

## CS Major-MCQ

1. Combination of ip + port number= socket Address
2.  $Arr[] = \{6, 7, 8, 9, 0, 1, 2, 3, 4, 5, 6\}$ ;  $*p = arr + 5$ ;  $p[1] = ?$  **A=2**
3. Array access random, sequential.
4. Graph representation in Floyd warshall algorithm- adjacency matrix
5. Parallel to the serial converter- multiplexer
6. Microprocessor – fetch, decode, execute
7. Binary search algorithm average case-  $O(\log n)$
8. Both used TCP & UDP- **DNS**
9. Hiding internal implementation – Encapsulation
10. Create index\_name on Table\_name
11. Asymmetric key encryption- **Public Key**
12. Post expression-  $a + (b - c) * d \Rightarrow abc - d + *$
13. Group sms is broadcast
14. Computer monitor call- VDU
15. Digital signature- Data integrity, authentication, non-repudiation
16.  $S = \{1, 2, 8, 10, 12, 3\}$  which will be **fasted sort** algorithm- **merge sort**
17. C language 32 bit signed integer store-  $2^{31} - 1$
18. Shortest path between two given nodes in an undirected weighted graph- **Dijkstra's algorithm**
19. Market basket analysis is a part of **-association**
20. the job of **OCR** is translate the array of dots into text, Optical character recognition
21. flat file database is most useful for small group situation
22. interest numeric(2,1) write 7.2
23. first normal form- inconsistency,  $2^{nd}$ -partial dependency  $3^{rd}$ -transitive dependency
24. superclass= base class, subclass=derived class
25. proxy firewall filter at – application layer
26. virtual memory located- hard drive
27. **faster** sorting algorithm – **quick sort**
28. **complete binary tree height** n then node  $2^{n+1} - 1$
29. which multiplexing technique transmits digital signals? TDM

30. digitize analog signal by a codec is called-PCD (PULSE-CODE MODULATION)
31. INTERNET NETWORK media access using method – CSMA/CD
32. FTP protocols- TCP
33. Which operation work faster in CPU- Bitwise OR
34.  $\text{Math.floor}(-7.4) = -8$
35. Print  $9//2$  is 4 *integer part of float number*
36. Pure OOP language -C++
37. **Compile, debug and execute – JDK**
38. Source code is a list of command
39. DB Row id represented is – tuple
40. Remove duplicate is – **distinct**
41. Universal logic gate – NAND, NOR
42. Main thread is cloud computing – security
43. Change information between terminals is - ASCII
44. Input and output devices – modem, projector
45. 1 byte= 8 bits
46. Recompile – ALTER VIEW
47. **Unicode – 16 bit, ASCII- 8 bit, UTF-8-8,16,18 bit**
48. The last IP Address represented is – **Broadcast Address**
49. The First IP Address represented is – **Network Address**
50. Virtual ram consists of **static RAM**
51. Cache memory act between – CPU & RAM
52. **Bangla Alphabet** in which code included- **UNICODE**
53. Monitor image is refreshed at least 60time/sec
54. **Fastest data transfer- Serial**
55. **Malloc() & calloc()** needed header file – **stdlib.h**
56. Pixel three color RGB- red green blue
57. Antivirus is a utility software
58. Bios is a – firmware
- 59.

## NOTE

**$2^{10}=1024$ , 1 bit= 8 byte, 4byte=1 nibble**

Simplex ( keyboard, Monitor), Half Duplex(Walkies-talkies, radios), Full Duplex (telephone )

Topology (Mesh, Star, Bus, Ring) mesh  $\frac{n(n-1)}{2}$  (n-1) input/output port , star hub to control all , bus backbone to connected the devices,

Topology different

LAN: Local Area Network

WAN: Wide Area Network

Switch: a switch is a connected link together.

Data bus- bidirectional- processor to others component

Control bus- bidirectional- signal clock pulse

Address bus- unidirectional- carries memory address

TCP/IP: Transmission control protocols /Internet Protocols

TCP Layer:

Original: Application -> Transport->Internet ->Network Interface->Hardware devices

Book: Application ->Transport->Network-> Data Link-> Physical

OSI Model: Application -> Presentation->Session ->Transport->Network->Data link->Physical

<https://www.plixer.com/blog/network-layers-explained/>

**Different work with different layer**

File transfer	Application Layer
Dynamic Routing	Network
Error Detection	Data Link Layer
TCP Congestion Control	Transport
Bit Transfer	Physical Layer

IP to MAC address coming protocols called- ARP( Address Resulation Protocols)

MAC-Media Access Control(MAC)

Multiple Access Protocols

### 1. Random access protocols

- ALOHA
- CSMA (carrier sense multiple access)
- CSMA/CD(carrier sense multiple access/collision detection )
- CDMA/CA(carrier sense multiple access/collision avoidance )

### 2. CONTROLLED access protocols

- Reservation
- Polling
- Token passing

### 3. Channelization protocols

- FDMA (frequency division multiple access)
- TDMA (time division multiple access)
- CDMA (code division multiple access)

ATM-Asynchronous Transfer mode

DDL-relations schemas, deleting and modify (create, alter, drop, truncate, rename)

DML-insert tuple, delete tuple, modify tuple (insert, update, delete, merge)

DCL-Grant, Revoke (Data Control Language)

TCL- COMMIT, ROLLBACK, SAVE POINT ( Transaction Control Language)

DQL- SELECT (Data Query Language)

Integrity - view definition, transaction, embedded, authorization

Asymmetric key encryption process, key used to encrypt public key.

Public Key Encryption is a Asymmetric Encryption.

Digital Signature- Authentication, Encryption, Data Integrity, non-repudiation

Bangla Email Software - Ekushy

ss

Digital Signature- Authentication, Encryption, Integrity

Bangla Email Software – Ekushy Da

*Analog to Digital signal-*

Analog  $\Rightarrow$  Sampling (Digital Value)  $\Rightarrow$  Quantizing (max-min amplitude)  $\Rightarrow$  Encoding  $\Rightarrow$  Digital Data

IP TO MAC Address coming protocols- ARP (Address Resolution Protocol )

Compared to CISC>RISC processor faster

(Complex Instruction Set Computers , Reduced Instruction Set Computers ).

Infinite loop

For( ; ; )

```
#include<stdio.h>
```

```
int main()
```

```
{
```

```
    int a=10,b,c;
```

```
    c=(a=90)?b=11:20;
```

```
    printf("a=%d c=%d",a,c);
```

```
    return 0;
```

```
} output:90,11
```

DFS is faster than BFS.

A complete graph n node than  $\frac{n(n-1)}{2}$  edges

Static function/class/variable?

1.414F or 1.414f best way to convert floating data type.

Set & Reset | &

A program in the execution is called a Process. Process is more than a program code.

Sub class- Derived Class

Supper Class- Base Class

ARP-Address Resolution Protocol

BIOS- Basic Input Output System

CAD- Computer Aided Design ( 2D, 3D Design)

CAL-Computer Aided Learning

CIRS-Complex Instruction Set Computers

DHCP-Dynamic Host Configuration Protocols

DVD- Digital Versatile Disc

EGA-Enhanced Graphics Adapter

EPIC- Explicitly Parallel Instruction completing

GMS-Global System for Mobile Communications

IMAP-Internet Message Transfer Protocols

JPEG-Joint Photographic Experts Group

LTE-Long Term Evolution

MICR- Magnetic Ink Character Reader

MIRC-Microsoft Internet Relay Chat

OSPF- Open short path file

PDF-Portable Document format

QR Code- Quick Response Code

RAID-Redundant array independent disk

RAM-Volatile Memory (volatile memory)

RFID-Radio Frequency Identification

RICS-Reduce Instruction Set Computers

ROM- Non-volatile Memory (non-volatile memory)

SNTP-Simple Network Transfer protocols

SSH- Shell Secure

URL-Uniform Resource Locator

VGA-Video Graphics Array

VIRUS- Vital information resource under seize

VOID- Voice Over Internet Protocol

VPN- Virtual Private Network

WiFi- Wireless Fidelity

Computer Monitor called – VDU

Real Time operating system- RT Linux

Throw replace return

Primary key also apply in uniquely identify of data

## Network Layer

Physical layer- Hub, repeater- unstructured raw bit stream

Data link layer-bridges, modems, network card, 2-layer switch – error free transfer of data frame

Network layer- router, 3 layer switch- control of operation subnet, determine packet source to destination

Transport Layer- gateways, firewalls- error free delivery, no loss, no duplication

Session layer- gateways, firewalls, PC's- Established process to process communication between host to network

Presentation layer- gateways, firewalls, PC's- protocols conversion, encryption, decryption, data compression

Application layer- gateways, firewalls, all end devices- software application