



6. Match the following :

- |            |   |
|------------|---|
| (a) DMA    | (i) Transforms digital signals into a user-understandable form                  |
| (b) Spool  | (ii) Transfer data directly to main memory without CPU                          |
| (c) Output | (iii) Hold data in temporary storage for execution by another device or program |
| (d) Cache  | (iv) Store and retrieve frequently used data in a temporary Storage             |
- (A) (a)-(iii), (b)-(iv), (c)-(i), (d)-(ii)                      (B) (a)-(ii), (b)-(iii), (c)-(iv), (d)-(i)  
(C) (a)-(ii), (b)-(iii), (c)-(i), (d)-(iv)                      (D) (a)-(iv), (b)-(iii), (c)-(ii), (d)-(i)

7. Pseudo-ops in Assembly language programs are :

- |               |                          |
|---------------|--------------------------|
| (A) Mnemonics | (B) Assembler Directives |
| (C) Operands  | (D) Opcodes              |

8. Signal generated by external hardware to gain attention of processor is :

- |               |          |
|---------------|----------|
| (A) Interrupt | (B) INTA |
| (C) IVT       | (D) HOLD |

9. Match the following service numbers with their functions in INT 21H of 8086 processor :

- |              |  |
|--------------|--|
| (a) AH = 01H | (i) Write an ASCII Character to monitor    |
| (b) AH = 02H | (ii) Write a String to monitor             |
| (c) AH = 09H | (iii) Program Termination                  |
| (d) AH = 4CH | (iv) Read an ASCII Character from keyboard |
- (A) (a)-(i), (b)-(ii), (c)-(iv), (d)-(iii)                      (B) (a)-(i), (b)-(ii), (c)-(iii), (d)-(iv)  
(C) (a)-(iv), (b)-(iii), (c)-(i), (d)-(ii)                      (D) (a)-(iv), (b)-(i), (c)-(ii), (d)-(iii)

10. Type of USB connector commonly used for connecting printers and scanners is :

- |                |                |
|----------------|----------------|
| (A) USB Type-A | (B) USB Type-B |
| (C) USB Type-C | (D) Mini USB   |

11. 'TRIM' command is related to :

- |                          |                          |
|--------------------------|--------------------------|
| (A) Hard Disk Drives     | (B) Solid-State Drives   |
| (C) Random Access Memory | (D) Magnetic Tape Drives |

12. Which one of the following is related to 'BSOD'?
- (A) System Error (B) Protocol  
(C) Hardware Port (D) Malware
13. Which of the following is not a reason for unstable or incorrect system clock on computers?
- (A) CMOS Battery Failure (B) Incorrect BIOS/UEFI Settings  
(C) Malware / viruses (D) Soft Errors in RAM
14. Match the following color-code with their output voltage of SMPS?
- (a) RED (i) - 12V  
(b) GREEN (ii) + 5V  
(c) BLUE (iii) + 12 V  
(d) YELLOW (iv) PS\_ON
- (A) (a)-(ii), (b)-(iv), (c)-(iii), (d)-(i) (B) (a)-(i), (b)-(ii), (c)-(iv), (d)-(iii)  
(C) (a)-(ii), (b)-(iv), (c)-(i), (d)-(iii) (D) (a)-(iv), (b)-(i), (c)-(ii), (d)-(iii)
15. 'Ping' command is used for :
- (A) Sending a test signal to check reachability of a network device  
(B) Identifying the route that a packet takes when traveling to its destination  
(C) Displaying the IP configuration for all network interfaces on a computer  
(D) Connecting to a remote machine securely over the network
16. Which of the following is not a way in windows to identify physical address of the network adapter connected in the computer?
- (A) Network Connection Details of adapter  
(B) ipconfig command  
(C) getmac command  
(D) nslookup command
17. Which of the following is not a functionality of Linux command uname?
- (A) display user name (B) display host name  
(C) display kernel version (D) display operating system name
18. Which one of the following is not a method to enable or disable USB ports in computers?
- (A) Device Manager (B) Group Policy Editor  
(C) Registry Editor (D) Task Manager

19. Which of the following computer component is most related to UEFI?
- (A) BIOS (B) System Memory  
(C) Power Supply (D) DISPLAY
20. Circuit-Level Gateways are :
- (A) Protocol (B) Firewall  
(C) Network Device (D) None of these
21. Which of the following statement is wrong related to AVR ATmega32 Microcontroller?
- (A) 32 KB of internal static RAM  
(B) 32 Kilo bytes programmable flash program memory  
(C)  $32 \times 8$  general purpose working registers  
(D) 32 programmable I/O lines
22. What will be PORTA value after execution of AVR C Statements?  
PORTA = 1 ;  
PORTA |= 1 << PA0;
- (A) 0 (B) 1  
(C) 2 (D) 3
23. Match the following related to ATmega32 :
- |           |                              |
|-----------|------------------------------|
| (a) Timer | (i) Successive Approximation |
| (b) Stack | (ii) Output Compare Register |
| (c) ADC   | (iii) Serial Data Line       |
| (d) I2C   | (iv) RAMEND                  |
- (A) (a)-(ii), (b)-(iv), (c)-(i), (d)-(iii) (B) (a)-(i), (b)-(ii), (c)-(iii), (d)-(iv)  
(C) (a)-(iv), (b)-(iii), (c)-(i), (d)-(ii) (D) (a)-(iv), (b)-(i), (c)-(ii), (d)-(iii)
24. Which of the following statement is wrong related to AVR ATmega32 Microcontroller?
- (A) DDRA = 0x0F; to make PORTA D4-D7 pins as input  
(B) PIN stands for Pin Input Register  
(C) Instruction LDI R1,50 will load R1 register immediately with 50  
(D) Right Shift operation >> is equivalent to Division by 2
25. Which one of the following instruction does not skip next statement in AVR ATmega32?
- (A) SBIC (B) SBCI  
(C) SBIS (D) SBRS

26. Choose the function corresponding to the instruction 0x0E while working on the LCD?
- (A) 8-bit, 2 Line, 5 x 7 Dots
  - (B) 4-bit, 2 Line, 5 x 7 Dots
  - (C) Clear Display
  - (D) Display on Cursor on
27. Which one of the following is not a valid register in the AVR microcontroller associated with USART?
- (A) USART Baud Rate Register
  - (B) USART Control and Status Register A
  - (C) USART Address Register
  - (D) USART Data Register
28. Which command in Linux is used to rename a file image1.png to image2.png?
- (A) mv image2.png image1.png
  - (B) mv -a image2.png image1.png
  - (C) mv image1.png image2.png
  - (D) mv -all image2.png image1.png
29. Which of the following statement is / are correct about Storage Area Networks?
- (i) The main I/O protocol of SAN is NFS or CIFS.
  - (ii) SAN uses block level data access.
  - (iii) In SAN, each server can have direct access to the storage.
- (A) Only (ii) and (iii)
  - (B) Only (i) and (ii)
  - (C) All of the above (i), (ii) and (iii)
  - (D) Only (i) and (iii)
30. Which of the following statement is / are correct about VM Clone and VM template?
- (i) The VM that is powered on can be cloned.
  - (ii) A powered on VM cannot be used to create a template.
- (A) Only (i)
  - (B) Both (i) and (ii)
  - (C) None of the above (i) and (ii)
  - (D) Only (ii)
31. What signature algorithm is required while installing a server certificate for deploying SMB over QUIC?
- (A) SHA256RSA or greater
  - (B) AES
  - (C) SHA256 or greater
  - (D) None of the above

32. What file permission is represented in Linux by the octal expression 4644?
- (A) rwSr-r (B) rwxr-Sr  
(C) rwxr-r (D) None of the above
33. Which one of the following is highly effective in environments where low latency is required such as RDBMS and high frequency trading platform?
- (A) SAS (B) NVMe  
(C) SATA (D) SAS-4
34. Which of the following statement is / are correct about paging scheme?
- (i) If valid / invalid bit is set to 1, it indicates that the page is not present in the main memory resulting in a page fault.  
(ii) The occurrence of page fault calls the page fault interrupt which executes the page fault handling routine.
- (A) Only (i) (B) Both (i) and (ii)  
(C) None of the above (i) and (ii) (D) Only (ii)
35. Which of the following statement is / are correct about RAID?
- (i) In RAID 0 and RAID 1, data is split evenly across two or more disks and there is no redundancy.  
(ii) RAID 2 uses bit level striping.  
(iii) RAID 3 uses byte level striping with dedicated parity.
- (A) Only (ii) and (iii) (B) Only (i) and (ii)  
(C) All of the above (i), (ii) and (iii) (D) Only (i) and (iii)
36. If the time to service a page fault is 10 milliseconds and a memory access takes 1 microsecond. Then, a 99.99% hit ratio results in average memory access time of :
- (A) 1.9999 millisecond (B) 1 millisecond  
(C) 9.999 microseconds (D) 2 microseconds
37. Which of the following is equivalent to RAID z?
- (A) RAID 3 (B) RAID 4  
(C) RAID 5 (D) None of the above





48. Manufacturers of Ethernet NICs request a block of Ethernet addresses from \_\_\_\_\_ to ensure that no two NICs have the same address.
- (A) IANA (B) ICANN  
(C) IEEE (D) ANSI
49. The maximum number of IP Addresses that can be assigned to the nodes with a subnet mask of 255.255.255.224 is :
- (A) 32 (B) 16  
(C) 14 (D) 30
50. Feedback about problems in the communication environment is provided with \_\_\_\_\_ protocol.
- (A) BGP (B) ICMP  
(C) TCP (D) DHCP
51. The value of MTU size in the default VLAN configuration is
- (A) 1500 (B) 1024  
(C) 1600 (D) 2048
52. The most recent standard in the IEEE 802.11 series published in the year 2021 is:
- (A) 802.11n (B) 802.11ax  
(C) 802.11gx (D) 802.11nx
53. In the case of Intrusion Detection System (IDS) and Intrusion Prevention System (IPS), identify the WRONG statement from the below options:
- (A) IDS can only report the threats  
(B) IPS can detect and prevent the threats  
(C) Inline usage of firewalls with IPS is not needed to improve the network security  
(D) All the statements are correct
54. In the case of Access Control Lists (ACL), which of the following statements is WRONG :
- (A) ACLs provide a basic level of security for network access  
(B) The ACL is checked from top to bottom line by line  
(C) If a condition match is true, the packet is permitted or denied and the rest of the ACL statements are not checked  
(D) If no match is present, the default is to allow the packet

55. The first message sent by the client to get an IP address from the DHCP server is:
- (A) DHCP request message
  - (B) DHCP discover message
  - (C) DHCP offer message
  - (D) DHCP release message
56. Which of the following is NOT a feature of the Virtual Private Network?
- (A) It creates tunnels through the internet to interconnect private networks in different geographic isolation
  - (B) Security can be ensured with encryption and special protocols
  - (C) It supports SSL and doesn't support TLS
  - (D) None of these
57. If a host in a network is given the IPv4 address as 10.44.17.210/27, find the correct statement from the following:
- (A) Usable Hosts – 30 Network Address -10.44.17.192 Mask 255.255.255.224
  - (B) Usable Hosts – 62 Network Address -10.44.17.192 Mask 255.255.255.192
  - (C) Usable Hosts – 14 Network Address -10.44.17.208 Mask 255.255.255.240
  - (D) Usable Hosts – 32 Network Address - 10.44.17.210 Mask 255.255.255.224
58. Among the following statements, which is an INCORRECT statement regarding Network Attached Storage (NAS)?
- (A) NAS environment is a good choice for shared data access
  - (B) A NAS system doesn't require a CPU as its component
  - (C) The efficiency of NAS depends on the performance of the network
  - (D) NAS systems are vulnerable to hackers and attackers
59. Among the following statements, which is INCORRECT regarding the RAID configurations?
- (A) RAID 0 is the fastest RAID mode since it writes data across all of the volume's hard drives
  - (B) RAID 1 provides enhanced data security since all data is written to each hard drive in the volume
  - (C) RAID 5 writes data across all hard drives in the volume and a parity block for each data block
  - (D) All the above statements are correct
60. Select the service NOT offered by the NAS system from the given options:
- (A) Notifications Management
  - (B) Access Controls and Management
  - (C) Active Directory Services
  - (D) Backup Services

61. Which of the following RAID architecture is known as double-parity RAID?
- (A) JBOD
  - (B) RAID-6
  - (C) RAID-10
  - (D) RAID-50
62. Among the following statements, which is FALSE in NAS-Shares:
- (A) In the NAS share name field, letters, numbers, hyphens (-), underscore (\_) and dollar (\$) can be used in any combination
  - (B) NAS OS gives the option to add shares/volumes from NAS OS and third party NAS/server devices that are located outside the LAN
  - (C) NAS can join a Windows Workgroup or a Windows Active Directory
  - (D) All the statements are correct
63. The default port number used by NAS Network for encrypted backup is:
- (A) 870
  - (B) 20
  - (C) 8080
  - (D) 22
64. The NAS file system protocol supported only in Microsoft Windows Platform:
- (A) SMB
  - (B) NFS
  - (C) AFP
  - (D) APFS
65. Which of the following is a famous brand in producing NAS devices?
- (A) Apple
  - (B) Microsoft
  - (C) Synology
  - (D) Motorola
66. Among the following statements, which is INCORRECT in the NAS environment :
- (A) Incremental backup is most space efficient
  - (B) Failover is the ability to switch automatically and seamlessly to a reliable system
  - (C) Encryption can be used for optimizing backed up data space
  - (D) NAS is not the best fit for high-speed environments that need high I/O and low latency in storage
67. Select the WRONG statement from the following:
- (A) Media Streaming and Sharing can be implemented with NAS
  - (B) NAS can be integrated with cloud storage
  - (C) Firewalls and Access Logs are supported in NAS
  - (D) All the statements are correct

68. Which among the following statements is INCORRECT regarding Composable functions in the android environment?
- (A) A modifier is not used to augment or decorate composable
  - (B) @ composable annotation must be added before the function
  - (C) @ composable function can't return anything
  - (D) Composable function are like regular functions with few differences
69. Which among the following is NOT a function in the cursor class for database operations in the android environment?
- (A) getPosition()
  - (B) getColumnName()
  - (C) executeQuery()
  - (D) isClosed()
70. Which among the following statements is FALSE regarding an android activity?
- (A) onStart() – The Android activity lifecycle starts with this and is called when the activity is first created
  - (B) onResume() – This is called when the user starts interacting with the application
  - (C) onDestroy() – This callback is called before the activity is destroyed by the system
  - (D) All the statements are correct
71. Which among the following event functions is NOT directly available in the Android Environment?
- (A) onCreateContextMenu()
  - (B) onDoubleClick()
  - (C) onLongClick()
  - (D) onFocusChange()
72. Which of the following is an invalid user input control in Android Environment?
- (A) AutoCompleteTextView
  - (B) Spinner
  - (C) ListBox
  - (D) RadioButton
73. Which among the following methods is NOT used in Palette.Builder class in the android environment?
- (A) maximumColorCount()
  - (B) setRegion()
  - (C) All of the above
  - (D) None of the above
74. Which of the following is NOT supported in Android Recycler view layout manager?
- (A) Grid Layout Manager
  - (B) Circular Layout Manager
  - (C) Linear Layout Manager
  - (D) Custom Layout Manager

75. Which of the following is/are the main component(s) of an android application?
- (A) Activities and Services
  - (B) Broadcast Receivers
  - (C) Content Providers
  - (D) All of the Above
76. Which ACPI state involves the system writing the contents of RAM to the hard drive and then completely powering off?
- (A) S1
  - (B) S2
  - (C) S3
  - (D) S4
77. What is the maximum data transfer speed of USB 3.1 Gen 2?
- (A) 480 Mbps
  - (B) 5 Gbps
  - (C) 10 Gbps
  - (D) 20 Gbps
78. How does link Aggregation benefit network connections?
- (A) It restricts network access to specific devices for security reasons
  - (B) It allows for increased bandwidth and higher data transfer rates
  - (C) It filters unwanted traffic on a network
  - (D) It prioritizes data packets based on their content
79. What distinguishes delta updates from traditional firmware updates?
- (A) Delta updates improve device performance, while traditional updates focus on security enhancements
  - (B) Delta updates only update the portions of firmware that have changed, reducing the size of the update file
  - (C) Delta updates are reversible, while traditional updates are irreversible
  - (D) Delta updates exclusively apply to premium-tier devices
80. What happens internally when the TRIM command is executed on an SSD?
- (A) It permanently erases all data from the SSD
  - (B) It marks unused blocks of data as available for new data, improving write performance
  - (C) It initiates a full drive format process
  - (D) It compresses all stored data to free up space
81. In Wi-Fi settings on a laptop, what does the term SSID refer to?
- (A) System Sleep Identifier
  - (B) Screen Settings Identifier
  - (C) Service Set Identifier
  - (D) Signal Strength Identifier

82. How does HDMI ARC differ from standard HDMI connections?
- (A) HDMI ARC allows for the transmission of audio signals only
  - (B) HDMI ARC supports one-way audio transmission from the TV to an external audio device
  - (C) HDMI ARC permits bi-directional audio transmission between compatible devices
  - (D) HDMI ARC provides higher video resolution compared to standard HDMI
83. Which backup strategy involves backing up data at regular intervals, preserving changes since the last backup, and requires the least storage space?
- (A) Full backup
  - (B) Differential backup
  - (C) Incremental backup
  - (D) Manual backup
84. Which command-line tool in Linux can be utilized to conduct memory errors on a laptop?
- (A) memtest86+
  - (B) memverify
  - (C) memcheck
  - (D) memdiagnose
85. In the context of battery capacity, what does the term 'C-Rate' refer to?
- (A) The rate at which the battery discharges
  - (B) The battery's internal resistance
  - (C) The maximum charge the battery can hold
  - (D) The rate at which the battery charges
86. Why is the utilization of edge computing significant in IoT before transmitting data to the cloud?
- (A) To increase cloud storage capacity
  - (B) To enhance device battery life
  - (C) To facilitate offline data processing
  - (D) To reduce data latency
87. How can you sort a list in descending order using the sorted() function?
- (A) sorted(my\_list, reverse=False)
  - (B) sorted(my\_list, descending=True)
  - (C) sorted(my\_list, reverse=True)
  - (D) sort(my\_list, descending=True)
88. What is the purpose of the count() method in Python tuples?
- (A) Counts the number of elements in the tuple
  - (B) Counts the occurrences of a specific element in the tuple
  - (C) Counts the number of unique elements in the tuple
  - (D) Counts the elements in reverse order

89. What is the output of the following Python program?

```
def greet(name):  
    return f "Hello, {name}!"  
user_name = input("Enter your name:")  
message = greet(user_name)  
print(message)
```

- (A) Displays the length of the user's name
- (B) Displays a greeting message with the user's name
- (C) Requests the user to input a number
- (D) Displays the user's name in uppercase

90. What will be the output of the following code?

```
while True:  
    print("This is an infinite loop")  
    break
```

- (A) It will print "This is an infinite loop" once
- (B) It will print "This is an infinite loop" multiple times before terminating
- (C) It will result in an infinite loop without printing anything
- (D) It will print an error message

91. Which Python library is frequently utilized for managing HTTP requests in Internet of Things (IoT) applications?

- (A) pandas
- (B) httprequests
- (C) httpio
- (D) requests

92. Which of the following short-range wireless communication technology is commonly used in home automation to enable a mobile application to communicate with IoT sensors?

- (A) RFID (Radio-Frequency Identification)
- (B) Bluetooth Low Energy (BLE)
- (C) Zigbee
- (D) Infra Red

93. What is a key benefit of utilizing Raspberry Pi Zero W in IoT projects?

- (A) High-speed data communication through USB-C
- (B) Powerful GPU for graphics processing
- (C) Integrated Wi-Fi and Bluetooth capabilities
- (D) Large form factor for accommodating multiple sensors

94. In the context of a PING command, what does 'DF' represent?
- (A) Datagram Fragmentation
  - (B) Data Flow
  - (C) Destination Flag
  - (D) Don't Fragment
95. Which configuration file does GRUB Customizer edit to implement changes to the GRUB bootloader settings?
- (A) /etc/default/grub
  - (B) /boot/grub/grub.cfg
  - (C) /etc/grub.conf
  - (D) /var/lib/grub/custom.cfg
96. What is the crontab syntax to represent "Every weekday at 3:00 AM"?
- (A) 0 3 \* \* \*
  - (B) 0 3 \* \* 1-5
  - (C) 0 3 \* \* 0-6
  - (D) \* 3 \* \* 1-5
97. What entry in the sudoers file specifies the time duration during which a user can execute sudo commands without the need for re-authentication?
- (A) timeout
  - (B) timestamp\_timeout
  - (C) execution\_duration
  - (D) sudo\_timeout
98. In TELNET communication, what role does the "NAWS" option play?
- (A) Negotiate Automatic Window Size
  - (B) Notify Authentication When Starting
  - (C) Network Authorization and Window Synchronization
  - (D) Name and Address Windowing System
99. During the Samba server installation, which configuration file is commonly edited to define shared directories and permissions :
- (A) /etc/smb.conf
  - (B) /etc/samba/smbd.conf
  - (C) /etc/samba/config
  - (D) /etc/share.conf
100. What is the primary focus of the "deflate" algorithm in GZIP compression?
- (A) Lossless compression
  - (B) Fast compression speed
  - (C) Lossy compression
  - (D) High compression ratio

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