WMS THEORY

Q1] Explain the issues and challenges in designing a sensor network.

Ans: Issues in designing a sensor network are :
1] Design Issues.
2] Topology Issues.

i] Design Issue
- 'Fault
    Due to the deployment of sensor node in an uncontrolled harsh environment.

- Low latency
    Due to the deployment of sensor node in an uncontrolled harsh environment.

- Scalability
    System performance improves after adding hardware is called scalable system.

- Transmission Media -
    Traditional problems associated with wireless channels may affects sensor network.

2] Topology issues.

- Geographic Routing
    It relies on geographic position information

- Sensor Holes.
    Routing hole consist of region in the actual network

- <u>Coverage Topology</u>
  It reflects how well an area is monitored oro tracked by sensor.

Challenges related to sensor Network :
  - Challenges in Real Time
  - Challenges in Power Management
  - Network scale & time varying characteristic.
  - Management at Distance - Difficult for Managers.

Q2] Discuss the comparision of sensor network with ad hoc

ans:

	Parameters	AD-HOC Wireless Network	Sensor Network
1.	Node Size	Large	Very Small
2.	Node Density	Very Low	High
3.	Coverage Area	Medium	Low
4.	Data Type	High data	Multimedia
5.	Bandwidth	High	Low
6	Congestion Control requirement	High	Low
7.	Power Consumption	Doesn't Matter	Very Low

Q3] Explain Security attacks that cannot be associated with any specific layer in the network protocol stack.

Ans: 1] Mac - Layer :- Jamming Attack

2] Network Layer Attacks.
   - Warmhole attack
      In this attack, an attacker recieves packets at one location in the network and turn them into another location in the network where packets are resent into the network.

   - Byzantine Attack
      A malicious node falsely advertises good path to destination node during path finding process.

   - Blackhole Attack
      A compromised intermediate node or a set of nodes works in collision and carries out attack such as creating routing loops dropping packets etc.

3] Transport Layer Attack
   - Session Hijacking :
      Here an adversary takes control over a session between two nodes.

4] Application layers Attacks :

- Repudiation

  Repudiation refers to denial or a tempted denial of a node involved in a communication of having participated in all parts of the communication.

5] Multilayers Attacks :

- Denial of Service :

  An adversary attempt to prevent legitmente and authorized users of services offered by network from accessing these services.
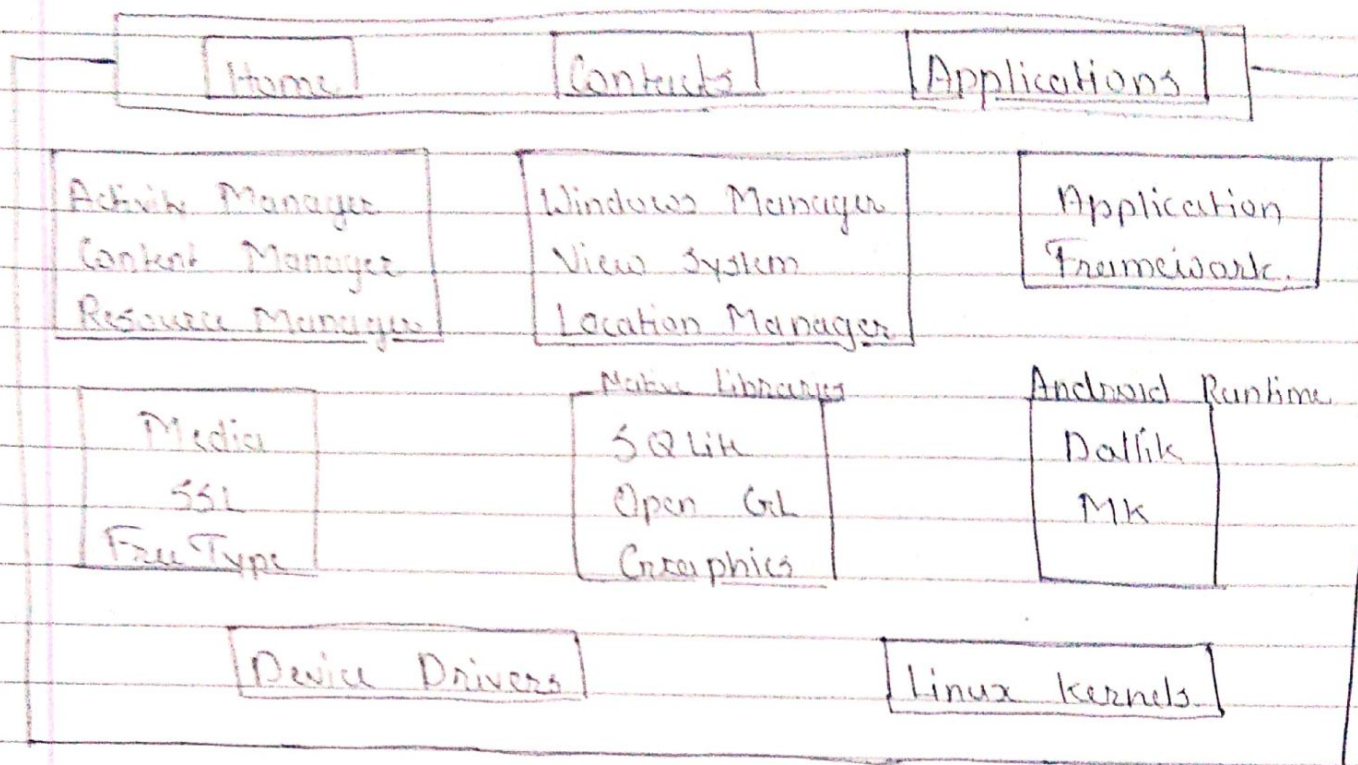
- Device Tampering :

  Unlike nodes in wired network nodes ad hoc Security network are usually compact, soft hand in nature.

- Synflooding adversary :

  Send large number of sync packets to overflood a particular machine.

Q4] Draw and explain android software stack.

| Home | Contacts | Applications |

| Activity Manager
Content Manager
Resource Manager | Windows Manager
View System
Location Manager | Application
Framework |

Native Libraries

| Media
SSL
Free Type | SQLit
Open GL
Graphics | Android Runtime
Dalvik
MK |

| Device Drivers | Linux kernels |

Android Software Stack

The Stack is categorized into 5 parts

1] Link kernels :
  - It is the heart of android architecture that exist at roots of android architecture.
  - It is responsible for device drivers, power management, resources management,

2] Native Libraries
  - On the top of linux kernel, there are native libraries such as websit, open GL, Freetype
  - The Webkit library is responsible for the browser support.

3] Android Runtime
- In Android runtime there are core libraries and num. which is responsible to run androids application.

4] Android Freimwork
- It includes android API's such as users Interface, telephony, resaurces, location.

5] Applications
- All applications such as home constant contact, setting, gamus, browser, android libraries and goals.