**SECTION A**

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

1. **OSI stands for**
   1. **open system interconnection**
   2. operating system interface
   3. optical service implementation
   4. none of the mentioned
2. **The OSI model is \_\_\_ model.**
   1. **Reference**
   2. Sample
   3. Both a & b
   4. None of the above
3. **Which layer is responsible for process to process delivery?**
   1. **Transport layer**
   2. Network layer
   3. Session layer
   4. Data link layer
4. **Which layer provides the services to user?**
   1. **application layer**
   2. session layer
   3. presentation layer
   4. none of the mentioned
5. **Transmission data rate is decided by**
   1. **Physical layer**
   2. Network Layer
   3. Data link layer
   4. Transport layer
6. **OSI is related to \_\_\_\_\_\_\_**
   1. TCP/IP
   2. DECNET
   3. ALOHA
   4. **None of the above**
7. **How many levels of layer is provided in OSI Model?**
   1. One
   2. Four
   3. Eight
   4. **None of the above**
8. **What is the first octet range of Class B address?**
   1. 125 - 191
   2. 126 - 191
   3. 127 - 191
   4. **128 - 191**
9. **Which of the following is not private IP address range?**
   1. 10.0.0.0 - 10.255.255.255
   2. 172.16.0.0 - 172.31.255.255
   3. 162.16.0.0 - 172.31.255.255
   4. **182.179.0.0 – 190.156.255.255**
10. **A class C address starts with leading bit(s) \_\_\_.**
    1. 111
    2. 010
    3. 101
    4. **110**
11. **An IPV4 address is \_\_\_ bits.**
    1. 24
    2. **32**
    3. 48
    4. 128
12. **What is the host id of the address 130.8.23.12?**
    1. 8. 23.12
    2. **23.12**
    3. 12
    4. None of the above
13. **There are \_\_\_\_\_\_\_\_\_\_ different versions of IP popularly used.**
    1. 1
    2. **2**
    3. 3
    4. 4
14. **Which protocol is connectionless?**
    1. ICMP
    2. **UDP**
    3. IP
    4. TCP
15. **Which protocol deals with emails?**
    1. FTP
    2. **SMTP**
    3. LPD
    4. X window
16. **Which IP is reserved for loopback testing?**
    1. 192.168.0.0
    2. 10.255.255.255
    3. 255.0.0.0
    4. **None of above**
17. **What is network id of the address 227.278.119.121?**
    1. 227
    2. 227.278
    3. 227.278.119
    4. **None of the above**
18. **Telnet**
    1. transferring files
    2. sharing files
    3. both a & b
    4. **allows user to connect client machine**
19. **Which of the following is equivalents to 192.168.1.1?**
    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:c0a8:102](https://www.ultratools.com/tools/ipWhoisLookupResult?ipAddress=0%3A0%3A0%3A0%3A0%3Affff%3Ac0a8%3A102)
    3. [0:0:0:0:0:ffff:c0a8:10](https://www.ultratools.com/tools/ipWhoisLookupResult?ipAddress=0%3A0%3A0%3A0%3A0%3Affff%3Ac0a8%3A102)3
    4. [**0:0:0:0:0:ffff:c0a8:10**](https://www.ultratools.com/tools/ipWhoisLookupResult?ipAddress=0%3A0%3A0%3A0%3A0%3Affff%3Ac0a8%3A102)**1**
20. **Which layer will be used while transmitting data using FTP or Telnet?**
    1. Presentation
    2. Session
    3. Physical
    4. **Application**
21. **Internet is related to \_\_\_\_\_\_\_**
    1. **ARPANET**
    2. OSI
    3. DECNET
    4. ALOHA
22. **In which year ARPANET was introduced globally?**
    1. **1962**
    2. 1972
    3. 1982
    4. 1992
23. **Data unit in Network Layer is called**
    1. **Datagrams**
    2. Frames
    3. Segments
    4. Encapsulate message
24. **Which protocol ensures reliable delivery?**
    1. **TCP**
    2. UDP
    3. Both of above
    4. None of above
25. **An IPV6 address is \_\_\_ bits.**
    1. **128**
    2. 64
    3. 48
    4. None of the above
26. **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
27. **What is the class of the address 126.255.255.254?**
    1. B
    2. **A**
    3. D
    4. C
28. **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
29. **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
30. **What is the maximum number of valid IP addresses in a class B network?**
    1. 65536
    2. **65534**
    3. 254
    4. 256

**SECTION B**

**Short Answer Questions**

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

1. What do you mean by Intranet? Explain advantages of Internet.
2. Explain your understanding on Domain name system.
3. Explain your understanding on Name servers with its types.
4. Differentiate Absolute URL and Relative URL with example.
5. Differentiate between Intranet and Extranet.
6. Explain how DNS works.
7. Explain your understanding about Cyber Security.
8. Define:
   1. Loopback Address
   2. Private Network
   3. Host Part

**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.** 
   1. **Explain your understanding on IP address. Explain about IPv4 class address along with their ranges. (10)**
   2. **Suppose you are appointed as IT Head of TCMIT. Study the current scenario of TCMIT. Study minutely about their web portals and suggest any 5 sub domains that TCMIT should create on their portal that make clear picture about TCMIT with your understanding.**
2. **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.