**SECTION A**

**Multiple Choice Questions**. (30\*1=30)

1. **Internet is related to \_\_\_\_\_\_\_**
   1. **ARPANET**
   2. OSI
   3. DECNET
   4. ALOHA
2. **In which year ARPANET was introduced globally?**
   1. **1962**
   2. 1972
   3. 1982
   4. 1992
3. **Data unit in Network Layer is called**
   1. **Datagrams**
   2. Frames
   3. Segments
   4. Encapsulate message
4. **Which protocol ensures reliable delivery?**
   1. **TCP**
   2. UDP
   3. Both of above
   4. None of above
5. **An IPV4 address is \_\_\_ bits.**
   1. **32**
   2. 48
   3. 64
   4. 128
6. **An IPV6 address is \_\_\_ bits.**
   1. 32
   2. 64
   3. **128**
   4. 256
7. **Which class of IP address provides a maximum of only 254 host addresses per network ID?**
   1. Class A
   2. Class B
   3. **Class C**
   4. None of the above
8. **An IP address is \_\_\_\_ bytes in dotted decimal notation.**
   1. 2
   2. 3
   3. **4**
   4. None of above
9. **Which layer will be used while transmitting data using FTP or Telnet?**
   1. Presentation
   2. Session
   3. **Application**
   4. Transport
10. **The Transport layer concerns with**
    1. Bits
    2. Frames
    3. **Segments**
    4. Packets
11. **OSI stands for**
    1. **open system interconnection**
    2. operating system interface
    3. optical service implementation
    4. none of the mentioned
12. **The OSI model has \_\_\_\_\_\_\_ layers.**
    1. **7**
    2. 8
    3. 6
    4. 4
13. **Which layer is responsible for process to process delivery?**
    1. **Transport layer**
    2. Network layer
    3. Session layer
    4. Data link layer
14. **Which layer provides the services to user?**
    1. **application layer**
    2. session layer
    3. presentation layer
    4. none of the mentioned
15. **Transmission data rate is decided by**
    1. **Physical layer**
    2. Network Layer
    3. Data link layer
    4. Transport layer
16. **Which one of the following is not a function of network layer?**
    1. Routing
    2. inter-networking
    3. congestion control
    4. **none of the mentioned**
17. **Which of the following is private IP address?**
    1. 12.0.0.1
    2. 168.172.19.39
    3. 172.15.14.36
    4. **192.168.24.43**
18. **What is the class of the address 224.0.0.0?**
    1. A
    2. B
    3. C
    4. **D**
19. **What is network id of the address 227.78.19.21?**
    1. 227
    2. 227.78
    3. 227.78.19
    4. **None of the above**
20. **Which of the following protocols uses both TCP and UDP?**
    1. FTP
    2. SMTP
    3. Telnet
    4. **DNS**
21. **What is the host id of the address 130.8.243.12?**
    1. 8. 243.12
    2. **243.12**
    3. 12
    4. None of the above
22. **What is the class of the address 126.255.255.254?**
    1. B
    2. **A**
    3. D
    4. C
23. **Identify the statement which cannot be associated with OSI model**
    1. A structured way to discuss and easier update system components
    2. **Functionality at one layer no way requires information from another layer**
    3. One layer may duplicate lower layer functionality
    4. None of the mentioned
24. **If you use either Telnet or FTP, which is the highest layer you are using to transmit data?**
    1. Session
    2. **Application**
    3. Presentation
    4. Transportation
25. **What is the maximum number of valid IP addresses in a class B network?**
    1. 65536
    2. **65534**
    3. 254
    4. 256
26. **Which of the following is equivalents to 192.168.1.2?**
    1. [0:0:0:0:0:ffff:c0a8:10](https://www.ultratools.com/tools/ipWhoisLookupResult?ipAddress=0%3A0%3A0%3A0%3A0%3Affff%3Ac0a8%3A102)0
    2. [0:0:0:0:0:ffff:c0a8:10](https://www.ultratools.com/tools/ipWhoisLookupResult?ipAddress=0%3A0%3A0%3A0%3A0%3Affff%3Ac0a8%3A102)1
    3. [**0:0:0:0:0:ffff:c0a8:102**](https://www.ultratools.com/tools/ipWhoisLookupResult?ipAddress=0%3A0%3A0%3A0%3A0%3Affff%3Ac0a8%3A102)
    4. [0:0:0:0:0:ffff:c0a8:10](https://www.ultratools.com/tools/ipWhoisLookupResult?ipAddress=0%3A0%3A0%3A0%3A0%3Affff%3Ac0a8%3A102)3
27. **What protocols are used to find the hardware address of a local device?**
    1. IP
    2. RARP
    3. **ARP**
    4. ICMP
28. **TCP/IP model was developed \_\_\_\_\_ the OSI model.**
    1. simultaneous to
    2. after
    3. **prior to**
    4. none of the mentioned
29. **Which layer links the network support layers and user support layers?**
    1. session layer
    2. data link layer
    3. **transport layer**
    4. network layer
30. **Transmission Control Protocol divides a stream of data into smaller units that are called**
    1. Frame
    2. Datagram
    3. **Segments**
    4. Information

**SECTION B**

**Short Answer Questions**

**Answer any five (5) questions out of eight (8) questions. (5\*6=30)**

1. What do you mean by Internet? Explain advantages of Internet.
2. How TCP/IP differs from OSI Reference Model?
3. Explain briefly about IPV4 Class address.
4. What do you mean by URL? Explain its type with example.
5. Explain how DNS works.
6. Differentiate between Internet and Intranet.
7. Explain your understanding about Cyber Threats.
8. Define:
   1. Network Part
   2. VPN
   3. Firewall

**SECTION C**

**Long Answer Questions**

**Answer any two (2) questions out of three (3) questions. (2\*20=40)**

***Note: Q.no. 3 is compulsory.***

1. **Explain about OSI reference model. Describe each layer of OSI reference model along with their functions.**
2. **Explain about TCP/IP model. Describe each layer of TCP/IP model along with their functions. Briefly describe the name of any two protocols used in different layer of TCP/IP model.**
3. **Case Study.**

Suppose you are appointed as an IT head of XYZ Bank of Nepal. Every day you are encountered with different cyber threats. Prepare a case report about different possible threats you encounter during your day to day official work and solutions to minimize their effects.