1. Among A and B, select which one is software layer and which one is hardware layer in Open Systems Interconnection Model.

   A

   - Application layer
   - Presentation layer
   - Session layer

   B

   - Network layer
   - Datalink layer
   - Physical layer

2) HTTPS uses which protocol for security?

3) Apart from LAN, VAN and MAN, what do you understand by VPN?

4) Digital Signatures, As the name sounds are the new alternative to signing a document digitally. What other authenticity you have used over network in regular life.

5) After the authentication is successful, _____(Authorization/Communication) can be used to determine what resources is the user allowed to access and the operations that can be performed.

6) A **firewall** is a network security device, either hardware or software-based, which monitors all incoming and outgoing traffic, and based on a defined set of security rules it accepts, rejects, or drops that specific traffic.

	Source IP	Dest. IP	Source Port	Dest. Port	Action
1	192.168.21.0	--	--	--	deny
2	--	--	--	23	deny
3	--	192.168.21.3	--	--	deny
4	--	192.168.21.0	--	>1023	Allow

Sample Packet Filter Firewall Rule

Consider above Packet firewall rule. Now Network IP: 192.168.21.0, Trying to connect to your machine and want to send data.

IIs the Action allowed, as per above table firewall rule? (Allow/Deny)

7) Application Layer Firewall, software Firewall and Hardware Firewall allows only destined and avoids malicious data.

If these firewalls are not installed, your application may receive _____ data (malicious / all Secured) data.

8) When a bigger network is divided into smaller networks, in order to maintain security and to maintain smaller networks easier using routing table, we go for _____(Subnetting/Firewall)

9) Move A and B to corresponding IP assignment.

S.NO	Static IP Address	Dynamic IP address
	It is provided by ISP(Internet Service Provider).	While it is provided by DHCP (Dynamic Host Configuration Protocol).
A) This IP address does not change at IP any time, which means if a ip address is provided then it can't be changed or modified and is easily traceable. B) These addresses changes at any time and not easily traced.		

10)List any two difference between MAC address , IP address and Network Address.

11) Match numbers with letters according to 7 layers roles:

1. **Application Layer:**
2. **Presentation Layer:**
3. **Session Layer:**
4. **Transport Layer**
5. **Network Layer**
6. **Data Link Layer**
7. **Physical Layer**

A. Bit Stream, physical medium, Cable, Connectors

B. MAc Address, Flow control, Frames, switches, ARP

C. Coding into 1s and 0s, encryption, compression, JPG, HTTPS, SSL,TSL, ASCII, Data

D. Authentication, Permission, connection between two hosts, NetBIOS, PPTP, RPC, API, Data

E. End-to-End Error Control, TCP, UDP, Segment

F. Routing , switching, IPV4,IPV6, IPSec, Packet

G. Message format, Human-Machine interfaces, HTTP, FTP, Data

12) DNS is a host name to IP address translation service. Use ping amazon.com and share IP address.

Domain: amazon

IP address:

13) Consider below network address and subnetID.

1. **Network Address**: 172.16.0.0
2. **Subnet ID**: 172.16.0.0/16

From the routing table, which Interface should be choosen for Network ID 172.16.0.0: (A/B)

Routing Table:

Network ID	Subnet Mask	Interface
200.1.2.0	255.255.255.192	A
172.16.0.0	255.255.255.193	B