



HLS & SCB SBU

Question Set – 4

Q. 1) Which of the following is not true about Cache memory?

- (a) Faster memory than RAM
- (b) Volatile memory
- (c) Smaller in size than RAM
- (d) Sequential access memory

2) Which of the following methodology is used for allocating disks?

- (a) Contiguous
- (b) Linked
- (c) Indexed
- (d) All of these



3) During DMA Transfer the Microprocessor

- (a) only reads data from memory
- (b) only writes data from memory
- (c) neither reads nor writes data
- (d) performs both read and write data

Q. 4) A cache memory needs an access time of 30 ns and main memory 150 ns, what is the average access time of CPU (assume hit ratio = 80%)?

- (a) 60 ns
- (b) 30 ns
- (c) 150 ns
- (d) 70 ns

- 5) Which of the following statement is False in case of DMA mode?
- (a) Bus grant signal is activated by the DMA controller to inform the CPU that the buses are in high impedance state.
 - (b) DMA controller has 3 registers.
 - (c) The controller raises an interrupt signal to notify the processor that the transfer was complete.
 - (d) None of the above
- Q. 6) The mini-computer phenomenon was introduced in _____ generation of computer.
- (a) I
 - (b) II
 - (c) III
 - (d) IV



Q. 7) If a symbol is erased from a memory cell as a consequence of reading, then the readout is said to be

- (a) Non-volatile
- (b) Volatile
- (c) Destructive
- (d) Non-destructive

8) During bootstrapping _____ passes the control to the kernel.

- (a) linker
- (b) linkage editor
- (c) boot program
- (d) CPU

9) C contains two Special Pointer operators:

- (a) * and &
- (b) * and &&
- (c) & and &&
- (d) % and &



Q. 10) _____ interrupts arise from illegal or erroneous use of an instruction or data.

- (a) external
- (b) internal
- (c) software
- (d) all of the above

11) Von Neumann computer architecture is _____

- (a) SISD
- (b) SIMD
- (c) MIMD
- (d) MISD

12) Scratch pad memory is _____

- (a) local temporary memory
- (b) local permanent memory
- (c) first in first out memory
- (d) last in first out memory

Q. 13) Which is used to store critical pieces of data during subroutines and interrupts:

- (a) Stack
- (b) Queue
- (c) Accumulator
- (d) Data register

Q. 14) Instruction “Complement Accumulator” is an example of _____ addressing mode.

- (a) Register indirect
- (b) Direct
- (c) Immediate
- (d) Implied



Q. 15) Data access time includes

1. Seek time
2. Rotational latency
3. Data transfer time

Which of the above are correct?

- (a) 1 and 2
- (b) 2 and 3
- (c) 1 and 3
- (d) 1, 2 and 3

Q. 16) A cache memory unit with a capacity of 256 KB is implemented as a 4-way set-associative cache. What is the memory size (in MB) if number of tag bits is 6?

- (a) 2
- (b) 4
- (c) 8
- (d) 16

Q. 17) Which of the following connectors is used for telephone/ modem interface?

(a) RJ45

(b) RJ32

(c) RJ67

(d) RJ11

Q. 18) The time required for fetching and execution of one simple machine instruction is known as

(a) Delay time

(b) CPU cycle

(c) Real Time

(d) Seek Time



19) A hard disk is divided into tracks which are further subdivided into

- (a) clusters
- (b) sectors
- (c) vectors
- (d) heads

Q. 20) A processor can support a maximum memory of 4 GB, where the memory is word-addressable (a word consists of two bytes). The size of the address bus of the processor is at least

- (a) 32 bits
- (b) 31 bits
- (c) 35 bits
- (d) 34 bits



21)

Which of the following is an example of operating system with command based interface?

- (a) Android
- (b) Ubuntu
- (c) MS-DOS
- (d) iOS

22)

_____ is a Windows utility program that locates and eliminates unnecessary fragments and rearranges files and unused disk space to optimize operations.

- (a) Backup
- (b) Disk Cleanup
- (c) Disk Defragmenter
- (d) Restore



23)

Which following commands will add the write permission for the owner of the file?

- (a) chmod +w file_name
- (b) chmod g+w file_name
- (c) chmod o+w file_name
- (d) chmod -w file_name

24)

If the process shifted from one memory block to another during its execution period then binding must be _____.

- (a) delayed until run time.
- (b) preponed to compile time.
- (c) preponed to load time.
- (d) None of the above.

25) Which of the following technique is not implemented for free space management

(a) Bitmap or Bit vector

(b) Counting

(c) Paging

(d) Grouping

26)

In Kernel I/O Subsystem, A _____ is a buffer that holds jobs for a device until it is ready to take them.

(a) Buffering

(b) Caching

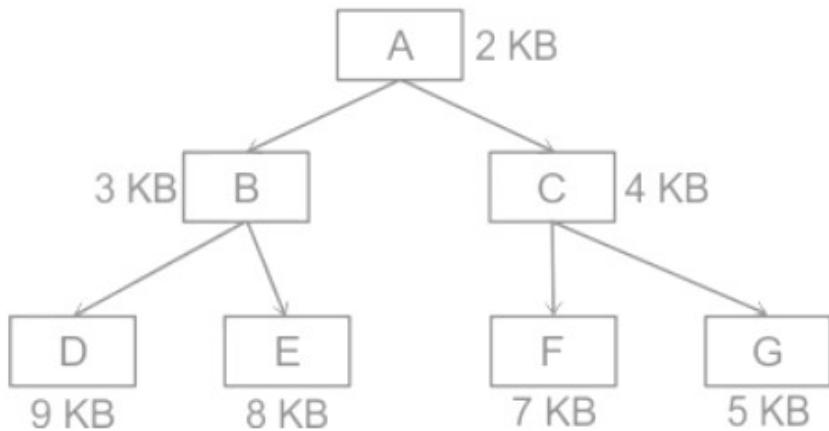
(c) Spooling

(d) Scheduling



27)

Assume a program with the following memory requirements.



What is the total size of memory required to load and run this program?

- (a) 14 KB
- (b) 13 KB
- (c) 15 KB
- (d) 11 KB

28)

Which of the following statement is correct?

- I. Linux is an open-source operating system.
 - II. Linux is a multitasking and multiprocessing operating system.
- (a) Both I and II
 - (b) Neither I nor II
 - (c) Only I
 - (d) Only II

29)

Which of the following register under the category of memory protection in hardware protection?

- (a) Base Register
- (b) Limit Register
- (c) Both of the above
- (d) None of the above



30) Which of the following is not correct about Linux?

- (a) Linux is also used in embedded systems.
- (b) It is an operating system.
- (c) A unique feature of Linux is that it does not have a kernel.
- (d) It can be installed on a computer, without a software license.

31)

Consider the following statements regarding allocation methods:

- S1: Both sequential and direct access can be supported by contiguous allocation.
- S2: The pointer overhead for linked allocation is greater than indexed allocation.

Which of the above statements are not true?

- (a) Only S1
- (b) Only S2
- (c) Both S1 and S2
- (d) None of the above

32)

In Linux, each file or directory is uniquely identified by an identifier called

_____.

- (a) PID
- (b) I-Node
- (c) T-Node
- (d) V-Node

33)

With respect to the Windows file system, which of the following statements is incorrect?

- (a) The folder may contain other folders and files.
- (b)
The file name can contain both capital and small letters.
- (c) File names cannot contain numeric characters.
- (d) Folders can contain both .doc and .pdf files.

34)

The operating system hides the functions of _____ from the user.

- (a) CPU
- (b) Input/Output devices
- (c) Hardware
- (d) Software

35)

Which of the following is not a basic function of operating system?

- (a) Managing sets of data related to each other.
- (b) Managing files.
- (c) Controlling input and output.
- (d) Controlling the operation of the computer.

36)

What can be the reason for single pass assembler to be faster?

- (a) Requires only single scan of the code
- (b) Object program is not created
- (c) No address calculation of symbols
- (d) All of the above

(37)

The processor generates _____ when a page that is referenced is not present in the main memory.

- (a) Segmentation Fault
- (b) Protection Fault
- (c) Page Fault
- (d) TLB Miss

38) Which of the following statement is wrong?

- (a) Windows are a multitasking operating system.
- (b) Linux is a time-sharing operating system.
- (c) Unix is both a multiuser and a multitasking operating system.
- (d) DOS is a multitasking operating system, but it is not multiuser.

39)

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

- (a) Batch system
- (b) Quick response system
- (c) Real time system
- (d) Time sharing system

40)

Pre-emptive scheduling is the strategy of temporarily suspending a running process

- (a) before the CPU time slice expires
- (b) to allow starving processes to run
- (c) when it requests I/O
- (d) None of these

41) An Operating system is _____.

- (a) an application software
- (b) a system software
- (c) a personal software
- (d) None of the above

42) UNIX is a _____.

- (a) Real-time operating system
- (b) Single-user operating system
- (c) Multi-tasking operating system
- (d) Distributed operating system

43) Which of following can not be related to the windows operating system?

- (a) Portable
- (b) GUI
- (c) Multitasking
- (d) Open Source

44)

The booting process does the following with the OS.

- (a) Portions of the operating system are copied from disk into memory
- (b) Portions of the operating system are copied from memory onto disk
- (c) Portions of the operating system are compiled
- (d) Portions of the operating system are emulated

45) The Kernel is _____ user-level threads.

- (a) a part of
- (b) the creator of
- (c) unaware of
- (d) aware of

46) Which of the following is single - user operating system?

- (a) MS - DOS
- (b) UNIX
- (c) XENIX
- (d) Both (A) and (C)

47) In UNIX, each process is identified by its :

- (a) Process Control Block
- (b) Device Queue
- (c) Process Identifier
- (d) None of these

48) Operating system is responsible for

- (a) disk initialization
- (b) booting from disk
- (c) bad-block recovery
- (d) All options are correct

49)

What is the basic program used as an interface between the operating system and the motherboard?

- (a) Universal Serial Bus (USB)
- (b) Advanced Technology Extended (ATX)
- (c) Dual In- Line Memory Module(DIMM)
- (d) Basic Input Output System (BIOS)

50)

Which of the following options is not correct with respect to Linux?

- (a) Ubuntu is the popular version of Linux.
- (b) Linux only provides a command line interface.
- (c) It is a Unix-like operating system.
- (d) The code used to build Linux is free and available for the public to view, edit and use.

51)

Which of the following is false with reference to wireless transmission media in data communication?.

- (a) Radio and infrared lights are the examples of wireless media.
- (b) Used for radio broadcasting in all direction
- (c) Installation needs more time and more money than wired media
- (d) The signal energy propagates in the form of unguided electromagnetic waves

52)

Wired transmission media such as cable or optic fibre are controlled by:

- (a) Physical Layer
- (b) Data Link layer
- (c) Network Layer
- (d) Transport Layer

53) Which of the following switching technique was used in ARPANET?

- (a) Message Switching
- (b) Packet Switching
- (c) Circuit Switching
- (d) Data switching

54)

Which data transmission media is used for local telephone communication and short distance?

(a) Electric cable

(b) Infrared

(c) Microwave

(d) Twisted pair

55)

In Guided media transmission using twisted pair, the twisting of cables is done:

(a) To avoid the cross talk between adjacent pairs

(b) To increase the bandwidth for transmission

(c) To avoid the physical damage to the wires

(d) All of the above

56)

Which of the following transmission media acquire maximum transmission rate in a network?

- (a) coaxial cable
- (b) twisted pair cable
- (c) optical fibre
- (d) electrical cable

57)

Live Television and radio that need the presence of audience are identified as

- (a) Transmission media
- (b) Signal media
- (c) Asynchronous media
- (d) Synchronous media

58) Which of the following is type of Data Transmission Modes?

- (a) Simplex
- (b) Half Duplex
- (c) Full Duplex
- (d) All

59) Data communication refers to the transmission of

- (a) Voice
- (b) Computer data
- (c) Video
- (d) All the above

60) Which of the following statement is false for token bus?

- (a) Stations are connected to a single cable called a bus.
- (b) If a station has finished sending its data, it releases the token and inserts the address of its successor in the token.
- (c) Station with the address matching the destination address of the token gets the token to access the shared media.
- (d) Token bus was standardized by IEEE standard 802.3.

61) PCI stands for

- (a) Partial Component Interconnect
- (b) Partial Component Interaction
- (c) Peripheral Compound Interconnect
- (d) Peripheral Component Interconnect

62) Principle of locality is used in _____.

- (a) Registers
- (b) DMA
- (c) Cache Memory
- (d) Interrupt

63)

In designing a computer's cache system, the cache block (or cache line) size is an important parameter. Which one of the following statements is correct in this context?

- (a) A smaller block size implies better spatial locality
- (b) A smaller block size implies a smaller cache tag and hence lower cache tag overhead
- (c) A smaller block size implies a larger cache tag and hence lower cache hit time
- (d) A smaller block size incurs a lower cache miss penalty

64)

Which programming language is called the mother of programming languages?

- (a) C++
- (b) C
- (c) Java
- (d) COBOL

65)

The real-time operating system, which of the following is the most suitable scheduling scheme?

- (a) Round robin
- (b) First come first serve
- (c) Pre-emptive
- (d) Random scheduling

66) Checking of different hardware parts of computer is done by?

- (a) BIOS
- (b) Hard disk
- (c) Processor
- (d) C.D.

67)

If 'm' is the number of bits in a memory address and 'n' is the number of addressable units, then which of the following represents the correct relationship between 'm' and 'n'?

(a) $n = 2^m$

(b) $m = 2^n$

(c) $m = 2^n - 1$

(d) $n = 2^m + 1$

68) What is the speed-up factor of a m-stage pipeline with n-tasks?

(a) $(m \times n) / (m + n + 1)$

(b) $(m \times n) / (m + n - 1)$

(c) $(m \times n) / (m - n - 1)$

(d) $(m \times n) / (m - n + 1)$

69)

What is/are the advantages of using microprogramming as compared to hardwired method in implementation of control unit?

- (a) Cheaper and faster
- (b) Cheaper and less error prone to implement
- (c) Faster and less error prone to implement
- (d) Cheaper, faster and less error prone to implement

70)

Which of the following registers contain the instructions to be executed in CPU?

- (a) Index Register
- (b) Instructions Register
- (c) Memory Data Register
- (d) Memory Address Register

71)

Which of the following hardware device used for Printing vector graphics?

(a) Ink jet Printer

(b) Plotter

(c) Keyboard

(d) Mouse

72)

Which of the following are two most commonly used industry standards for interchip serial communications?

(a) PCI & SPI

(b) RS-232 & RS-242

(c) I2C & SPI

(d) IS-231 & RS-212

73)

Which of the following statements best reflects the feature of assembly language?

- (a) It increases the portability of the code.
- (b) It is what the computer sees and deals with.
- (c) It is tied to the specifics of the underlying machine.
- (d) One line may involve many low-level operations.

74)

Which of the following control signals has separate destinations?

- (a) Data Paths
- (b) ALU & System Bus
- (c) Data Paths, ALU & System Bus
- (d) None of the above

75)

Considering the below statements, choose the CORRECT option

- (i) A software program is a set of instructions given to a computer for the execution of the task
 - (ii) Software is the variable part of a computer while the hardware is the invariable part
 - (iii) System software is designed for computer-specific tasks
- (a) Statements (ii) and (iii) are correct, and (i) is false
 - (b) Statements (i) and (iii) are correct and (ii) is false
 - (c) Statements (i) and (ii) are correct, and (iii) is false
 - (d) Statements (i) (ii) and (iii) are correct

76) Which of the following statements is true?

- (a) The input frequency of the programmable interval timer (PIT) is fixed.
- (b) The input frequency of the programmable interval timer (PIT) depends on processor clock.
- (c) The input frequency of the programmable interval timer (PIT) is variable.
- (d) The input frequency of the programmable interval timer (PIT) depends on hardware attached.

77)

Which among the following is NOT the function of an Operating System?

- (a) File Management
- (b) Device Management
- (c) Data Analysis
- (d) Memory Management

78)

Which of the following is true about a non blocking system call?

- (a) It halts the execution of the application for an extended time.
- (b) It does not halt the execution of the application.
- (c) It does not block the interrupts.
- (d) None of these

79)

Which of the following is the hardware mechanism that allows a device to notify the CPU?

- (a) Polling
- (b) Interrupt
- (c) Driver
- (d) Controlling

80)

Which one of the following produced output by the computer system?

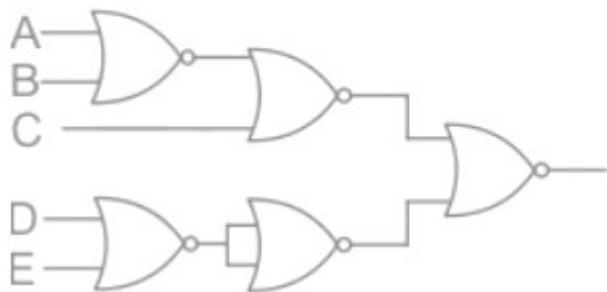
- (a) Text
- (b) Voice
- (c) Graphics
- (d) All of the above

81)

In a D flip flop the out-put state Q is related with D input in what way?

- (a) Q is same as D
- (b) Q is complement of D
- (c) Q is independent of D
- (d) Q is dependent of D

82) The circuit shown in the following figure realizes the function



- (a) $(\overline{A + B} + C)(\bar{D} \bar{E})$
- (b) $(\overline{A + B} + C)(D \bar{E})$
- (c) $(A + \overline{B + C})(\bar{D} E)$
- (d) $(A + B + \overline{C})(\bar{D} \bar{E})$

83)

What will be the number of states when a MOD-4 counter is followed by a MOD-16 counter?

(a) 16

(b) 20

(c) 12

(d) 64

84)

Minimum number of NAND gates required to implement the following binary equation $Y = (\bar{A} + \bar{B})(C + D)$

(a) 4

(b) 5

(c) 3

(d) 6

85)

What is the input of the below give gates in form of ABC to get $f = 0$?



(a) 001

(b) 110

(c) 011

(d) 100
