UNIT 4- 2 MARKS

1. **Define Kerberos.**
   Kerberos is an authentication service developed as part of project Athena at MIT. The problem that Kerberos address is, assume an open distributed environment in which users at work stations wish to access services on servers distributed throughout the network.

2. **What is Kerberos? What are the uses?**
   Kerberos is an authentication service developed as a part of project Athena at MIT.Kerberos provide a centralized authentication server whose functions is to authenticate servers.

3. **What 4 requirements were defined by Kerberos?**
   - Secure
   - Reliable
   - Transparent
   - Scalable

4. **In the content of Kerberos, what is realm?**
   - A full service Kerberos environment consisting of a Kerberos server, a no. of clients, no.of application server requires the following:
   - The Kerberos server must have user ID and hashed password of all participating users in its database.
   - The Kerberos server must share a secret key with each server. Such an environment is referred to as "Realm".

5. **What is the purpose of X.509 standard?**
   X.509 defines framework for authentication services by the X.500 directory to its users.X.509 defines authentication protocols based on public key certificates.

6. **List the 3 classes of intruder?**
   Classes of Intruders
   - Masquerader
   - Misfeasor
   - Clandestine user

7. **Define virus. Specify the types of viruses?**
   A virus is a program that can infect other program by modifying them the modification includes a copy of the virus program, which can then go on to infect other program. Types:
   - Parasitic virus
   - Memory-resident virus
   - Boot sector virus
   - Stealth virus
   - Polymorphic virus
   - Metamorphic virus

8. **What is application level gateway?**
   An application level gateway also called a proxy server; act as a relay of application-level traffic. The user contacts the gateway using a TCP/IP application, such as Telnet or FTP, and the gateway asks the user for the name of the remote host to be accessed.

9. **List the design goals of firewalls?**
   - All traffic from inside to outside, and vice versa, must pass through the firewall.
   - Only authorized traffic, as defined by the local security policy, will be

allowed to pass.
- The firewall itself is immune to penetration.

10. What are the steps involved in SET Transaction?
- The customer opens an account
- The customer receives a certificate
- Merchants have their own certificate
- The customer places an order.
- The merchant is verified.
- The order and payment are sent.
- The merchant requests payment authorization.
- The merchant confirm the order.
- The merchant provides the goods or services.
- The merchant requests payment.

11. What is dual signature? What it is purpose?
The purpose of the dual signature is to link two messages that intended for two different recipients. To avoid misplacement of orders.

12. What is the need for authentication applications?
- Security for E-mail
- Internet protocol security
- IP address security.

13. What do you mean by SET? What are the features of SET?
SET is an open encryption and security specification designed to protect credit card transaction on the Internet.

14. Write any 3 hash algorithm?
- MD5 algorithm
- SHA-I
- RIPEMD-160 algorithm.

15. List out the four phases of virus.
- Dormant phase
- Propogation phase
- Triggering phase
- Execution phase

16. What is worm?
A worm is a program that can replicate itself and send copies from computer to computer across network connections. it also perform some unwanted function. The network worm programs use network connections to spread from system to systems

17. What is Bastion host?
Bastion host is a system identified by firewall administrator as critical strong point in network security. Serves as platform for application level/ circuit level gateways.

18. What is trusted software?
Trusted software a system that enhances the ability of a system to defend against intruders and malicious programs by implementing trusted system technology.

19. Four general techniques of firewall.
- Security control
- Direction control

- User control
- Behaviour control

20. Three types of firewall.
- Packet filter
- Application level gateway
- Circuit level gateway.

21. List down the firewall configuration
- Screened host firewalls-single homed bastion
- Screened host firewall system(dual-homed bastion)
- Screened subnet firewall system

22. List approaches for intrusion detection.
- Statistical anomaly detection
- Rule based detection

23. What is intruder?
An intruder is an attacker who tries to an unauthorized access to a system.

24. What is mean by SET? What are the features of SET?
Secure Electronic Transaction (SET) is an open encryption and security specification designed to protect credit card transaction on the internet.
Features are:
a). Confidentiality of information
b). Integrity of data
c). Cardholder account authentication
d). Merchant authentication

25. What is Zombie?
A Zombie is programs that securely takes over another internet-attached computer and then uses that computer to launch attacks are difficult to trace the Zombie's creator.

26. What is firewall and list its characteristics?
It means of protecting a local system (or) network of system from network based security.
1. Physically blocks all access to local network except via firewall
2. Only authorized traffic will be allowed to pass
3. It is immune to penetration

27. Illustrate when the certificates are revoke in X.509.
1. The user's private key is assumed to be compromised.
2. The user is no longer certified by this CA. Reasons for this include that the subject's name has changed, the certificate is superseded, or the certificate was not issued in conformance with the CA's policies.
3. The CA's certificate is assumed to be compromised.

15 MARKS

1. What is Kerberos? Explain how it provides authenticated service.
2. Explain the format of the X.509 certificate.
3. Explain the technical details of firewall and describe any three types of firewall with neat diagram.
4. Write short notes on Intrusion Detection.
5. Define virus. Explain in detail.
6. **Explain** Secure Electronic Transaction with neat diagram.
7. What is a trusted system? **Explain** the basic concept of data access control in trusted systems. (8)