random scheduling

62. 'Aging' is:

- A. Keeping track of cache contents
- B. Keeping track of what pages are currently residing in the memory
- C. Keeping track of how many times a given page is referenced
- D. Increasing the priority of jobs to ensure termination in a finite time

63. If there are 32 segments, each of size 1 Kbytes, then the logical address should have:

- A. 13 bits
- B. 14 bits
- C. 15 bits
- D. 16 bits

64. Disk requests come to a disk driver for cylinders in the order 10, 22, 20, 2, 40, 6 and 38 at a time when a disk drive is reading from cylinder 20. The seek time is 6 ms per cylinder. The total seek time, if the disk arm scheduling algorithm is first-come-first-served is:

- A. 360 ms
- B. 850 ms
- C. 900 ms
- D. None of the above

65. A certain moving arm disk storage with one head has following specifications:

Number of tracks / recording surface = 200

Disk rotation speed = 2400 rpm

Track storage capacity = 62500 bits

The average latency time (assume that the head can move from one track to another only by traversing the entire track) is:

- A. 2.5 s
- B. 2.9 s
- C. 3.1 s
- D. 3.6 s

66. Memory protection is normally done by the:

- A. Operating system
- B. Compiler
- C. Processor and the associated hardware
- D. User program

67. Which of the following scheduling algorithms gives minimum average waiting time?

- A. FCFS
- B. SJF
- C. Round-robin
- D. Priority

68. In a paged segmented scheme of memory management, the segment table itself must have a page table because:

- A. The segment table is often too large to fit in one page
- B. Each segment is spread over a number of pages
- C. Segment tables point to page tables and not to the physical location of the segment
- D. The processor's description base register points to a page table

69. Which of the following page replacement algorithms suffers from Belady's anomaly?

- A. Optimal replacement
- B. FIFO
- C. LRU
- D. Both optimal replacement and FIFO

70. Which of the following scheduling policy is well suited for a time-shared operating system?

- A. Shortest job first
- B. First come first serve
- C. Round robin
- D. Elevator

71. The address sequence generated by tracing a particular program executing in a pure demand paging system with 100 records per page, with 1 free main memory frame is recorded as follows. What is the number of page faults?

0100, 0200, 0430, 0499, 0510, 0530, 0560, 0120, 0220, 0240, 0260, 0320, 0370.

- A. 13
- B. 8
- C. 7
- D. 10

72. A computer system has 4 K word cache organized in a block-set-associative manners, with 4 blocks per set, 64 words per block. The number of bits in SET and WORD fields of the main memory address format is:

- A. 14,4
- B. 6,4
- C. 7,2
- D. 4,6

73. A memory page containing a heavily used variable that was initialized very easily and is in constant use is removed, when page replacement algorithm is used :

- A. LRU
- B. FIFO
- C. LFU
- D. None of the above

74. A demand paging system, with page table held in registers, takes 5ms to service a page fault if an empty page is available, or if the page to be replaced is not dirty. It takes 15 ms if the replaced page is dirty. Memory access time is 1 micro second. Assume we want an effective access time of 2 micro second and that the page to be replaced is dirty 60% of the time. What is the approximate maximum acceptable page fault rate to meet this access time requirement?

- A. 0.1%
- B. 1.0%
- C. 2.5%
- D. 0.01%

75. Consider a computer with 8 Mbytes of main memory and 128 K 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?
- 2048
 - 256
 - 64
 - None of the above
76. Which of the following applications are well suited for batch processing?
- Process control
 - Preparing pay bills of employees
 - Video game control
 - Preparing mailing addresses
77. Locality of reference implies that the page reference being made by a person:
- Will always be to the page used in the previous page reference
 - Is likely to be one of the pages used in the last few pages references
 - Will always be one of the pages existing in memory
 - Will always leads to a page faults
78. Thrashing:
- Reduces page I/O
 - Decreases the degree of multiprogramming
 - Implies excessive page I/O
 - Improves the system performance
79. Dirty bit for a page in a page table
- Helps avoid unnecessary writes on a paging device
 - Helps maintain LRU information
 - Allows only read on a page
 - None of the above

80. Each process p_i , $i=1,2,3$, coded as follows:
- ```

Repeat
P (mutex)
{
Critical section}
V (mutex)
Forever

```
- The code for  $P_{10}$  is identical except that it uses V (mutex) instead of p (mutex). What is the largest number of processes that can be inside the critical section at any moment?
- 1
  - 2
  - 3
  - None of the above
81. When an interrupt occurs, an operating system:
- Ignores the interrupt
  - Always changes the state of the interrupted processes after processing the interrupt
  - Always resumes execution of the interrupted process after processing the interrupt
  - May change the state of the interrupted process to "blocked" and schedule another process.
82. The working set theory of programming behavior of processes running within an operating system involves
- The collection of pages that a processes accesses
  - Disk scheduling mechanisms
  - Coalescing holes in memory
  - Assigning the CPU to processes

- Trojan-Horse programs:**
- A. Are legitimate programs that allow unauthorized access
  - B. Do not usually work
  - C. Are hidden programs that do not show up on the system
  - D. Usually are immediately discovered
- Page stealing**
- A. Is a sign of an efficient system
  - B. Is taking page frames from other working sets
  - C. Should be the tuning goal
  - D. Is taking larger disk spaces for pages paged out
- In virtual memory systems, Dynamic address translation**
- A. Is the hardware necessary to implement paging
  - B. Store pages at a specific location on disk
- The garbage collector**
- A. Prevents fragmentation from occurring
  - B. Is mostly used with fixed partitions
  - C. Collects fragmented areas of memory
  - D. Is critical for efficient virtual memory system
- Page-map table is**
- A. A data file
  - B. Used for address translation
  - C. A directory
  - D. All of the above
- Which of the following rules out the use of GO TO?**
- A. Flowchart
  - B. Nassi-shneiderman diagram
  - C. HIPO-DIAGRAMS
  - D. All of the above

89. Which of the following is a phase of a compilation process
- Lexical analysis
  - Both of the above
  - Code generation
  - Static analysis
90. A computer cannot "boot" if it does not have the
- Computer
  - Operating system
  - Loader
  - Assembler
91. Which of the following is a measure to test how good or bad a modular design is:
- Module strength
  - Static analysis
  - Module coupling
  - All of the above
92. Which of the following tapes of software must you have in main memory in order to use your keyboard?
- Word processing
  - Applications
  - Systems
  - Spreadsheets
93. If you want to execute more than one program at a time, the system software you are using must be capable of:
- Word processing
  - Compiling
  - Virtual memory
  - Multitasking
94. Which of the following is a type of systems software used micro computers?
- Apple DOS
  - PC-DOS
  - MS-DOS
  - All of the above

95. Which of the following is helpful in evaluating applications software that will best suit your needs?

- A. Recommendations by other users
- B. Objective software reviews
- C. Computer magazines
- D. All of the above

96. Which of the following are loaded into main memory when the computer is booted?

- A. Internal command instructions
- B. Utility programs
- C. External command instruction
- D. Word processing instructions

97. Which of the following software types is used to simplify using systems software?

- A. Spreadsheet
- B. Time sharing
- C. Operating environment
- D. Multitasking

98. Which of the following is not applications software?

- A. Word processing
- B. UNIX
- C. Spreadsheet
- D. Desktop publishing

99. Which of the following types of software should you use it you often need to create, edit, and print documents?

- A. Word processing
- B. UNIX
- C. Spreadsheet
- D. Desktop publishing

100. Which of the following might be used to convert high-level language instructions in to machine language?

- A. Systems software
- B. An operating environment
- C. Application software
- D. An interpreter

101. Multiprogramming was possible by:

- A. Input/output units that independently of the CPU operate made
- B. Operating systems
- C. Both A and B
- D. Neither A nor B

102. A translator which reads an entire programs written in a high level language and converts it into machine language code is:

- A. Assembler
- B. Complier
- C. Translator
- D. System software

103. What is the name given to all the programs inside the computer which makes it usable?

- A. Application software
- B. Firmware
- C. System software
- D. Shareware

104. Systems software is a program that directs the overall operation of the computer facilitates its use and interacts with all users. What are the different types of this software?

- A. Operating system
- B. Utilities
- C. Languages translator
- D. All of the above

105. What is the name of the system which deals with the running of the actual computer and not with the programming problems?

- A. Operating system
- B. Object program
- C. System program
- D. Source program

106. Which of the following systems software does the job merging the records from two files into one?

- A. Security software
- B. Networking software
- C. Utility program
- D. Documentation system

107. The term "operating system" means

- A. A set of program which controls computer working
- B. The way a computer operator works
- C. Conversion of high language into machine code
- D. The way a floppy disk drive operates

108. The operating system of a computer serves as a software interface between the user and

- A. Hardware
- B. Memory
- C. Peripheral
- D. Screen

109. The primary job as the operating system of a computer is to:

- A. Command resources
- B. Provide utilities
- C. Manage resources
- D. Be user friendly

110. All the time a computer is switched on, its operating system software has to stay in

- A. Main storage
- B. Floppy disk
- C. Primary storage
- D. Disk drive

111. What is the name given to software which can be legally copied and often used for free?

- A. Shareware program
- B. Firmware program
- C. Public domain program
- D. Mindware

112. What is the operating system used by Macintosh computers?

- A. System 7.0
- B. Xenix
- C. AU/X
- D. Either A or B

113. Who is called the overseer and supervisor of all computer activity?

- A. Central processing unit
- B. Control unit
- C. Operating system
- D. Application program

114. Can you name the major operating system used in computers

- A. MS DOS
- B. UNIX
- C. OS/2
- D. All of the above

115. Who developed the operating system/2 (OS/2) for running IBM's new PS/2 family of microcomputers?

- A. IBM
- B. Bell Laboratories
- C. Microsoft Inc.
- D. Digital Research Corporation

116. Most of the microcomputer's operating systems like Apple Dos, MS DOS and PC DOS etc. are called disk operating systems because

- A. They are memory resident
- B. They are initially stored on disk
- C. They are available on magnetic tapes
- D. They are partly in primary memory and partly on disk

117. What is the name given to the process of initializing a microcomputer with its operating system?

- A. Cold booting
- B. Boot recording
- C. Booting
- D. Booting

118. What is the name of the operating system which was originally designed by scientists and engineers for use by scientists and engineers for use by scientists and engineers?

- A. XENIX
- B. OS/2
- C. UNIX
- D. MS DOS

119. What are the most important features of Microsoft Windows program?

- A. Windows
- B. Icons
- C. Pull-down menus
- D. All of the above

120. What is the name given to the organized collection of software that controls the overall operation of a computer?

- A. Working system
- B. Operating system
- C. Peripheral system
- D. Controlling system

121. What is the name given to the values that are automatically provided by software to reduce keystrokes and improve a computer user's productivity?

- A. Defined values
- B. Default values
- C. Fixed values
- D. Special values

122. The powerful text editor called PC-Writer can be used anybody by paying a small fee. Such programs are called...

- A. Software
- B. Firmware
- C. Shareware
- D. Mindware

123. What is the name of the operating system that read and reacts in terms of actual time?

- A. Batch system
- B. Real time system
- C. Quick response
- D. Time sharing system

124. What is the name of the technique in which the operating system of a computer executes several programs concurrently by switching back and forth between them?

- A. Partitioning
- B. Windowing
- C. Multitasking
- D. Paging

125. When IBM did released the first version of its disk operating system DOS version 1.0?

- A. 1981
- B. 1982
- C. 1983
- D. 1984

126. IBM released it first PN in 1981. Can you name the operating system which was most popular at that time?

- A. MS DOS
- B. PC DOS
- C. OS/360
- D. CPM

127. The mathematics software allows the users to directly write and solve problem in arithmetic, trigonometry, algebra, etc. can you name the person who created this software?

- A. Thomas Abraham
- B. Yuri Manin
- C. Steve Jobs
- D. Stephen Wolfram

128. The higher version of the operating systems are so written that programs designed for earlier versions can still be run. What is it called?

- A. Upgradability
- B. Universality
- C. Upward mobility
- D. Upward compatibility

129. What is the name of the arrangement whereby several central processing units share one memory?

- A. Multitasking
- B. Multiprocessing
- C. Multiprogramming
- D. Concurrent programming

130. A graphical-menu-driven operating system allows you to pick up from the menu of choices it displays on the screen. What is the name given to the images which are used in such image oriented menus?

- A. Figure
- B. Symbol
- C. Icon
- D. Model

131. With reference to Windows, a DLL is:

- A. Distribution level library
- B. Dedicated link library
- C. Dynamic link library
- D. Distributed library LAN

132. Windows is a(n)

- A. Operating system
- B. Operating environment
- C. User interface
- D. Programming platform

133. Microcomputer operating systems are generally

- A. Copy protected
- B. Not loaded into the ROM by hardware manufactures
- C. Easily available in the market
- D. All of the above

134. The part of the computer system which performs the house keeping functions is called

- A. Interpreter
- B. Operating system
- C. Compiler
- D. Assembler

135. An operating system designed to run on only one family of computers is called

- A. PC-DOS
- B. Disk operating system
- C. CP/M
- D. Proprietary operating system

136. An operating system

- A. Is not required on large computers
- B. Is always supplied with the computer
- C. Is always written in BASIC
- D. Consists of programs that help in the operation computer

137. The relationship between operating system software and application software is that

- A. Application software and application software
- B. Operating system monitors application software
- C. Application software and operating system work independently
- D. Application software and monitors

138. A proprietary operating system can run on machines made by

- A. Different vendors
- B. IBM only
- C. A specific vendor
- D. None of the above

139. The most popular 16-bit operating system is:

- A. CP/M
- B. MS-DOS
- C. UNIX
- D. TRS-DOS

140. DOS is:

- A. A software
- B. A data organization system
- C. A hardware
- D. None of the above

141. A computer program written into a storage medium from which it cannot be accidentally erased is called

- A. Software
- B. Firmware
- C. Operating system
- D. ROM

142. The first popular microcomputer operating system developed around 1974 is:

- A. PC-DOS
- B. Apple-DOS
- C. MS-DOS
- D. CP/M

143. A microcomputer operating system which is popular with computer professional and which can support multitasking is

- A. MS-DOS
- B. UNIX
- C. CP/M
- D. OS

144. The two most popular operating systems for 8- and 16-bit personal computers are

- A. CP/M and CP/M-80
- B. MS-DOS and PC-DOS
- C. CP-80 and MS-DOS
- D. MS-DOS and UNIX

#### 145. UNIX operating system

- A. Is multiuser
- B. Is multitasking
- C. Can run on PCs and larger systems
- D. All of the above

146. An operating system for a large computer is

- A. Developed by the actual user
- B. Developed by the buyer
- C. Always supplied by the computer supplier
- D. Supplied by software vendors

147. Which of the following is not an operating system

- A. UNIX
- B. MS-DOS
- C. PASCAL
- D. CP/M

148. XENIX can be used only with

- A. IBM-PCs
- B. Supercomputers
- C. IBM-PC/XTs
- D. IBM-PC/At

149.

The application package is used to

- A. Meet specific needs of a user
- B. Run the computer system better
- C. Run the compiler smoothly
- D. Enable operating system to control hardware better

150. The part of computer system which performs the house keeping functions is called:

- A. Interpreter
- B. Operating system
- C. Compiler
- D. Assembler

151. A computer program written in a high level language is called a

- A. Source program
- B. Machine language program
- C. Object program
- D. None of above

152. Compiler can diagnose

- A. Grammatical errors only
- B. Logical errors only
- C. Grammatical as well as logical errors
- D. Neither grammatical nor logical errors

153. Compiler are generally written by

- A. Computer manufacture
- B. Professional programmers
- C. Computer users
- D. System analysis

154. A programmers, y mistake, writers and instruction to divide, instead of a multiply. Such error can be detected by a/an

- A. Compiler
- B. Compiler or interpreter both
- C. Interpreter
- D. Neither compiler nor interpreter

155. Which is not true about 'syntax' and 'semantics' parts of a computer language

- A. Syntax is generally checked by the programmer
- B. Semantics is the responsibility of the programmer
- C. Semantics is checked mechanically by a computer
- D. Both B and C

156. A series of statements explaining how the data is to be processed is called

- A. Instruction
- B. Program
- C. Compiler
- D. Interpreter

157. The computer language generally translated to pseudo code is

- A. Assembly
- B. Pascal
- C. Machine
- D. PL/I

158. Application programs used with microcomputer are generally written

- by
- A. The user themselves
- B. Hardware suppliers
- C. Team of experts known as 'third parties'
- D. IBM

159. What is true about machine language

- A. It is understood by the computer
- B. It varies from one model of computer to another
- C. It may always be represented by binary numbers
- D. All of the above are true

160. Object program is

- A. A program written in machine language
- B. A program to be translated into machine language
- C. The translation of high-level language into machine language
- D. None of the above

161. What is true about assembly language

- A. It uses symbolic codes
- B. It does not vary from one type of computer to another
- C. It uses binary numbers
- D. None to the above

162. The process of transferring data intended for a peripheral device into a disk (or intermediate store) so that it can be transferred to peripheral at a more convenient time or in bulk, is known as

- A. Multiprogramming
- B. Caching
- C. Spooling
- D. Virtual programming

163. A form of code that uses more than one process and processor, possibly of different type, and that may on occasion have one than one process or processor active at the same time, is known as

- A. Multiprogramming
- B. Broadcasting
- C. Multithreading
- D. Time sharing

164. Situations where two or more processes are reading or writing some shared data and the final result depends on who runs precisely when, are called

- A. Race conditions
- B. Mutual exclusion
- C. Critical sections
- D. Message passing

165. Part of a program where the shared memory is accessed and which should be executed indivisibly, is called

- A. Semaphores
- B. Critical section
- C. Directory
- D. Mutual exclusion

166. A relationship between processes such that each has some part (critical section) which must not be executed while the critical section of another is being executed, is known as

- A. Semaphore
- B. Multiprogramming
- C. Mutual exclusion
- D. Multitasking

167. Which of the following operating system use write through caches?

- A. UNIX      B. UTRIX
- C. DOS       D. XENIX

168. A disk scheduling algorithm in an operating system caused the disk arm to move back and forth across the disk surface in order to service all requests in its path. This is a

- A. First come first served
- B. Scan
- C. Shortest Seek Time First (SSTF)
- D. Eschenbach scheme

169. A system program that sets up an executable program in main memory ready for execution is

- A. Assembler      B. Loader
- C. Linker       D. Test editor

170. A compiler for a high-level language that runs on one machine and produces code for a different machine is called as

- A. Optimizing compiler
- B. Cross compiler
- C. The pass compiler
- D. Multi pass compiler

171. An instruction in a programming language that is replaced by a sequence of instructions prior to assembly or compiling is known as

- A. Procedure name
- B. Label
- C. Macro
- D. Literal

172. Which of the following program converts assembly language program to object program

- A. Assembler
- B. Macro processor
- C. Compiler
- D. Linker

173. Which of the following program forgoes the production of object code to generate absolute machine code and load it into the physical main storage location from which it will be executed immediately upon completion of the assembly

- A. Two pass assembler
- B. Microprocessor
- C. Load-and-go assembler
- D. Compiler

174. System programs such as Compilers are designed so that they are

- A. Reentrant
- B. Serially usable
- C. Non reusable
- D. Recursive

175. Memory

- A. Is a device that performs a sequence of operations specified by instructions in memory
- B. Is the device where information is stored
- C. Is a sequence of instructions
- D. Is typically characterized by interactive processing and time-slicing of the CPU's time to allow quick response to each user

176. A program

- A. Is a device that performs a sequence of operations specified by instructions in memory
- B. Is the device where information is stored
- C. Is a sequence of instruction
- D. Is typically characterized by interactive processing and time of the CPU's time to allow quick response to each user

177. A processor

- A. Is a device that performs a sequence of operations specified by instructions in memory
- B. Is the device where information is stored
- C. is a sequence of instructions
- D. is typically characterized and time by interactive processing and time of the CPU's time to allow quick response to each user

178. Assembler is

- A. A program that places programs into memory and prepares them for execution
- B. A program that automate the translation of assembly language into machine language
- C. A program that accepts a program written in a high level language and produces an object program
- D. Is a program that appears to execute a source program as if it were machine language

179. An Interpreter is

- A. A program that places programs into memory and prepares them for execution
- B. A program that automate the translation of assembly language into machine language
- C. Program that access a program written in a high level language and produces an object program
- D. Is a program that appears to execute a source program as if it were machine language

180. A compiler is

- A. A program that places programs into memory and prepares them for execution
- B. A program that automate the translation of assembly language into machine language
- C. Program that accepts a program written in a high level language and produces an object program
- D. Is a program that appears to execute a source program as if it were machine language

181. A loader is

- A. A program that places programs into memory and prepares them for execution
- B. A program that automate the translation of assembly language into machine language
- C. A program that accepts a program written in a high level languages and produces and object program
- D. Is a program that appears to execute a source program as if it were machine language

182. Virtual Memory

- A. Is a method of memory allocation by which the program is subdivided into equal portions, or pages and core is subdivided into equal portions or blocks
- B. Consists of those addresses that may be generated by a processor during execute on of a computation
- C. Is a method of allocating processor time
- D. Allows multiple programs to reside in separate areas of core at the time

**183. Paging**

- A. Is a method of memory allocation by which the program is subdivided into equal portions or pages and core is subdivided into equal portions or blocks
- B. Consists of those addresses that may be generated by a processor during execution of a computation
- C. Is a method of allocating processor time
- D. Allows multiple programs to reside in separate areas of core at the time

**184. Multiprogramming**

- A. Is a method of memory allocation by which the program is subdivided into equal portions or pages and core is subdivided into equal portions or blocks
- B. Consists of those addresses that may be generated by a processor during execution of a computation
- C. Is a method of allocating processor time
- D. Allows multiple programs to reside in separate areas of core at the time

**185. The Memory Buffer Register (MBR)**

- A. Is a hardware memory device which denotes the location of the current instruction being executed
- B. Is a group of electrical circuits (hardware) that performs the intent of instructions fetched from memory
- C. Contains the address of the memory location that is to be read from or stored into
- D. Contains a copy of the designated memory location specified by the MAR after a "read" or the new contents of the memory prior to a "write"

**186. The Memory Address Register**

- A. Is a hardware memory device which denotes the location of the current instruction being executed
- B. Is a group of electrical circuits (hardware), that performs the intent of instructions fetched from memory
- C. Contains the address of the memory location that is to be read from or stored into
- D. Contains a copy of the designated memory location specified by the MAR after a "read" or the new contents of the memory prior to a "write"

**187. The instructions register**

- A. Is a hardware memory device which denotes the location of the current instruction being executed
- B. Is a group of electrical circuits (hardware), that performs the intent of instruction fetched from memory
- C. Contains the address of the memory location that is to be read from or stored into
- D. Contains a copy of the designated memory location specified by the MAR after a "read" or the new contents of the memory prior to a "write"

**188. Advantage(s) of using assembly language rather than machine language is (are):**

- A. It is mnemonic and easy to read
- B. Addresses any symbolic, not absolute
- C. Introduction of data to program is easier
- D. All of the above

**189. Pass 1**

- A. Assign address to all statements in the program
- B. Save the values assigned to all labels for use in Pass 2
- C. Perform some processing of assembler directives
- D. All of the above

**190. Pass 2**

- A. Assemble instruction and generate data
- B. Perform processing of assembler directives not done during pas 1
- C. Write the object program and the assembly listing
- D. All of the above

**191. The system/370 assembler language**

- A. Allows the programmer to write base registers and displacements explicitly in the source program
- B. Is used to remember which of the general-purpose registers are currently available as base registers, and what base addresses they contain
- C. Allows multiple programs to reside in separate areas of core at the same time
- D. Is a term that refers to the control programs of an operating system

**192. A base register table**

- A. Allows the programmer to write base registers and displacements explicitly in the source program
- B. Is used to remember which of the general-purpose registers are currently available as base registers, and what base addresses they contain
- C. Allows multiple programs to reside in separate areas of core at the same time
- D. Is a term that refers to the control programs of an operating system

**193. Addressing structure**

- A. Defines the fundamental method of determining effective operand addresses
- B. Layer variations in the use of fundamental addressing structures, or some associated actions which are related to addressing
- C. Performs indicated operations on two fast registers of the machine and leave the result in one of the registers
- D. All of the above

**194. Addressing modes**

- A. Defines the fundamental method of determining effective operand addresses
- B. Are variations in the use of fundamental addressing structures, or some associated actions which are related to addressing
- C. Performs indicated operations on two fast registers of the machine and leave the result in one of the registers
- D. All of the above

**195. The Register-to Register (RR) instructions**

- A. Have both their operands in the main store
- B. Which perform an operation on a register operand and an operand which is located in the main store, generally leaving the result in the register, except also written into the specified storage locations
- C. Which perform indicated operations on two fast registers of the machine and leave the result in one of the registers
- D. All of the above

**196. The Register-to-Register (RS)**

- A. Have both their operands in the main store
- B. Which perform an operation on a register operand and an operand which is located in the main store, generally leaving the result in the register, except in the case of store operation when it is also written into the specified storage locations
- C. Which perform indicated operations on two fast registers of the machine and have the result in one of the registers
- D. All of the above

**197. The Storage-to Storage instructions**

- A. Have both their operands in the main store
- B. Which perform an operation on a register operand and an operand which is located in the main store, generally leaving the result in the register, except in the case of store operation when it is also written into the specified storage location
- C. Which perform indicated operations on two fast registers of the machine and have the result in one of the registers
- D. All of the above

**198. Which of the following are(is) Language Processor(s)**

- A. Assembles      B. Interpreters
- C. Compilers      D. All the above

**199. The specific tasks Storage Manager performs are(is)**

- A. Allocation/deal location of storage to programs
- B. Protection of the storage area allocated to a program from illegal access by other programs in the system
- C. The status of each program
- D. Both (A) and (B)

**200. The process manager (or processor manager) has to keep track of:**

- A. The status of each program
- B. The priority of each program
- C. The information management support to a programmer using the system
- D. Both (A) and (B)

**201. The advantage(s) of incorporating the macro processor into pass I is:**

- A. Many functions do not have to be implemented twice
- B. Functions are combined and it is not necessary to create intermediate files as output from the macros processor and input to the assembler
- C. More flexibility is available to the programmer in that he may use all the features of the assembler in conjunction with macros
- D. All of the above

**202. The macro processor must perform**

- A. Recognize macro definitions and macro calls
- B. Save the macro definitions
- C. Expand macros calls and substitute arguments
- D. All of the above

**203. In which way(s) a macro processor for assembly language can be implemented:**

- A. Independent two-pass processor
- B. Independent one-pass processor
- C. Processor incorporated into pass I of a standard two-pass assembler
- D. All of the above

**204. Which of the following functions (are) performed by the loader**

- A. Allocate space in memory for the programs and resolve symbolic references between object decks
- B. Adjust all address dependent locations, such as address constants, to correspond to the allocated space
- C. Physically place the machine instructions and data into memory
- D. All of the above

**205. When a computer is first tuned on or restarted, a special type of absolute loader is executed, called a**

- A. "Compile and Go" loader
- B. Boot strap loader
- C. Boot loader
- D. Relating loader

**206. In MS-DOS 5.0, which is the number that acts a code to uniquely identify the software**

- A. MS
- B. DOS
- C. MS DOS
- D. 5.0

**207. The higher versions of the operating systems are so written that programs designed for earlier versions can still be run. What is it called?**

- A. Upgradability
- B. Universality
- C. Upward mobility
- D. Upward compatibility

**208. What is the name to the process of initializing a microcomputer with its operating system?**

- A. Cold booting
- B. Warm booting
- C. Booting
- D. Root recording

**209. A hardware device that capable of executing a sequence of instructions, is known as**

- A. CPU
- B. ALU
- C. CU
- D. Processor

**210. The function(s) performed by the paging software is(are)**

- A. Implementation of the access environment for all programs in the system
- B. Management of the physical address space
- C. Sharing and protection
- D. All of the above

**211. The file level is a descriptor containing all the information which would be required**

- A. To connect the file to a program
- B. To guard against the destructions of the inadvertently or deliberately, by another program
- C. To facilitate easy creation, storage and access of files
- D. Both (A) and (B)

**212. The task(s) of the lexical analysis phase is(are)**

- A. To parse the source program into the language
- B. To build a literal table and an identifier table
- C. To build a uniform symbol table
- D. All of the above

**213. Which is a permanent database in the general model of compiler?**

- A. Literal Table
- B. Terminal Table
- C. Identifier Table
- D. Source code

**214. Which table is permanent databases that has entry for each terminal symbol**

- A. Terminal table
- B. Identifier table
- C. Literal table
- D. Reductions

**215. While running DOS on a PC, which command would be used to duplicate the entire diskette?**

- A. COPY
- B. CHKDSK
- C. DISK COPY
- D. TYPE

216. Which of the following filename extension suggests that the file is a backup copy of another file?

- A. TXT
- B. COM
- C. BAS
- D. BAK

217. While working with MS-DOS, which command will you use to transfer a specific file from one disk to another?

- A. DISK COPY
- B. RENAME
- C. COPY
- D. FORMAT

218. With MS-DOS which command will divide the surface of the blank floppy disk in to sectors and assign a unique address to each one?

- A. FORMAT command
- B. VER command
- C. FAT command
- D. CHKDSK command

219. The functions of the Storage Assignment is(are)

- A. To assign storage to all variables referenced in the source program
- B. To assign storage to all temporary locations that are necessary for intermediate results
- C. To assign storage to literals, and to ensure that the storage is allocated and appropriate locations are initialized
- D. All of the above

220. A non-relocatable program is one which

- A. Cannot be made to execute in any area of storage other than the one designated for it at the time of its coding or translation
- B. Consists of a program and relevant information for its relocation
- C. Can itself performs the relocation of its address-sensitive portions
- D. All of the above

221. A relocate program from is one which

- A. Cannot be made to execute in any area of storage other than the one designated for it at the time of its coding or translation
- B. Consists of a program and relevant information for its relocation
- C. Can itself performs the relocation of its address-sensitive portions
- D. All of the above

222. A self-relocating program is one which

- A. Cannot be made to execute in any area of storage other than the one designated for it at the time of its coding or translation
- B. Consists of a program and relevant information for its relocation
- C. Can itself performs the relocation of its address-sensitive portions
- D. All of the above

223. The term "operating system" means

- A. A set of programs which controls computer working
- B. The way a computer operator works
- C. Conversion of high level language into machine code
- D. The way a floppy disk drive operates

224. Which of the following software types is used to simplify using system software?

- A. Spreadsheet
- B. Timesharing
- C. Operating environment
- D. Multitasking

225. Which of the following is not applications software?

- A. Word processing
- B. UNIX
- C. Spreadsheet
- D. Desk top publishing

226. Which of the following types of software should you use if you often need to create, edit, and print documents?

- A. Word processing
- B. UNIX
- C. Spreadsheet
- D. Desktop publishing

227. Which of the following will determine your choice of systems software for your computer

- A. Is the applications software you want to use compatible with it?
- B. Is it expensive
- C. Is it compatible with your hardware?
- D. Both (A) and (C)

228. Terminal Table

- A. Contains all constants in the program
- B. A permanent table of decision rules in the form of patterns for matching with the uniform symbol table to discover syntactic structure
- C. Consists of a full or partial list of the token's as they appear in the program. Created by lexical analysis and used for syntax analysis and interpretation
- D. A permanent table which lists all key words and special symbolic of the language in symbolic form

229. Assembly code data base is associated with

- A. Assembly language version of the program which is created by the code generation phase and is input to the assembly phase
- B. A permanent table of decision rules in with the uniform symbol table to discover syntactic structure
- C. Consists of a full or partial list or the token's as they appear in the program. Created by Lexical analysis and used for syntax analysis interpretation
- D. A permanent table with lists all key words and special symbolic form

230. The table created by lexical analysis to describe all literals used in the source program is

- A. Terminal table
- B. Identifier table
- C. Literal table
- D. Reduction

231. The functions of the syntax phase is

- A. To recognize the major constructs of the language and to call the appropriate action routines that will generate the intermediate form or matrix for these constructs
- B. To build a literal table and an identifier table
- C. To build a uniform symbol table
- D. To parse source program into the basic elements or tokens of the language

232. In an absolute loading scheme, which loader function is accomplished by assembler

- A. Reallocation
- B. Linking
- C. Allocation
- D. Loading

233. In an absolute loading scheme, which loader function is accomplished by loader

- A. Reallocation
- B. Linking
- C. Allocation
- D. Loading

234. The advantages inherent to using high level language is are

- A. Fewer people, less management and shorter transition in learning time
- B. Improved debugging capability, and superior documentation
- C. A greater degree of machine independence
- D. All of the above

235. The action of parsing the source program into the proper syntactic classes is known as

- A. Syntax analysis
- B. Interpretation
- C. Lexical analysis
- D. General syntax analysis

236. In analyzing the compilation of PL/I program, the term "Lexical analysis" is associated with
- Recognition of basic syntactic constructs through reductions
  - Recognition of basic elements and creation of uniform symbols
  - Creation of more optional matrix
  - Use of macro processor to produce more optimal assembly code
237. In analyzing the compilation of PL/I program, the term "Machine independent optimization" is associated with
- Recognition of basic syntactic constructs through reductions
  - Recognition of basic elements and creation of uniform symbols
  - Creation of more optional matrix
  - Use of macro processor to produce more optional assembly code
238. In analyzing the compilation of PL/I program, the description "resolving symbolic address (labels) and generating machine language" is associated with
- Assembly and output
  - Storage assignment
  - Code generation
  - Syntax analysis
239. In analyzing the compilation of PL/I program, the description "creation of more optimal matrix" is associated with
- Assembly and output
  - Syntax analysis
  - Code generation
  - Machine independent optimization
240. Which of the following is not a part of the operating system?
- Supervisor
  - Job-control program
  - Performance monitor
  - Input/output control program
241. Which of the following is not an advantage of multiprogramming?
- Increased throughput
  - Shorter response time
  - Decreased operating overhead
  - Ability to assign priorities to jobs
242. In which addressing mode the contents of a register specified in the instruction are first decremented, and then these contents are used as the effective address of the operands
- Index addressing
  - Auto increment
  - Indirect addressing
  - Auto decrement
243. In which addressing mode, the effective address of the operand is generated by adding a constant value to the contents of register?
- Absolute mode
  - Immediate mode
  - Indirect mode
  - Index mode
244. In what modules, multiple instances of execution will yield the same result even if one instance has not terminated before the next one has begun?
- Non reusable module
  - Reenter able mode
  - Serially reusable
  - Recursive module
245. What is the name given to all the programs inside the computer with makes it usable?
- Application software
  - Firm ware
  - System software
  - Shareware
246. A translator which reads an entire program written in a high level language and converts it into machine language code is:
- Assembler
  - Compiler
  - Translator
  - System software
247. Which of the following is helpful in evaluating applications software what will best suit your needs?
- Recommendations by other users
  - Objective software reviews
  - Computer magazines
  - All of the above
248. If you want to execute more than one program at a time, the systems software you are using must be capable of:
- Word processing
  - Compiling
  - Virtual memory
  - Multitasking
249. Which of the following types of software must you have in main memory in order to use your keyboard?
- Word processing
  - Spreadsheet
  - System
  - Applications
250. Which of the following might be used to convert high-level language instructions into machine language?
- System software
  - An operating environment
  - Application software
  - An interpreter
251. Multiprogramming was made possible by
- Input/output units that operate independently of the CPU
  - Operating system
  - Both (A) and (B)
  - Neither (A) nor (B)
252. What is the name of the stem which dealt with the running of the actual computer and not with the programming problems?
- Operating system
  - Objective program
  - System program
  - Source program
253. Which of the following scheduling objectives should be applied to the following: the system should admit jobs to create a mix that will keep most devices busy
- To be fair
  - To obey priorities
  - To balance resource utilization
  - To be predictable
254. Which policy replaces a page if it is not in the favored subset of a process's pages?
- FIFO
  - LFU
  - LRU
  - Working set

255. In which of the storage placement strategies a program is placed in the smallest available hole in the main memory?  
A. Best fit      B. Worst fit  
C. First fit      D. Buddy

256. Which of the following statements is false?

- A. Protection is segmentation systems is more natural than it is in paging systems
- B. Sharing is more natural in segmentation systems than in paging system
- C. Associative memory speeds up the dynamic address translation
- D. Every cell of the associative memory is searched sequentially

257. Can you name of the major operating system used in computers?

- A. MS DOS      B. UNIX
- C. OS 2      D. All the above

258. What is the name of the operating system which was originally designed by scientists and engineers for use by scientists and engineers?

- A. XENIX      B. OS/2
- C. UNIX      D. MS DOS

259. Which are the most important features of Microsoft Windows program?

- A. Windows
- B. Icons
- C. Pull-down menus
- D. All of the above

260. What is name given to the organized collection of software that controls the overall operation of a computer?

- A. Working system
- B. Operating system
- C. Peripheral system
- D. Controlling system

261. What is the name given to the values that are automatically provided by software to reduce keystrokes and improve a computer productivity?

- A. Defined values      B. Default values
- C. Fixed values      D. Special values

262. Producer consumer problem can be solved using

- A. Semaphores
- B. Monitors
- C. Event counters
- D. All of the above

263. Situations where two or more processes are reading or writing some shared data and the final result depends on who runs precisely when, are called

- A. Race conditions
- B. Mutual exclusions
- C. Critical sections
- D. Message passing

264. Process is

- A. Program in high level language kept on disk
- B. Contents of main memory
- C. A program in execution
- D. A job in secondary memory

265. In which addressing mode the effective address of the operand is the contents of a register specified in the instruction and after accessing the operand, the contents of this register is incremented to point to the next item in the list?

- A. Index addressing
- B. Auto increment
- C. Indirect addressing
- D. Auto decrement

266. A relationship between processes such that each has some part (critical section) which must not be executed while the critical section of another is being executed, is known as

- A. Semaphores
- B. Multiprogramming
- C. Mutual exclusion
- D. Multitasking

The process of transferring data intended for a peripheral device into a disk (or intermediate store) so that it can be transferred to peripheral at a more convenient time or in bulk, is known as

- A. Multiprogramming
- B. Caching
- C. Spooling
- D. Virtual programming

267. Which of the following statements is false?

- A. A small page size cause large page tables
- B. Internal fragmentation is increased with small pages
- C. A large size causes instructions and data that will not be referenced brought into primary storage
- D. I/O transfers are more efficient with large pages

268. The powerful text editor called PC-Write can be used by anybody by paying a small fee. Such programs are called

- A. Software      B. Firmware
- C. Shareware      D. Mind ware

269. What is the name of the operating system that reads and reacts in terms of actual time

- A. Batch system
- B. Real time system
- C. Quick response system
- D. Time sharing system

271. What is the name of the technique in which the operating system of a computer executes several programs concurrently by switching back and forth between them?

- A. Partitioning      B. Windowing
- C. Multitasking      D. Paging

272. What is the name given to the software which can be legally compiled and often used for free?

- A. Shareware program
- B. Firmware program
- C. Public domain program
- D. Mind ware

273. All the time a computer is switched on, its operating system software has to stay in

- A. Main storage      B. Floppy disk
- C. Primary storage      D. Disk drive

274. A front-end processor is usually used in:

- A. Multiprogramming
- B. Timesharing
- C. Virtual storage
- D. Multiprocessing

275. The problem of thrashing is affected significantly by:

- A. Program structure
- B. Primary-storage size
- C. Program size
- D. All of the above

276. Two basic types of operating systems are:

- A. Sequential and direct
- B. Sequential and real time
- C. Batch and timesharing
- D. Batch and interactive

- 277. Remote computing service involve the use of timesharing and**
- Multiprocessing
  - Batch processing
  - Interactive processing
  - Real time processing
- 278. Non modifiable procedures are called**
- Seriously unusable procedures
  - Reentrant procedures
  - Concurrent procedures
  - Top down procedures
- 279. An instruction in a programming language that is replaced by a sequence of instructions prior to assembly or compiling known as**
- Procedure name
  - Label
  - Macro
  - Literal
- 280. The main function of the dispatcher (the portion of the process scheduler) is**
- Swapping a process to the disk
  - Assigning ready process to the CPU
  - Suspending some of the processes when the CPU load is high
  - Bring processes from the disk to the main memory
- 281. The primary job of the operating system of a computer is to**
- Command resources
  - Provide utilities
  - Manage resources
  - Be user friendly
- 282. The operating system of a computer serves as a software interface between the user and**
- Hardware
  - Memory
  - Peripheral
  - Screen
- 283. Which of the following systems use write through operating**
- UNIX
  - ULTRIX
  - DOS
  - XENIX
- 284. A system program that combines the separately compiled modules of a program into a form suitable for execution**
- Assembler
  - Cross compiler
  - Linking loader
  - Load and go
- 285. What problem is solved by Dijkstra's banker's algorithm?**
- Mutual exclusion
  - Deadlock avoidance
  - Deadlock recovery
  - Cache coherence
- 286. A compiler for a high-level language that runs on one machine and produces code for a different machine is called is**
- Optimizing compiler
  - Cross compiler
  - One pass compiler
  - Multi pass compiler
- 287. Banker's algorithm for resource allocation deals with**
- Deadlock prevention
  - Deadlock recovery
  - Deadlock avoidance
  - Mutual exclusion
- 288. To avoid race condition the maximum number of processes that may be simultaneously inside the critical section is:**
- Hundred
  - One
  - Two
  - Three
- 289. Daisy chain is device for**
- Connecting a number of controllers to a device
  - Connecting a number of device to controller
  - Interconnecting a number of devices to a number of controllers
  - All of the above
- 290. Which of the following enables**
- A part of data to be displayed
  - Entire data to be displayed
  - Full data displayed
  - No data to be displayed
- 291. Information in an memory that is no longer valid or wanted is known as**
- Non-volatile
  - Surplus
  - Volatile
  - Garbage
- 292. Which of the following is a type of software used on microcomputers?**
- MS-DOS
  - Unix
  - PC-DOS
  - All of the above
- 293. Which of the following are loaded into main memory when the computer is booted?**
- Internal command instructions
  - External command instructions
  - Utility programs
  - Word processing instructions
- 294. What is the name of the operating system for the laptop computer called MacLife?**
- Windows
  - MS-DOS
  - DOS
  - OZ
- 295. What is the operating system used by Macintosh computers?**
- System 7.0
  - Unix
  - AU/X
  - Either A and B
- 296. Who developed the operating System/2 (OS/2) for running IBM's new PS/2 family of microcomputers?**
- IBM
  - Bell Laboratories
  - Microsoft Inc
  - Digital Research Corporation
- 297. In which addressing mode the operand is given explicitly in the instruction?**
- Absolute mode
  - Indirect mode
  - Immediate mode
  - Index mode
- 298. Which of the following programs is not a utility?**
- Debugger
  - Spooler
  - Editor
  - All of the above
- 299. Job Control Language (JCL) statements are used to**
- Read the input from the slow-speed magnetic disk
  - Specify to the operating system, the beginning and end of a job in a batch
  - Allocate the CPU to a job
  - All of the above
- 300. Operating system is**
- A collection of hardware components
  - A collection of input-output devices
  - A collection of software routines
  - All of the above
- 301. Most of the microcomputer's operating systems like Apple DOS, MS DOS and PC DOS etc. are called disk operating systems because**
- They are memory resident
  - They are initially stored on disk
  - They are available on magnetic tapes
  - They are partly in primary memory and partly on disk
- 302. When did IBM release the first version of disk operating system DOS version 1.0?**
- 1981
  - 1983
  - 1982
  - 1984

303. IBM released its first PC in 1981.  
Can you name the operating system which was most popular at that time?  
A. MS-DOS      B. OS/360  
C. PC-DOS      D. CP/M

304. Page fault frequency in an operating system is reduced when the  
A. Size of pages is reduced  
B. Processes tend to be I/O-bound  
C. Processes tend to be CPU-bound  
D. Locality of reference is applicable to the process

305. Which of the following is true for testing and debugging?  
A. Testing checks for logical errors in the programs while debugging is a process of correcting those errors in the programs  
B. Testing detects the syntax errors in the program while debugging corrects those errors in the program  
C. Testing and debugging indicate the same thing  
D. All of the above

306. If special forms are needed for printing the output, the programmer specifies these forms through?

- A. JCL
- B. Utility program
- C. IPL
- D. Load modules

307. Under multiprogramming turnaround time for short jobs is usually..... for long jobs is slightly.....  
A. Lengthened; shortened  
B. Shortened; shortened  
C. Shortened; lengthened  
D. Lengthened; lengthened

308. The state transition initiated by the user process itself in an operating system is  
A. Block      B. Wake up  
C. Dispatch      D. Timer run out

309. Which of the following terms refers to the degree to which data in database system are accurate and correct?  
A. Data security  
B. Data independence  
C. Data validity  
D. Data integrity

310. The total time to prepare a disk drive mechanism for a block of data to be read from it is  
A. Latency  
B. Latency plus transmission time  
C. Latency plus seek time  
D. Latency plus seek time plus transmission time

311. Indicate whether the statement LDA B is a statement, in  
A. Machine language  
B. High level language  
C. Assembly language  
D. All of the above

312. Indicate which describes the term "software"  
A. Systems programs only  
B. Both A and B  
C. Application programs only  
D. All of the printer

313. Bug means  
A. A logical error in a program  
B. A difficult syntax error in a program  
C. Documenting programs using an efficient documentation tools  
D. All of the above

314. A development strategy whereby the executive control modules of a system are coded and tested first, is known as  
A. Bottom-up development  
B. Left-Right development  
C. Top-down development  
D. All of the above

315. Indicate which, of the following, is not true about Nassi-Shneiderman charts  
A. These charts are type of graphical design tool  
B. These charts cannot represent CASE constructs  
C. These charts can represent three fundamental control structures  
D. All of the above

316. Indicate which, of the following, is not true about a data flow diagram (DFD)  
A. It is a graphical representation of the flow of data through the system  
B. It is used to analyze any system or software at any level of abstractions  
C. It is very important tool, used by system analysts and designers  
D. All of the above

317. Indicate which of the following checks, cannot be carried out on the input data to a system?  
A. Consistency check  
B. Range checks  
C. Syntax check  
D. All of the above

318. Indicate which of the following is not true about documentation?  
A. Documentation, of system, should be as clear and direct as possible  
B. Documentation increases the maintenance time and cost  
C. Documentation gives better understanding of the problem  
D. All of the above

319. C is  
A. An assembly language  
B. A third generation high-level language  
C. A machine language  
D. All of the above

320. Which of the following modules does not incorporate initialization of values changed by the module?  
A. None reusable module  
B. Reentrantable module  
C. Serially reusable module  
D. All of the above

321. Which of the following statement is false?  
A. A process scheduling algorithm is preemptive if the CPU can be forcibly removed from a process  
B. Time sharing systems generally use preemptive CPU scheduling  
C. Response time are more predictable in preemptive systems than in non-preemptive systems  
D. Real time systems generally use non-preemptive CPU scheduling

322. Indicate which, of the following, in not true about an interpreter  
A. Interpreter generates an object program from the source program  
B. Interpreter is kind of translator  
C. Interpreter analyses each source statement every time it is to be executed  
D. All of the above

323. Indicate which, of the following in not true about 4GL  
A. 4GL does not support a high-level of screen interaction  
B. Many database management system packages support 4GL  
C. A 4GL is software tool which is written possibly, in some third generation language  
D. All of the above

- 324. An algorithm is describes as**
- A computer language
  - A step by step procedure for solving a problem
  - A branch of mathematics
  - All of the above
- 325. A sequence of instructions, in a computer language to get the desired result, is known as**
- Algorithm
  - Program
  - Decision table
  - All of the above
- 326. The strategy of allowing processes that are logically runnable to be temporarily suspended is called**
- Preemptive scheduling
  - Shortest job first
  - Non preemptive scheduling
  - First come first served
- 327. Part of a program where the shared memory is accessed and which should be executed indivisibly, is called**
- Semaphores
  - Critical section
  - Directory
  - Mutual exclusion
- 328. The technique, for sharing the time of a computer among several jobs. Which switches jobs so rapidly such that each job appears to have the computer to itself:**
- Time sharing
  - Time domain
  - Time out
  - FIFO
- 329. The operating system manages**
- Memory
  - Disks and I/O device
  - Processor
  - All of the above

- 330. A form of code that uses more than one process and processor, possibly of different type, and that may on occasions have more than one process or processor active at the same time is known as**
- Multiprogramming
  - Broadcasting
  - Multithreading
  - Time sharing
- 331. Assembly language**
- Is usually the primary user interface
  - Requires fixed-format commands
  - Is a mnemonic form of machine language
  - Is quite different from the SCL interpreter
- 332. Which of following is/are the advantage(s) of modular programming?**
- The program is much easier to change
  - Modules can be reused in other programs
  - Easy debugging
  - Easy to compile
- 333. Which of the following can be accessed by transfer vector approach of linking?**
- External data segments
  - Data located in other procedures
  - External subroutines
  - All of the above
- 334. The linker**
- Is the same as the loader
  - Is required to create a load module
  - Uses source code as input
  - Is always used before programs are executed
- 335. Indicate which is a pre-emptive scheduling algorithm**
- Round-robin
  - Priority-based
  - Shortest-job-next
  - All of the above
- 336. A characteristic of an on-line real-time system is**
- More than one CPU
  - Off line batch processing
  - No delay in processing
  - All of the above
- 337. Indicate which, of the following, is the worst type of module coupling**
- Content coupling
  - Control coupling
  - No coupling
  - All of the above
- 338. A page fault**
- Is an error is a specific page
  - Occurs when a program accesses a page of memory
  - Is an access to a page not currently in memory
  - Is a reference to a page belonging to another program
- 339. In memory system, boundary registers**
- Are used for temporary program variable storage
  - Are only necessary with fixed partitions
  - Track page boundaries
  - Track the beginning and ending of programs
- 340. Re-locatable programs**
- Cannot be used with fixed partitions
  - Can be loaded almost anywhere in memory
  - Do not need a linker
  - Can be loaded only at one specific location
- 341. The FIFO algorithm**
- Executes first the job that last entered the queue
  - Executes first the job that first entered the queue
  - Execute first the job that has been in the queue the longest
  - Executes first the job with the least processor needs
- 342. The user interface:**
- Is relatively unimportant
  - Is slanted toward novice users
  - Supports both novice and experienced users
  - Is easy to provide, even with good support
- 343. Memory management is:**
- Not used in modern operating system
  - Replaced with virtual memory on current systems
  - Not used on multiprogramming systems
  - Critical for even the simplest operating systems
- 344. The practice of "bundling" refers to**
- Selling computers along
  - Selling peripheral devices with computer
  - Selling software to run on computers
  - Giving away software with a computer purchase
- 345. The primary purpose of an operating systems is to:**
- Make computer easier to use
  - Keep system programmers employed
  - Make the most efficient use of the hardware
  - Allow people to sue the computers

**346. Multiprogramming system**

- A. Are easier to develop than single programming system
- B. Execute each job faster
- C. Execute more jobs in the same time period
- D. Are used only on large mainframe computers

**347. Spooling is most beneficial in a multiprogramming environment where:**

- A. Most jobs are CPU-bond
- B. Most jobs are I/O-bond
- C. Jobs are evenly divided as I/O-bond and CPU-bond
- D. There is limited primary memory and need for secondary memory

**348. Software that measures, monitors, analyzes, and controls real-world events is called:**

- A. System software
- B. Scientific software
- C. Real-time software
- D. Business software

**349. Object modules generated by assemblers that contain unresolved external references are resolved for two or more object modules by an**

- A. Operating system
- B. Linker
- C. Loader
- D. Compiler

**350. Which of the following is false about disk when compared to main memory?**

- A. Non-volatile
- B. Lower price per bit
- C. Longer storage capacity
- D. Faster

351. Which of the following capabilities is required for a system program to execute more than one program at a time?

- A. Word processing
- B. Virtual memory
- C. Compiling
- D. Multitasking

352. A critical region is

- A. A program segment that has not been proved bug-free
- B. A program segment that often causes unexpected system crashes
- C. A program segment where shared resources are accessed
- D. One which is enclosed by a pair of  $V$  and  $W$  operations on semaphores

353. Which of the following addressing modes, facilitates access to an operand whose location is defined relative to the beginning of the data structure in which it appears?

- A. Ascending
- B. Index
- C. Sorting
- D. Indirect

354. The register or main memory location which contains the effective address of the operand is known as

- A. Pointer
- B. Special location
- C. Indexed register
- D. Scratch pad

355. System programs such as compilers are designed so that they are

- A. Re-enterable
- B. Serially usable
- C. Non reusable
- D. Recursive

356. Special software to create a job queue is called a

- A. Drive
- B. Interpreter
- C. Spooler
- D. Linkage editor

357. The most common security failure is

- A. Carelessness by users
- B. Depending on passwords
- C. Too much emphasis on preventing physical access
- D. Insufficient technology used to prevent breaches

**358. A public key encryption system**

- A. Allows anyone to decode the transmission
- B. Allows only the correct sender to decode the data
- C. Allows only the correct receiver to decode the data
- D. Does not encode the data before transmitting it

359. Supervisor state is

- A. Never used
- B. Entered by programs when they enter the processor
- C. Required to perform any I/O
- D. Only allowed to the operating system

360. A high paging rate

- A. May cause a high I/O rate
- B. Keeps the system running well
- C. Is a symptom of too much processor activity
- D. Always creates a slow system

361. Round robin scheduling is essentially the preemptive version of

- A. FIFO
- B. FILO
- C. FCFS
- D. Longest time first

362. If the number of bits in virtual address of a program is 12 and the page size 0.5 K bytes, the number of pages in the virtual address space is

- A. 16
- B. 32
- C. 64
- D. 128

363. In which of the storage placement strategies a program is placed in the largest available hole in the main memory?

- A. Best fit
- B. Worst fit
- C. First fit
- D. Buddy

364. For how many processes which are sharing common data, the Dekker's algorithm implements mutual exclusion?

- A. 1
- B. 2
- C. 3
- D. 4

365. A disk scheduling algorithm in an operating system causes the disk arm to move back and forth across the disk surface in order to service all requests in its path. This is a

- A. First come first served
- B. Scan
- C. Shortest Seek Time First (SSTF)
- D. FIFO

366. Round-robin scheduling

- A. Allows interactive tasks quicker access to the processor
- B. Is quite complex to implement
- C. Gives each task the same chance at the processor
- D. Allows processor-bound tasks more time in the processor

367. Inter process communication

- A. Is required for all processes
- B. Is usually done via disk drives
- C. Is never necessary
- D. Allows processes to synchronize activity

368. Fork is

- A. The dispatching of a task
- B. The creation of a new job
- C. The creation of a new process
- D. Increasing the priority of a task

369. A process is another name for

- A. A job
- B. Paging
- C. A task
- D. The operating system dispatcher

- 370. Relocation bits used by relocating loader are specified (generated by)**
- Relocating loader itself
  - Assembler or translator
  - Linker
  - Macro processor
- 371. Device independence**
- Allows the computer to run without I/O device
  - Makes all devices look the same to the operating system
  - Allows programs to be written more easily
  - Allows tape drives to be substituted for disk drives
- 372. User-Friendly Systems are:**
- Required for object-oriented programming
  - Easy to develop
  - Common among traditional mainframe operating systems
  - Becoming more common
- 373. Disk scheduling includes deciding**
- Which should be accessed next
  - Order in which disk access requests must be serviced
  - The physical location of the file
  - The logical location of the file
- 374. Which of the following translator program converts assembly language program to object program**
- Assembler
  - Macro processor
  - Compiler
  - Linker
- 375. Data encryption**
- Is mostly used by public networks
  - Is mostly used by financial networks
  - Cannot be used by private installations
  - Is not necessary, since data cannot be intercepted
- 376. Seeks analysis**
- Is used for analyzing paging problem
  - Is used for analyzing device busy problems
  - Is used for analyzing control-unit busy problem
  - Is only shown on real-time displays
- 377. Swapping**
- Works best with many small partitions
  - Allows many programs to use memory simultaneously
  - Allows each program in turn to use the memory
  - Does not work with overlaying
- 378. Feedback queue**
- Are very easy to implement
  - Dispatch tasks according to execution characteristics
  - Are used to favor real-time tasks
  - Require manual intervention to implement properly
- 379. A file organization component of a VSAM file is**
- Relative record data set
  - Entry sequential data set
  - Keyed sequential data set
  - All of the above
- 380. The file structure that redefines its first record at a basic of zero users is the term:**
- Relative organization
  - Dynamic reallocation
  - Key fielding
  - Hashing
- 381. File record length**
- Should always be fixed
  - Should always be variable
  - Depends upon the size of the file
  - Should be chosen to match the data characteristics
- 382. An incremental backup**
- Should be done each month
  - Uses more tapes
  - Saves all files
  - Saves only files that have recently changed
- 383. A partitioned data set is most used for**
- Program or source library
  - Storing backup information
  - Storing program data
  - Storing ISAM file
- 384. System generation:**
- Is always quite simple
  - Is always very difficult
  - Varies in difficulty between systems
  - Requires extensive tools to be understandable
- 385. Object code**
- Is ready to execute
  - Is the output of compilers, but not assemblers
  - Must be "loaded" before execution
  - Must be rewritten before execution
- 386. Virtual memory is**
- Simple to implement
  - Used in all major commercial operating system
  - Less efficient in utilization of memory
  - Useful when fast I/O devices are not available
- 387. System maintenance:**
- Is usually not necessary
  - Is necessary on all systems, regardless of how good
  - Is not required if the system is well written
  - Always required several programs
- 388. Which of the following statements is not true?**
- Time sharing is an example of multiprogramming
  - JCL is used only to communicate between systems programmers
  - A batch file contains a series of operating system commands
  - The primary function of operating systems is to make the computer hardware easily usable
- 389. What scheduling algorithm allows processes that are logical runnable to be temporarily suspended?**
- Preemptive scheduling
  - FIFO
  - Non-preemptive scheduling
  - FCFS
- 390. The term 'polling' in a computer means a process by which a computer system**
- detects/corrects errors
  - Multiplexes the inputs and updates the memory accordingly
  - Decides correct alternative by analyzing several ones
  - Inquiries to see if a terminal has any transaction to send
- 391. In a magnetic disk, data is recorded in a set of concentric tracks which are subdivided into**
- Periods
  - Zones
  - Sectors
  - Groups
- 392. Which of the following is true for machine language**
- Repeated execution of program segments
  - Depicting flow of data in a system
  - A sequence of instructions which, when followed properly, solves a problem
  - The language which communicates with the computer using only the binary digits 1 and 0

- 393. The LRU algorithm**
- Pages out pages that have been used recently
  - Pages out that have not been used recently
  - Pages out pages that have been least used recently
  - Pages out the first page in a given area
- 394. A linker**
- Creates a load module
  - Is not necessary with variable partitions
  - Must be run after the loader
  - Is not needed with a good compiler
- 395. Global to locks**
- Synchronize access to local resources
  - Synchronize access to global resources
  - Are used to avoid local locks
  - Prevent access to global resources
- 396. The dynamic allocation of storage areas with VSAM files is accomplished by**
- Hashing
  - Overflow areas
  - Control splits
  - Relative recording
- 397. Which of the following refers to the associative memory?**
- The address of the data is generated by the CPU
  - The address of the data is supplied by the users
  - There is no need for an address i.e. the data is used as an address
  - The data are accessed sequentially
- 398. Link encryption**
- Is more secure than end-to-end encryption
  - Is less secure than end-to-end encryption
  - Cannot be used in a public network
  - Is used only to debug
- 399. Which of the following is characteristic of an operating system?**
- Resource management
  - Memory management
  - Error recovery
  - All of the above
- 400. Files can have**
- Read access
  - Write access
  - Copy access
  - All the above
- 401. A file sometimes called a**
- Collection of input data
  - Temporary place to store data
  - Data set
  - Program
- 402. In MS-DOS, re-locatable object files and load modules have extensions**
- .OBJ and .COM or .EXE respectively
  - .COM and .OBJ, respectively
  - .EXE and .OBJ, respectively
  - .DAS and .EXE, respectively
- 403. Resolution of externally defined symbols is performed by**
- Linker
  - Compiler
  - Loader
  - Assembler
- 404. In which of the following page replacement policies, belady's anomaly occurs?**
- FIFO
  - LFU
  - LRU
  - NRU
- 405. Four necessary conditions for deadlock to exist are: mutual exclusion, no-preemption, circular wait and**
- Hold and wait
  - Race around condition
  - Deadlock avoidance
  - Buffer overflow
- 406. A system program that sets up an executable program in main memory ready for execution is**
- Assembler
  - Loader
  - Linker
  - Compiler
- 407. The principle of locality of reference justifies the use of**
- Re-enterable
  - Virtual memory
  - None reusable
  - Cache memory
- 408. The details of all external symbols and relocation formation (relocation list or map) is provided to linker by**
- Macro processor
  - Loader
  - Translator
  - Editor
- 409. Scheduling is**
- Allowing jobs to use the processor
  - Unrelated to performance consideration
  - Not required in uniprocessor system
  - The same regardless of the purpose of the system
- 410. Real-time systems are**
- Primarily used on mainframe computers
  - Used for monitoring events as they occur
  - Used for programs analysis
  - Used for real-time interactive users
- 411. Access time is the highest in the case of**
- Floppy disk
  - Swapping devices
  - Cache
  - Magnetic disk
- 412. The most common systems security method is**
- Passwords
  - Firewall
  - Encryption
  - All the above
- 413. Poor response times are caused by**
- Processor busy
  - High paging rates
  - High I/O rate
  - Any of the above
- 414. Which of the following is a block device**
- Mouse
  - Terminals
  - Printer
  - Disk
- 415. Which of the following statements is false?**
- The technique of storage compaction involves moving all occupied areas of storage to one end or other of main storage
  - Compaction does not involve relocation of programs
  - Compaction is also known as garbage collection
  - The system must stop everything while it performs to compaction
- 416. Thrashing can be avoided if**
- The pages, belonging to the working set of the programs, are in main memory
  - The speed of CPU is increased
  - The speed of I/O processor is increased
  - All of the above
- 417. Operating system**
- Links a program with the subroutines if references
  - Provides a layered, user-friendly interface
  - Enables the programmer to draw a flowchart
  - All of the above

- 418. A task in a blocked state**
- Is executable
  - Is running
  - Must still be placed in the run queues
  - Is waiting for some temporarily unavailable
- 419. Backups should be done**
- Daily for most installations
  - Weekly for most installations
  - As several image copies, followed by an incremental
  - As several incremental, followed by an image copy
- 420. Which of the following statement is true?**
- The LRU algorithm pages of pages that have been used recently
  - Thrashing is a natural consequence of virtual memory systems
  - Seek analysis is used for analyzing control-unit busy problems
  - All of the above
- 421. A flowchart that uses predefined symbols to describe data flow in a system is known as**
- Program flowchart
  - Data flow diagram
  - System flowchart
  - All of the above
- 422. Which of the following is true about pseudo code?**
- A machine language
  - A high-level language
  - An assembly language
  - None of the above
- 423. A program that converts a high-level language program to a set of instruction that can run on a computer is called a**
- Compiler
  - Editor
  - Debugger
  - All the above

- 424. Which of the following statements is not true about the FORTRAN language?**
- FORTRAN is a high level language
  - A FORTRAN program, written for the IBM-PC, is totally different from a FORTRAN program written for execution on the SUN machine
  - FORTRAN is extensively used to write programs for performing scientific computations
  - All of the above
- 425. The initial value of the semaphore that allows only one of the many processes to enter their critical sections is**
- 8
  - 1
  - 16
  - 0
- 426. The principles of structured programming forbid the use of**
- WHILE-DO
  - IF-THEN-ELSE
  - GO TO
  - DO-WHILE
- 427. Which of the following, is necessary to work on a computer**
- Compiler
  - Assembly
  - Operating system
  - Interpreter of the above
- 428. Dividing a project into segments and smaller units in order to simplify the analysis, design and programming efforts is known as**
- Modular approach
  - Bottom-up approach
  - Top-down approach
  - Left-right approach
- 429. The errors that can be pointed out by the compiler are**
- Syntax errors
  - Logical errors
  - Semantic errors
  - Internal errors
- 430. The dispatcher**
- Actually schedules the tasks into the processor
  - Puts tasks in I/O wait
  - Is always small and simple
  - Never changes task priorities
- 431. The SJF algorithm executes first the job**
- That last entered the queue
  - The first entered the queue
  - That has been in the queue the longest
  - With the least processor needs
- 432. Semaphores**
- Synchronize critical resources to prevent deadlock
  - Synchronize critical resources to prevent contention
  - Are used to do I/O
  - Are used for memory management
- 433. Fragmentation of the file system**
- Occurs only if the file system is used improperly
  - Can always be prevented
  - Can be temporarily removed by compaction
  - Is a characteristic of all file systems
- 434. The command interpreter**
- Is usually the primary user interface
  - Requires fixed format commands
  - Is menu driven
  - Is quite different from the SCL interpreter
- 435. A translator is best described as**
- An application software
  - A hardware component
  - A system software
  - All of the above
- 436. The part of machine level instruction, which tells the central processor what has to be done, is**
- Operation code
  - Locator
  - Address
  - Flip-flop
- 437. Which of the following instruction steps, would be written within the diamond shaped box of a flowchart?**
- S = B-C
  - PRINT A
  - IS A < 10
  - DATA X.4.Z
- 438. Block caches or buffer caches are used**
- To improve disk performance
  - To handle interrupts
  - To increase the capacity of the main memory
  - To speed up main memory read operation
- 439. To avoid the race condition, the number of processes that may be simultaneously inside their critical section is**
- 8
  - 1
  - 16
  - 0
- 440. What is the initial value of the semaphore to allow only one of the many processes to enter their critical section?**
- 8
  - 1
  - 16
  - 0
- 441. Which technique stores a program on disk and then transfers the program into main storage as and when they are needed, is known as**
- Spooling
  - Thrashing
  - Swapping
  - All the above

442. Which of the following is not true about the description of a decision table?

- A. A decision table is easy to modify
- B. A decision table is directly understood by the computer
- C. A decision table is easy to understand
- D. All of the above

443. The memory allocation scheme subject to 'external' fragmentation is

- A. Segmentation
- B. Pure demand paging
- C. Swapping
- D. Multiple contiguous fixed partitions

444. The advantage of a command processor running only built-in commands is:

- A. Flexibility to the users in running lists of commands by simply collecting them in named batch command files
- B. The command set being common across different hardware configurations
- C. Users can create system programs and run them as commands
- D. The processing is much faster than would otherwise be the case when user defined commands are used

445. Which of the following is not true about the memory management?

- A. Virtual memory is used only in multiuser systems
- B. Segmentation suffers from external fragmentation
- C. Paging suffers from internal fragmentation
- D. Segmented memory can be paged

446. In which way(s) a macro processor can be implemented:

- A. Independent two-pass processor
- B. Independent one-pass processor
- C. Processor incorporated into pass, into a standard two-pass assembler
- D. All of the above

447. The disadvantage of "Compile and GO" loading scheme is (are)

- A. A portion of memory is wasted because the core occupied by the assembler is unavailable to the object program.
- B. It is necessary to retranslate the user's program deck every time it is run
- C. It is very difficult to handle multiple segments, especially if the source programs are in different languages, and to produce orderly modular programs
- D. All of the above

448. In analyzing the compilation of PL/I program, the term "syntax analysis" is associated with

- A. Recognition of basic syntactic constructs through reductions
- B. Recognition of basic elements and creation of uniform symbols
- C. Creation of more optional matrix
- D. Use of macro processor to produce more optimal assembly code

449. Uniform Symbols Table

- A. Contains all constants in the program
- B. A permanent table of decision rules in the form of patterns for matching with the uniform symbol table to discover syntactic structure.
- C. Consists of a full or partial list of the tokens as they appear in the program. Created by Lexical analysis and used for syntax analysis and interpretation
- D. A permanent table which lists all key words and special symbols of the language in symbolic form

450. The function(s) of scheduler is (are)

- A. It selects which ready process is to be run next
- B. It specifies the time slice
- C. It is waiting for an event to occur before continuing execution
- D. Both A and B

451. The function(s) of file system is (are):

- A. To provide complete file naming freedom to the users and to the users and to permit controlled sharing of files
- B. To provide for long and short term storage of files with appropriate economic tradeoffs
- C. To provide security against loss of information due to system failure
- D. All of the above

452. Moving process from main memory to disk is called

- A. Scheduling
- B. Swapping
- C. Caching
- D. Spooling

453. In order to allow only one process to enter its critical section, binary semaphore are initialized to

- A. 0
- B. 1
- C. 2
- D. 3

454. The state transition initiated by the user process itself in an operating system is

- A. Block
- B. Wake up
- C. Dispatch
- D. Timer run out

455. Which of the following terms refers to the degree to which data in a database system are accurate and correct?

- A. Data security
- B. Data independence
- C. Data validity
- D. Data integrity

456. The total time to prepare a disk drive mechanism for a block of data to be read from it is

- A. Latency
- B. Latency plus transmission time
- C. Latency plus seek time
- D. Latency plus seek time plus transmission time

457. The paging rate

- A. Should never be greater than 100 per second
- B. Is greater for large programs
- C. Is the number of I/O interrupts each second
- D. Increases as the number of page faults increase

458. Thrashing

- A. Is a natural consequence of virtual memory systems
- B. Can always be avoided by swapping
- C. Always occurs on large computers
- D. Can be caused by poor paging algorithms

459. The computational technique used to compute the disk storage address of individual records is called:

- A. Bubble memory
- B. Dynamic reallocation
- C. Key fielding
- D. Hashing

460. Capacity planning

- A. Requires detailed system performance information
- B. Is independent of the operating system
- C. Does not depend on the monitoring tools available
- D. Is not needed in small installations

461. In a multiprogramming system, a set of processes is deadlocked if each process in the set is waiting for an event to occur that can be initiated only by another process in the set. Which of the following is not one of the four conditions that are necessary for deadlock to occur?
- Non-preemption
  - Partial assignment of resources
  - Process suspension
  - Circular wait
462. Belady anomaly occurs in
- Optimal replacement
  - LRU
  - FIFO
  - Both in FIFO and LRU
463. The CPU, after receiving an interrupt from an I/O device
- Holds for a predetermined time
  - Hands over control of address bus and data bus to the interrupting device
  - Branches off to the interrupt service routine immediately
  - Branches off to the interrupt service routine after completion of the current instruction
464. Which of the following is not a characteristic of a daisy chaining priority control scheme?
- Priority is programmable
  - It is relatively easy to add more devices to the chain
  - The failure of one device may affect other devices on the chain
  - The number of control lines is independent of the number of devices on the chain
465. An example of system development program is
- Operating system
  - Data-base management systems
  - Performance monitors
  - Language translators
466. Which of the following is not a part of the operating system?
- Supervisor
  - Job-control program
  - Performance monitor
  - Input/output control program
467. If a special forms are needed for printing the output, the programmer specifies these through
- JCL
  - Utility programs
  - IPL
  - Load modules
468. Which of the following is not an advantage of multiprogramming?
- Increased throughput
  - Shorter response time
  - Decreased operating system overhead
  - Ability to assign priorities to jobs
469. The problem of thrashing is affected significantly by
- Program structure
  - Primary-storage size
  - Program size
  - None of the above
470. Logical extension of multiprogramming of operating system is
- Time sharing
  - Single programming
  - Multi-tasking
  - Both A and B
471. Under multiprogramming, turnaround time for short jobs is usually..... And that for long jobs is slightly.....
- Lengthened; shortened
  - Shortened; shortened
  - Shortened; lengthened
  - Shortened; unchanged
472. Remote computing service involves the use of time-sharing and.....
- Multiprocessing
  - Batch processing
  - Interactive processing
  - Real-time processing
473. Under which circumstances the scheduling scheme is non preemptive:
- When a process switches from running to waiting state, when a process terminates
  - When a process switches from waiting to the ready state
  - When a process switches from waiting to the ready state
  - Both (A) and (B)
474. Under which circumstances the scheduling scheme is preemptive:
- When a process switches from running to waiting state
  - When a process switching from running to the ready state
  - When a process switching from waiting to the ready state
  - Both (B) and (C)
475. ....gives control of the CPU to the process selected by the short term scheduler.
- Long term scheduler
  - Dispatcher
  - Medium term scheduler
  - None of the above
476. Which of the following are the functions of the dispatcher?
- Swapping
  - Jumping to the proper location in the user program to restart that program
  - Scheduling
  - All of the above
477. Which of the following are CPU scheduling criteria?
- CPU utilization
  - Dispatcher latency
  - Waiting time
  - Both (A) and (B)
478. Which of the following is true for the algorithms for allocating regions of contiguous memory?
- First-fit
  - Best-fit
  - Next-fit
  - All of the above
479. The first-fit algorithm for allocating regions of contiguous memory does.....
- Scan memory region list from start for first fit
  - Scan memory region list from point of last allocation to next
  - Tends to leave small unusable regions, and slower due to requirement of search the entire list
  - There is no such algorithm
480. The best-fit algorithm for allocating regions of contiguous memory does.....
- Scan memory regions from start for first fit
  - Pick the closest free regions in the entire list
  - There is no such algorithm
  - Find the worst fit in the entire list

481. Which of the following are scheduling algorithms?  
 A. First come first serve  
 B. Priority scheduling  
 C. Shortest job first  
 D. All of the above
482. Routine is not loaded until it is called. All routines are kept on disk in a reloadable load format. The main program is loaded into memory & is executed. This type of loading is called \_\_\_\_\_.  
 A. Static loading  
 B. Dynamic linking  
 C. Dynamic loading  
 D. Overlays
483. Which of the following is crucial time while accessing data on the disk?  
 A. Seek time  
 B. Transmission time  
 C. Rotational time  
 D. Waiting time
484. The host repeatedly checks if the controller is busy until it is not. It is in a loop that status register's busy bit becomes clear. This is called \_\_\_\_\_ and a mechanism for the hardware controller to notify the CPU that it is ready is called \_\_\_\_\_.  
 A. Interrupt and Polling  
 B. Polling and Interrupt  
 C. Polling and Spooling  
 D. Deadlock and Starvation
485. Unix Operating System is an \_\_\_\_\_.  
 A. Time Sharing Operating System  
 B. Multi-tasking Operating System  
 C. Multi-User Operating Systems  
 D. All the Above
486. Which of the following allocation scheme suffers from external fragmentation?  
 A. Segmentation  
 B. Swapping  
 C. Pure demand paging  
 D. Paging
487. Information about a process is maintained in a \_\_\_\_\_.  
 A. Stack  
 B. Process Control Block  
 C. Translation Look aside Buffer  
 D. Program Control Block
488. Distributed OS works on the principle.  
 A. File Foundation  
 B. Multi system image  
 C. Single system images  
 D. Networking image
489. The problem of fragmentation arises in \_\_\_\_\_.  
 A. Static storage allocation  
 B. Stack allocation storage  
 C. Stack allocation with dynamic binding  
 D. Heap allocation
490. Which file system does DOS typically use?  
 A. FAT16      B. NTFS  
 C. FAT32      D. WNFS
491. The program is known as \_\_\_\_\_ which interacts with the inner part of called kernel.  
 A. Compiler      B. Protocol  
 C. Device Driver      D. Shell
492. The time taken by the disk arm to locate the specific address of a sector for getting information is called \_\_\_\_\_.  
 A. Rotational Latency  
 B. Search Time  
 C. Seek Time  
 D. Response Time
493. Which file system does Windows 95 typically use?  
 A. FAT16      B. NTFS  
 C. FAT32      D. LMFS Slick
494. Identify the odd thing in the services of operating system.  
 A. Accounting  
 B. Error detection and correction  
 C. Protections  
 D. Dead lock handling
495. Cryptography technique is used in \_\_\_\_\_.  
 A. Polling  
 B. Protection  
 C. Job Scheduling  
 D. File Management
496. Which of the following is not advantage of multiprogramming?  
 A. Increased throughput  
 B. Shorter response times  
 C. Decreased operating system overhead  
 D. Ability to assign priorities to jobs
497. In \_\_\_\_\_ OS, the response time is very critical.  
 A. Multitasking      B. Online  
 C. Batch      D. Real-time
498. An optimal scheduling algorithm in terms of minimizing the average waiting time of a given set of processes is \_\_\_\_\_.  
 A. FCFS scheduling algorithm  
 B. Round robin scheduling algorithm  
 C. Shortest job - first scheduling algorithm  
 D. None of the above
499. Real time systems are \_\_\_\_\_.  
 A. Primarily used on mainframe computers  
 B. Used for monitoring events as they occur  
 C. Used for program development  
 D. Used for real time interactive users
500. Which technique was introduced because a single job could not keep both the CPU and the I/O devices busy?  
 A. Time-sharing  
 B. Preemptive scheduling  
 C. Spooling  
 D. Multiprogramming
501. Inter process communication can be done through \_\_\_\_\_.  
 A. Mail      B. System calls  
 C. Messages      D. Traps
502. In Priority Scheduling a priority number (integer) is associated with each process. The CPU is allocated to the process with the highest priority (smallest integer = highest priority). The problem of, Starvation? Low priority processes may never execute is resolved by \_\_\_\_\_.  
 A. Terminating the process.  
 B. Mutual Exclusion  
 C. Aging  
 D. Semaphore
503. CPU performance is measured through \_\_\_\_\_.  
 A. Throughput  
 B. Flaps  
 C. MHz  
 D. None of the above
504. PCB =  
 A. Program Control Block  
 B. Process Communication Block  
 C. Process Control Block  
 D. None of the above
505. Software is a program that directs the overall operation of the computer facilitates its use and interacts with the user. What are the different types of this software?  
 A. Operating system  
 B. Utilities  
 C. Language Compiler  
 D. All of the above

506. A \_\_\_\_\_ is software that manages the time of a microprocessor to ensure that all time critical events are processed as efficiently as possible. This software allows the system activities to be divided into multiple independent elements called tasks.

- A. Kernel
- B. Processor
- C. Shells
- D. Device Driver

507. The primary job of the operating system of a computer is to \_\_\_\_\_.

- A. Command Resources
- B. Provide Utilities
- C. Manage Resources
- D. Be user friendly

508. With the round robin CPU scheduling in a time-shared system \_\_\_\_\_.  
A. Using very large time slice degenerates in to first come first served algorithm

- B. Using extremely small time slices improve performance
- C. Using extremely small time slices degenerate in to last in first out algorithm
- D. Using medium sized time slices leads to shortest request time first algorithm

509. Which of the following is a criterion to evaluate a scheduling algorithm?

- A. CPU Utilization: Keep CPU utilization as high as possible.
- B. Throughput: number of processes completed per unit time.
- C. Waiting Time: Amount of time spent ready to run but not running.
- D. All of the above

510. Which of the following is contained in Process Control Block (PCB)?

- A. Process Number
- B. Memory Limits
- C. List of Open files
- D. All of the Above

511. Super computers typically employ \_\_\_\_\_.  
A. Real time Operating system  
B. Desktop OS  
C. Multiprocessors OS  
D. None of the above

512. Round robin scheduling is essentially \_\_\_\_\_ the preemptive version of \_\_\_\_\_.

- A. FIFO
- B. Shortest remaining
- C. Shortest job first
- D. Longest time first

513. A page fault occurs

- A. When the page is not in the memory
- B. When the page is in the memory state
- C. When the process enters the blocked state
- D. When the process is in the ready state

514. Which of the following will determine your choice of systems software for your computer?

- A. Is the applications software you want to use compatible with it?
- B. Is it expensive?
- C. Is it compatible with your hardware?
- D. Both A and C

515. Let S and Q be two semaphores initialized to 1, where P0 and P1 processes the following statements wait(S);wait(Q);  
signal(S);signal(Q) and wait(Q);  
wait(S);---;signal(Q);signal(S); respectively. The above situation depicts a \_\_\_\_\_.

- A. Semaphore
- B. Signal
- C. Deadlock
- D. Interrupt

516. What is a shell?

- A. It is a hardware component
- B. It is a part in compiler
- C. It is a command interpreter
- D. It is a tool in CPU scheduling

517. Routine is not loaded until it is called. All routines are kept on disk in a relocatable load format. The main program is loaded into memory & is executed. This type of loading is called \_\_\_\_\_.

- A. Static loading
- B. Dynamic linking
- C. Dynamic loading
- D. Overlays

518. In the blocked state

- A. The processes waiting for I/O are found
- B. The process which is running is found
- C. The processes waiting for the processor are found
- D. None of the above

519. What is the memory from 1K - 640K called?

- A. Extended Memory
- B. Low Memory
- C. Normal Memory
- D. Conventional Memory

520. The process related to process control, file management, device management, information about system and communication that is requested by any higher level language can be performed by \_\_\_\_\_.

- A. Editors
- B. System Call
- C. Compilers
- D. Caching

521. If the Disk head is located initially at 32, find the number of disk moves required with FCFS if the disk queue of I/O blocks requests are 98, 37, 14, 124, 65, 67.

- A. 310
- B. 315
- C. 324
- D. 321

522. Multiprogramming systems \_\_\_\_\_.  
A. Are easier to develop than single programming systems  
B. Execute each job faster  
C. Execute more jobs in the same time  
D. Are used only on large main frame computers

523. Which is not the state of the process?  
A. Blocked      B. Ready  
C. Running      D. Privileged

524. The solution to Critical Section Problem is: Mutual Exclusion, Progress and Bounded Waiting.

- A. The statement is false
- B. The statement is contradictory.
- C. The statement is true.
- D. None of the above

525. The problem of thrashing is effected scientifically by \_\_\_\_\_.

- A. Program structure
- B. Primary storage size
- C. Program size
- D. None of the above

526. The state of a process after it encounters an I/O instruction is \_\_\_\_\_.

- A. Ready
- B. Idle
- C. Blocked/Waiting
- D. Running

527. The number of processes completed per unit time is known as \_\_\_\_\_.

- A. Output
- B. Efficiency
- C. Throughput
- D. Capacity

528. \_\_\_\_\_ is the situation in which a process is waiting on another process, which is also waiting on another process ... which is waiting on the first process. None of the processes involved in this circular wait are making progress.

- A. Deadlock
- B. Dormant
- C. Starvation
- D. None of the above

529. Which technique was introduced because a single job could not keep both the CPU and the I/O devices busy?

- A. Time-sharing
- B. Preemptive scheduling
- C. Spooling
- D. Multiprogramming

530. The mechanism that bring a page into memory only when it is needed is called \_\_\_\_\_.

- A. Segmentation
- B. Demand Paging
- C. Fragmentation
- D. Page Replacement

531. Switching the CPU to another Process requires saving state of the old process and loading new process state is called as \_\_\_\_\_.

- A. Process Blocking
- B. Time Sharing
- C. Context Switch
- D. None of the above

532. Which directory implementation is used in most Operating System?

- A. Single level directory structure
- B. Tree directory structure
- C. Two level directory structure
- D. Acyclic directory structures

533. The Banker's algorithm is used

- A. To prevent deadlock in operating systems
- B. To detect deadlock in operating systems
- C. To rectify a deadlocked state
- D. None of the above

534. A thread

- A. Is a lightweight process where context switching is low
- B. Is a lightweight process where context switching is high
- C. Is used to speed up paging
- D. None of the above

535. \_\_\_\_\_ is a high level abstraction over Semaphore.

- A. Shared memory
- B. Monitor
- C. Message passing
- D. Mutual exclusion

536. A tree structured file directory system Tongue

- A. Allows easy storage and retrieval of file names
- B. Is a much debated unnecessary feature
- C. Is not essential when we have millions of files
- D. None of the above

537. Translator for low level programming language were termed as

- A. Assembler
- B. Linker
- C. Compiler
- D. Loader

538. Analysis which determines the meaning of a statement once its grammatical structure becomes known is termed as

- A. Semantic analysis
- B. Regular analysis
- C. Syntax analysis
- D. General analysis

539. Load address for the first word of the program is called

- A. Linker address origin
- B. Phase library
- C. Load address origin
- D. Absolute library

540. Symbolic names can be associated with

- A. Information
- B. Operand
- C. Data or instruction
- D. Mnemonic operation

541. The translator which perform macro expansion is called a

- A. Macro processor
- B. Micro pre-processor
- C. Macro pre-processor
- D. Assembler

542. Shell is the exclusive feature of

- A. UNIX
- B. System software
- C. DOS
- D. Application software

543. A program in execution is called:

- A. Process
- B. Procedure
- C. Instruction
- D. Function

544. Interval between the time of submission and completion of the job is called:

- A. Waiting time
- B. Throughput
- C. Turnaround time
- D. Response time

545. A scheduler which selects processes from secondary storage device is called

- A. Short term scheduler.
- B. Medium term scheduler.
- C. Long term scheduler.
- D. Process scheduler.

546. The scheduling in which CPU is allocated to the process with least CPU-burst time is called

- A. Priority Scheduling
- B. Round Robin Scheduling
- C. Shortest job first Scheduling
- D. Multilevel Queue Scheduling

547. The term 'page traffic' describes

- A. Number of pages in memory at a given instant.
- B. Number of pages required to be brought in at a given page request.
- C. The movement of pages in and out of memory.
- D. Number of pages of executing programs loaded in memory.

548. The "turn-around" time of a user job is the

- A. Time since its submission to the time its results become available.
- B. Time duration for which the CPU is allotted to the job.
- C. Total time taken to execute the job.
- D. Time taken for the job to move from assembly phase to completion phase.

549. Which of the following can be used as a criterion for classification of data structures used in language processing

- A. Nature of a data structure
- B. Lifetime of a data structure
- C. Purpose of a data structure
- D. All of the above.

550. Memory utilization factor shall be computed as follows

- A. Memory in use/allocated memory.
- B. Memory in use/total memory connected.
- C. Memory allocated/free existing memory.
- D. Memory committed/total memory available.

551. Program 'preemption' is

- A. Forced de allocation of the CPU from a program which is executing on the CPU.
- B. Release of CPU by the program after completing its task.
- C. Forced allotment of CPU by a program to itself.
- D. A program terminating itself due to detection of an error.

- 552. An assembler is**
- Programming language dependent.
  - Machine dependant.
  - Syntax dependant.
  - Data dependant.
- 553. Which of the following is not a fundamental process state**
- Ready
  - Executing
  - Terminated
  - Blocked
- 554. LRU page replacement policy is**
- Last Replaced Unit.
  - Least Recently Used.
  - Last Restored Unit.
  - Least Required Unit.
- 555. Which of the following is true?**
- Block cipher technique is an encryption technique.
  - Stream cipher technique is an encryption technique.
  - Both (A) and (B).
  - Neither of (A) and (B).
- 556. Which of the following approaches do not require knowledge of the system state?**
- Deadlock detection.
  - Deadlock avoidance.
  - Deadlock prevention.
  - None of the above
- 557. Program generation activity aims at**
- Automatic generation of program
  - Organize execution of a program written in PL
  - Skips generation of program
  - Speed generation of program
- 558. Which amongst the following is not an advantage of Distributed systems?**
- Reliability
  - Resource sharing
  - Incremental growth
  - None of the above

- 559. An imperative statement**
- Reserves areas of memory and associates names with them during execution of assembled program
  - Indicates an action to be performed during execution of assembled program
  - Indicates an action to be performed during optimization
  - None of the above
- 560. Which of the following loader is executed when a system is turned on or restart**
- Boot loader
  - Bootstrap loader
  - Compile and Go loader
  - Relating loader
- 561. Poor response time is usually caused by**
- Process busy
  - High paging rate
  - High I/O rates
  - Any of the above
- 544. "Throughput" of a system is**
- Number of programs processed by it per unit time
  - Number of times the program is invoked by the system
  - Number of requests made to a program by the system
  - None of the above
- 562. The "blocking factor" of a file is**
- The number of blocks accessible to a file
  - The number of blocks allocated to a file
  - The number of logical records in one physical record
  - None of the above
- 563. Which of these is a component of a process precedence sequence?**
- Process name
  - Concurrency operator
  - Sequence operator ";"
  - All of the above
- 564. Which amongst the following is valid syntax of the Fork and Join Primitive?**
- Fork <label>
  - For <var>
  - Fork <label>
  - Fork <var>
- 565. Nested Macro calls are expanded using the**
- FIFO rule (First in first out)
  - FILO rule (First in last out)
  - LIFO (Last in First out)
  - None of the above
- 566. A parser which is a variant of top-down parsing without backtracking is**
- Recursive Descend.
  - LL(1) parser
  - Operator Precedence.
  - LALR Parser.
- 567. The expansion of nested macro calls follows**
- FIFO rule.
  - LILO rule.
  - LIFO rule.
  - Priority rule.
- 568. In a two-pass assembler, the task of the Pass II is to**
- Separate the symbol, mnemonic opcode and operand fields.
  - Build the symbol table.
  - Construct intermediate code.
  - Synthesize the target program.
- 569. A linker program**
- Places the program in the memory for the purpose of execution.
  - Relocates the program to execute from the specific memory area allocated to it.
  - Links the program with other programs needed for its execution.
  - Interfaces the program with the entities generating its input data.
- 570. Which scheduling policy is most suitable for a time-shared operating system**
- Shortest-job First.
  - Round-Robin.
  - Elevator.
  - First-Come-First-Serve
- 571. A critical section is a program segment**
- Which should run in a certain specified amount of time?
  - Which avoids deadlocks.
  - Where shared resources are accessed.
  - Which must be enclosed by a pair of semaphore operations, P and V.
- 572. An operating system contains 3 user processes each requiring 2 units of resource R. The minimum number of units of R such that no deadlocks will ever arise is**
- 4
  - 3
  - 5
  - 6
- 573. Locality of reference implies that the page reference being made by a process**
- Will always be to the page used in the previous page reference.
  - Is likely to be the one of the pages used in the last few page references
  - Will always be to one of the pages existing in memory.
  - Will always lead to a page fault.

574. This of these is not a part of Synthesis phase
- Obtain machine code corresponding to the mnemonic from the Mnemonics table
  - Obtain address of a memory operand from the symbol table
  - Perform LC processing
  - Synthesize a machine instruction or the machine form of a constant
575. The syntax of the assembler directive EQU is
- EQU <address space>
  - <symbol>EQU
  - <symbol>EQU<address space>
  - None of the above
576. The following features are needed to implement top down parsing
- Source string marker
  - Matching and Backtracking
  - Prediction making mechanism
  - All of the above
577. A macro definition consists of
- Macro prototype statement
  - Macro pre-processor statements
  - One or more model statements
  - All of the above
578. The main reason to encrypt a file is to \_\_\_\_\_.
- Reduce its size
  - Prepare it for backup
  - Secure it for transmission
  - Include it in the start-up sequence
579. This of the following is not a key piece of information, stored in single page table entry, assuming pure paging and virtual memory
- Frame number
  - A bit indicating whether the page is in physical memory or on the disk
  - A reference for the disk block that stores the page
  - None of the above

580. A UNIX device driver is
- Structured into two halves called half and bottom half
  - Three equal partitions
  - Unstructured
  - None of the above
581. The following is not a layer of management module
- PIOCS (Physical Input Output Control System)
  - LIOCS (Logical Input Output Control System)
  - FS (File System)
  - MCS (Management Control System)
582. Which amongst the following is not valid page replacement policy?
- LRU policy (Least Recently Used)
  - FIFO policy (First in first out)
  - RU policy (Recurrently used)
  - Optimal page replacement policy
583. Consider a program with a linked origin of 5000. Let the memory area allocated to it have the start address of 70000. Which amongst the following will be the value to be loaded in relocation register?
- 20000
  - 50000
  - 70000
  - None of the above
584. An assembly language is a
- Low level programming language
  - Middle level programming language
  - High level programming language
  - Internet based programming language
585. TII stands for
- Table of incomplete instructions
  - Table of information instructions
  - Translation of instructions
  - Translation of information instruction
586. An analysis, which determines the syntactic structure of the source statement, is called
- Semantic analysis
  - Syntax analysis
  - Process analysis
  - Function analysis
587. Action implementing instruction's meaning are actually carried out by
- Instruction fetch
  - Instruction execution
  - Instruction decode
  - Instruction program
588. The field that contains a segment index or an internal index is called
- Target datum
  - Segment field
  - Target offset
  - Fix data
589. A program in execution is called
- Process
  - CPU
  - Function
  - Memory
590. Jobs which are admitted to the system for processing is called
- Long-term scheduling
  - Medium-term scheduling
  - Short-term scheduling
  - Queting
591. A set of techniques that allow to execute a program which is not entirely in memory is called
- Demand paging
  - Auxiliary memory
  - Virtual memory
  - Secondary memory
592. SSTF stands for
- Shortest-Seek-time-first scheduling
  - Simple-seek-time-first
  - Small - small-time-first
  - Small-simple-time-first scheduling
593. Before proceeding with its execution, each process must acquire all the resources it needs is called
- Hold and wait
  - Circular wait
  - No pre-emption
  - Starvation
594. Relocation bits used by relocating loader are specified by
- Relocating loader itself
  - Macro processor
  - Assembler or Translator
  - Both (A) and (B)
595. Resolution of externally defined symbols is performed by
- Linker
  - Compiler
  - Loader
  - Editor
596. Re-locatable programs
- Cannot be used with fixed partitions
  - Can be loaded almost anywhere in memory
  - Do not need a linker
  - Can be loaded only at one specific location
597. Authentication is fundamental building block in most computers
- Security Context
  - Execution Context
  - Control Context
  - Performance Context
598. Page fault frequency in an operating system is reduced when the
- Processes tend to the I/O-bound
  - Size of pages is reduced
  - Processes tend to be CPU-bound
  - Locality of reference is applicable to the process

- 599.** Which of the following are language processors?  
 A. Assembler  
 B. Interpreter  
 C. Compiler  
 D. All of the above
- 600.** Virtual memory can be implemented with  
 A. Segmentation  
 B. None  
 C. Paging  
 D. All of the above
- 601.** Recognition of basic syntactic constructs through reductions, this task is performed by  
 A. Lexical analysis  
 B. Semantic analysis  
 C. Syntax analysis  
 D. Structure analysis
- 602.** A grammar for a programming language is a formal description of  
 A. Syntax      B. Structure  
 C. Semantics    D. Code
- 603.** \_\_\_\_\_ is a technique of temporarily removing inactive programs from the memory of computer system  
 A. Swapping    B. Semaphore  
 C. Spooling     D. Scheduler
- 604.** \_\_\_\_\_ is a technique of improving the priority of process waiting in Queue for CPU allocation  
 A. Starvation   B. Revocation  
 C. Ageing       D. Relocation
- 605.** \_\_\_\_\_ is the time required by a sector to reach below read/write head  
 A. Seek Time   B. Access time  
 C. Latency Time D. None
- 606.** Which of the following is general phase structured grammar?  
 A. Context - Sensitive  
 B. Context - Free  
 C. Regular  
 D. None of the above
- 607.** File record length  
 A. Should always be fixed  
 B. Should always be variable  
 C. Depends upon the size of file  
 D. Should be chosen to match the characteristics.
- 608.** The process is.....  
 A. An instance of a program execution  
 B. A program only  
 C. Processor state  
 D. None of the above
- 609.** A program is passive while a process is...  
 A. Inactive  
 B. Spontaneous  
 C. Active  
 D. None of the above
- 610.** A process is created and is initially put in the ...  
 A. Ready queue  
 B. Device output  
 C. Any of the above  
 D. None of the above
- 611.** Exit ( ) system calls results in...  
 A. Forced termination  
 B. Normal termination  
 C. Abnormal termination  
 D. None of the above
- 612.** A thread is a....  
 A. Task  
 B. Process  
 C. Program  
 D. Light weight process
- 613.** Generally, we have user level threads and.....  
 A. Programmer level thread  
 B. Kernel level thread  
 C. Program level thread  
 D. None of the above
- 614.** IPCs can be done through...  
 A. Mails      B. Message  
 C. System calls D. Traps
- 615.** RR scheduling is a preemptive version of...  
 A. FIFO  
 B. SJF  
 C. MLQ  
 D. None of the above
- 616.** A scheduling where in the jobs are allowed to move between the queues...  
 A. Multilevel queue scheduling  
 B. Multilevel feedback scheduling  
 C. RR scheduling  
 D. None of the above
- 617.** In RR Scheduling, a ready queue is treated as:  
 A. Circular queue  
 B. Doubly linked list  
 C. Stack  
 D. None of the above
- 618.** FIFO scheduling is...  
 A. Preemptive  
 B. Non preemptive  
 C. Deadline scheduling  
 D. None of the above
- 619.** The indefinite blocking of low priority processes by a high priority processes is known as...  
 A. Starvation  
 B. Deadlock  
 C. Aging  
 D. None of the above
- 620.** The technique of gradually increasing the priority of processes that wait in the system for long time is called.....  
 A. Aging  
 B. Throughput  
 C. FCFS  
 D. None of the above
- 621.** The main objective of scheduling is.....  
 A. CPU utilization  
 B. Increase the throughput  
 C. Both A and B  
 D. None of the above
- 622.** The total time elapsed from the time the job is submitted (or process is created) to the time the job (or process) is completed is called.....  
 A. Response time  
 B. Waiting time  
 C. Turnaround time  
 D. None of the above
- 623.** .....is defined as the average fraction of time during which CPU is busy, executing either user programs or system modules  
 A. Throughput  
 B. CPU utilization  
 C. Response time  
 D. Waiting time
- 624.** In.....scheduling, if once a process has been allocated CPU then the CPU cannot be taken away from that process.  
 A. Pre-emptive scheduling  
 B. Non-preemptive scheduling  
 C. Both A and C  
 D. None of the above

625. In....., the CPU can be taken away before the completion of the process.

- A. Pre-emptive scheduling
- B. Non-preemptive
- C. Both A and B
- D. None of the above

626. " If there are n-processes in a ready queue and the time quantum is 'q' time intervals, then each process gets ' $1/n$ ', of the CPU time in the chunks of at most 'q' units of time. Each process will have to wait for  $(n-1) \times q$  time unit until its next time quantum comes in" This principle is suitable for which one of the following:

- A. Round robin algorithm
- B. SJF
- C. FCFS
- D. None of the above

627. Process can be in one of following state:

- A. New, Ready
- B. Running
- C. Waiting blocked, terminate
- D. All of the above

628. Process is....

- A. Loosely coupled
- B. Tightly coupled
- C. Both A and B
- D. None of the above

629. Process is.....

- A. Light weight process
- B. Heavy weight process
- C. Tightly coupled
- D. None of the above

630. The high paging activity is called.....

- A. Segmentation
- B. Thrashing
- C. Demand Paging
- D. None of the above

631. The process of merging adjacent holes to form a single larger hole is called as.....

- A. Fragmentation
- B. Coalescing
- C. Swapping
- D. None of the above

632. The degree of multiprogramming is controlled by....

- A. CPU scheduler
- B. Context switching
- C. Long -term scheduler
- D. Medium term scheduler

633. Thrashing occurs....

- A. When excessive swapping takes place
- B. When you thrash your computer
- C. Whenever deadlock occurs
- D. When no swapping takes place

634. Boundary registers.....

- A. Are available in temporary program variables storage
- B. Are only necessary with fixed partitions
- C. Track the beginning and ending the program
- D. Track page boundaries

635. A scheduling algorithm is fair...

- A. If no process faces starvation
- B. If a process is starved, detect it and run it with high priority
- C. If it uses semaphores
- D. Only if a queue is used for scheduling

636. A critical region

- A. Is a piece of code which only one process executes at a time
- B. Is a region prone to deadlock
- C. Is a piece of code which only a finite number of processes executes
- D. Is found only in windows NT operating system

in one of the deadlock prevention methods, impose a total ordering of resource types, and require that each process requests resources in an increasing order of enumeration. This violates the \_\_\_\_\_ condition

deadlock  
Mutual exclusion

Hold and Wait  
Circular wait

No preemption  
Semaphore can be used for solving...

Wait and signal  
Synchronization

Priority  
hardware mechanism that enables a device to notify the CPU is called.....

Polling  
Interrupt

System call  
None of the above

begins at the root and follows a path down to the specified file

Relative path name  
Absolute path name

Standalone name  
All of the above

Process state is a part of  
Process control block

Node  
File allocation table

None of the above

Virtual memory is commonly implemented by...

Segmentation  
Swapping  
Demand paging  
None of the above

643. Paging .....

- A. Solves the memory fragmentation problem
- B. Allows modular programming
- C. Allows structured programming
- D. Avoids deadlock

644. Which of the following is a criterion to evaluate a scheduling algorithm?

- A. CPU Utilization: keep CPU utilization as high as possible
- B. Throughput: number of processes completed per unit time
- C. Waiting time: amount of time spent ready to run but not running
- D. All of the above

645. Which of the following is contained in Process Control Block (PCB)?

- A. Process number
- B. List of open files
- C. Memory limits
- D. All of the above

646. With the round robin CPU scheduling in a time-shared system.....

- A. Using very large time slice degenerates in to first come first served algorithm
- B. Using extremely small time slices improve performance
- C. Using extremely small time slices degenerate in to last in first out algorithm
- D. Using medium sized time slices leads to shortest request time first algorithm

**ANSWER SHEET**

|       |       |       |       |       |       |       |       |       |       |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1.C   | 2.C   | 3.C   | 4.B   | 5.C   | 6.B   | 7.B   | 8.A   | 9.A   | 10.D  |
| 11.D  | 12.D  | 13.A  | 14.C  | 15.C  | 16.B  | 17.C  | 18.D  | 19.B  | 20.C  |
| 21.D  | 22.C  | 23.D  | 24.D  | 25.B  | 26.A  | 27.B  | 28.B  | 29.D  | 30.C  |
| 31.B  | 32.A  | 33.C  | 34.C  | 35.B  | 36.A  | 37.D  | 38.D  | 39.C  | 40.B  |
| 41.C  | 42.D  | 43.B  | 44.D  | 45.D  | 46.D  | 47.C  | 48.D  | 49.D  | 50.C  |
| 51.C  | 52.C  | 53.B  | 54.B  | 55.A  | 56.A  | 57.A  | 58.C  | 59.C  | 60.B  |
| 61.B  | 62.D  | 63.C  | 64.D  | 65.A  | 66.C  | 67.B  | 68.B  | 69.B  | 70.C  |
| 71.C  | 72.D  | 73.B  | 74.D  | 75.C  | 76.B  | 77.B  | 78.C  | 79.A  | 80.C  |
| 81.D  | 82.A  | 83.A  | 84.B  | 85.A  | 86.C  | 87.B  | 88.B  | 89.B  | 90.B  |
| 91.A  | 92.C  | 93.D  | 94.D  | 95.D  | 96.A  | 97.B  | 98.B  | 99.A  | 100.D |
| 101.C | 102.B | 103.C | 104.D | 105.C | 106.C | 107.A | 108.A | 109.C | 110.C |
| 111.C | 112.D | 113.C | 114.D | 115.C | 116.B | 117.C | 118.C | 119.D | 120.B |
| 121.B | 122.C | 123.B | 124.B | 125.A | 126.D | 127.D | 128.D | 129.B | 130.C |
| 131.C | 132.A | 133.D | 134.B | 135.D | 136.D | 137.B | 138.C | 139.B | 140.A |
| 141.B | 142.B | 143.B | 144.B | 145.D | 146.C | 147.C | 148.D | 149.A | 150.B |
| 151.A | 152.A | 153.B | 154.D | 155.D | 156.B | 157.A | 158.D | 159.D | 160.C |
| 161.A | 162.C | 163.C | 164.A | 165.B | 166.C | 167.C | 168.B | 169.B | 170.B |
| 171.B | 172.A | 173.C | 174.A | 175.B | 176.C | 177.A | 178.B | 179.D | 180.C |
| 181.A | 182.B | 183.A | 184.D | 185.D | 186.C | 187.B | 188.D | 189.D | 190.D |
| 191.A | 192.B | 193.A | 194.B | 195.C | 196.B | 197.A | 198.D | 199.D | 200.D |
| 201.D | 202.D | 203.D | 204.D | 205.B | 206.D | 207.D | 208.C | 209.D | 210.D |
| 211.D | 212.D | 213.B | 214.A | 215.C | 216.D | 217.C | 218.A | 219.D | 220.A |
| 221.B | 222.C | 223.A | 224.D | 225.B | 226.A | 227.D | 228.D | 229.A | 230.C |

|       |       |       |       |       |       |       |       |       |       |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 231.A | 232.A | 233.D | 234.D | 235.C | 236.B | 237.C | 238.A | 239.D | 240.C |
| 241.C | 242.D | 243.D | 244.B | 245.C | 246.B | 247.D | 248.D | 249.C | 250.D |
| 251.C | 252.C | 253.C | 254.D | 255.D | 256.A | 257.D | 258.C | 259.D | 260.B |
| 261.B | 262.D | 263.A | 264.C | 265.B | 266.C | 267.D | 268.B | 269.C | 270.B |
| 271.B | 272.C | 273.C | 274.B | 275.A | 276.D | 277.B | 278.B | 279.C | 280.B |
| 281.C | 282.A | 283.C | 284.C | 285.B | 286.B | 287.C | 288.B | 289.B | 290.A |
| 291.D | 292.D | 293.A | 294.D | 295.D | 296.C | 297.C | 298.B | 299.B | 300.C |
| 301.B | 302.A | 303.D | 304.D | 305.A | 306.A | 307.C | 308.A | 309.D | 310.C |
| 311.C | 312.B | 313.A | 314.C | 315.B | 316.D | 317.C | 318.B | 319.B | 320.A |
| 321.D | 322.A | 323.A | 324.B | 325.B | 326.A | 327.B | 328.A | 329.D | 330.C |
| 331.C | 332.A | 333.C | 334.B | 335.A | 336.C | 337.A | 338.C | 339.D | 340.B |
| 341.B | 342.C | 343.D | 344.D | 345.C | 346.C | 347.C | 348.C | 349.B | 350.D |
| 351.D | 352.D | 353.B | 354.A | 355.A | 356.C | 357.A | 358.C | 359.D | 360.A |
| 361.A | 362.D | 363.B | 364.C | 365.B | 366.C | 367.D | 368.C | 369.A | 370.C |
| 371.C | 372.D | 373.B | 374.A | 375.B | 376.B | 377.C | 378.B | 379.D | 380.A |
| 381.D | 382.D | 383.A | 384.C | 385.C | 386.B | 387.B | 388.C | 389.A | 390.B |
| 391.C | 392.D | 393.C | 394.A | 395.B | 396.C | 397.C | 398.B | 399.D | 400.D |
| 401.C | 402.A | 403.A | 404.A | 405.A | 406.B | 407.D | 408.C | 409.A | 410.B |
| 411.D | 412.A | 413.D | 414.A | 415.B | 416.A | 417.B | 418.B | 419.A | 420.B |
| 421.C | 422.D | 423.A | 424.B | 425.B | 426.C | 427.C | 428.A | 429.A | 430.B |
| 431.A | 432.A | 433.B | 434.C | 435.C | 436.A | 437.C | 438.A | 439.B | 440.B |
| 441.C | 442.B | 443.A | 444.B | 445.A | 446.D | 447.D | 448.A | 449.C | 450.D |
| 451.D | 452.B | 453.B | 454.A | 455.D | 456.C | 457.D | 458.D | 459.D | 460.B |
| 461.C | 462.A | 463.D | 464.A | 465.D | 466.C | 467.A | 468.C | 469.A | 470.D |
| 471.C | 472.D | 473.A | 474.D | 475.B | 476.B | 477.D | 478.D | 479.A | 480.B |
| 481.D | 482.B | 483.A | 484.B | 485.D | 486.A | 487.B | 488.C | 489.D | 490.A |

|       |       |       |       |       |       |       |       |       |       |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 491.D | 492.C | 493.C | 494.B | 495.B | 496.C | 497.D | 498.C | 499.B | 500.B |
| 501.C | 502.C | 503.A | 504.C | 505.D | 506.A | 507.C | 508.A | 509.D | 510.B |
| 511.C | 512.A | 513.A | 514.D | 515.C | 516.C | 517.B | 518.A | 519.D | 520.B |
| 521.D | 522.C | 523.D | 524.C | 525.A | 526.C | 527.C | 528.A | 529.D | 530.B |
| 531.C | 532.B | 533.A | 534.A | 535.B | 536.A | 537.A | 538.A | 539.C | 540.C |
| 541.C | 542.A | 543.A | 544.C | 545.C | 546.C | 547.C | 548.D | 549.B | 550.A |
| 551.B | 552.D | 553.B | 554.C | 555.D | 556.A | 557.A | 558.B | 559.B | 560.D |
| 561.A | 562.C | 563.D | 564.D | 565.C | 566.A | 567.C | 568.D | 569.C | 570.B |
| 571.C | 572.A | 573.B | 574.C | 575.C | 576.D | 577.D | 578.C | 579.C | 580.A |
| 581.D | 582.C | 583.D | 584.A | 585.A | 586.D | 587.B | 588.A | 589.A | 590.A |
| 591.C | 592.A | 593.A | 594.C | 595.A | 596.B | 597.A | 598.D | 599.D | 600.D |
| 601.C | 602.B | 603.A | 604.C | 605.C | 606.A | 607.D | 608.A | 609.C | 610.A |
| 611.B | 612.D | 613.B | 614.B | 615.A | 616.B | 617.A | 618.B | 619.A | 620.A |
| 621.C | 622.C | 623.B | 624.B | 625.A | 626.A | 627.D | 628.A | 629.B | 630.B |
| 631.B | 632.C | 633.C | 634.C | 635.A | 636.A | 637.C | 638.C | 639.B | 640.B |
| 641.A | 642.C | 643.A | 644.D | 645.D | 646.A |       |       |       |       |

## REFERENCES

1. Andrew S. Tanenbaum, "Modern Operating Systems", 3rd Edition, PHI
2. Stalling William, "Operating Systems", 6th Edition, Pearson Education
3. Silberschatz A., Galvin P., Gagne G., "Operating System Concepts", 8th Edition, John Wiley and Sons,
4. Milan Milenkovic, "Operating Systems Concepts and Design", TMGH
5. Das Sumitabha, "Unix Concepts and Applications", 3rd Edition, Tata McGraw Hill, 2003
6. M. J. Bach, "The Design of The Unix Operating System", PHI.
7. Charles Crowley, "Operating Systems: A Design-oriented Approach", TMH.
8. Goodrich, M. T., Tamassia, R., & Goldwasser, M. H. (2014). Data structures and algorithms in Java (6th ed.). John Wiley & Sons.
9. Weiss, M. A. (2014). Data structures and algorithm analysis in Java (3rd ed.). Pearson.
10. Sahni, S. (2014). Data structures, algorithms, and applications in C++ (2nd ed.). Silicon Press.
11. Horowitz, E., Sahni, S., & Mehta, D. (2013). Fundamentals of data structures in C++ (2nd ed.). University Press India.
12. Aho, A. V., Hopcroft, J. E., & Ullman, J. D. (1983). Data structures and algorithms. Addison-Wesley.
13. Goodrich, M. T., Tamassia, R., & Goldwasser, M. H. (2014). Data structures and algorithms in Java (6th ed.). John Wiley & Sons.
14. Weiss, M. A. (2014). Data structures and algorithm analysis in Java (3rd ed.). Pearson.
15. Sahni, S. (2014). Data structures, algorithms, and applications in C++ (2nd ed.). Silicon Press.
16. Horowitz, E., Sahni, S., & Mehta, D. (2013). Fundamentals of data structures in C++ (2nd ed.). University Press India.
17. Aho, A. V., Hopcroft, J. E., & Ullman, J. D. (1983). Data structures and algorithms. Addison-Wesley.
18. Silberschatz, A., Korth, H. F., & Sudarshan, S. (2021). Database System Concepts (8th ed.). McGraw-Hill Education.
19. C. J. Date, An Introduction to Database Systems (Addison-Wesley, Reading, MA, 8th ed., 2004).