



## PNS SCHOOL OF ENGG.& TECH.

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### SUB-MOBILE COMPUTING (Th.-5)

1<sup>ST</sup> Internal question & answer

Computer science Dept.

Semester -5<sup>th</sup>

1. Answer the following questions (any Five). [2\*5]

**(a) Write down the characteristics of an electromagnetic signal.**

ANS: CHARACTERISTICS OF ELECTROMAGNETIC SIGNAL :-

-The characteristics of an electromagnetic signal are: - Time period

- Frequency

- Wave Length

- Phase

- Amplitude

- Velocity

**(b) What is modulation? Why modulation is required?**

ANS: MODULATION:-

- The process of changing the characteristics of carrier signal with accordance to baseband signal is known as Modulation.

- Modulation is must required because of following reasons: - To reduce Antenna Length

- To reduce Noise

- To reduce Interference

**(c) What is an Antenna?**

ANS: ANTENNA:-

An Antenna is a transducer that converts Radio Frequency [RF] fields into alternating current or vice versa.

- An Antenna play an important role in the operation of all radio equipment.

**(d) Write down two advantages of infrared.**

ANS: - It requires less power

- Low security cost

- The circuit is simple

- This is Portable

- High noise immunity

**(e) What is Cell splitting?**

**ANS: CELL SPLITTING :-**

-Cell Splitting is a means of increasing the capacity of a cellular system by sub-dividing or Splitting cells into two or more smaller cells.

**(f) What is Network? Write its different types.**

ANS: NETWORK :-

- Network is a set of devices connected by a communicated link .

- Computer Network can be categorized by their size.

- It is mainly of four types: 1- Local Area Network[LAN]

2- Metropolitan Area Network[MAN]

3- Wide Area Network[WAN]

4- Personal Area Network[PAN]

2. Answer the following questions. (any two)

**(a) What do you mean by multiple access? Discuss the frequency division multiple access.**

**ANS: MULTIPLE ACCESS:-**

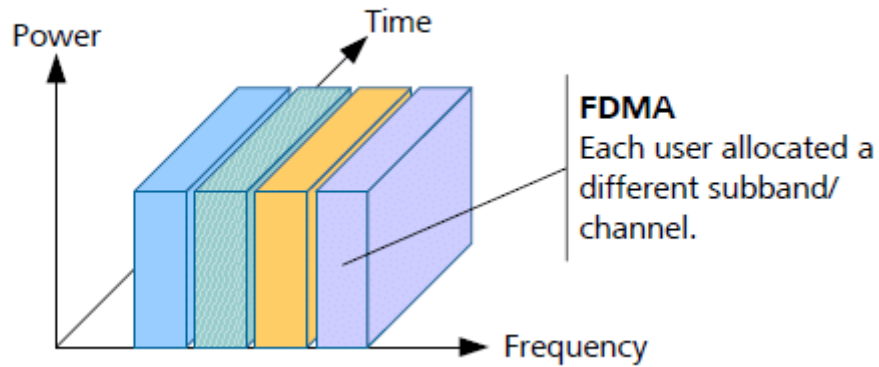
- Multiple Access is a Technique that lets multiple mobile users share the allotted spectrum in the most effective manner. Since, the spectrum is limited, the sharing is necessary to improve the overall capacity over a geographical area.

**FREQUENCY DIVISION MULTIPLE ACCESS:-**

- It is one of the most common multiple access or multiplexing technique.

- The available frequency band is divided into channels of equal bandwidth so that , each communication is carried on a different frequency.

## Frequency Division Multiple Access



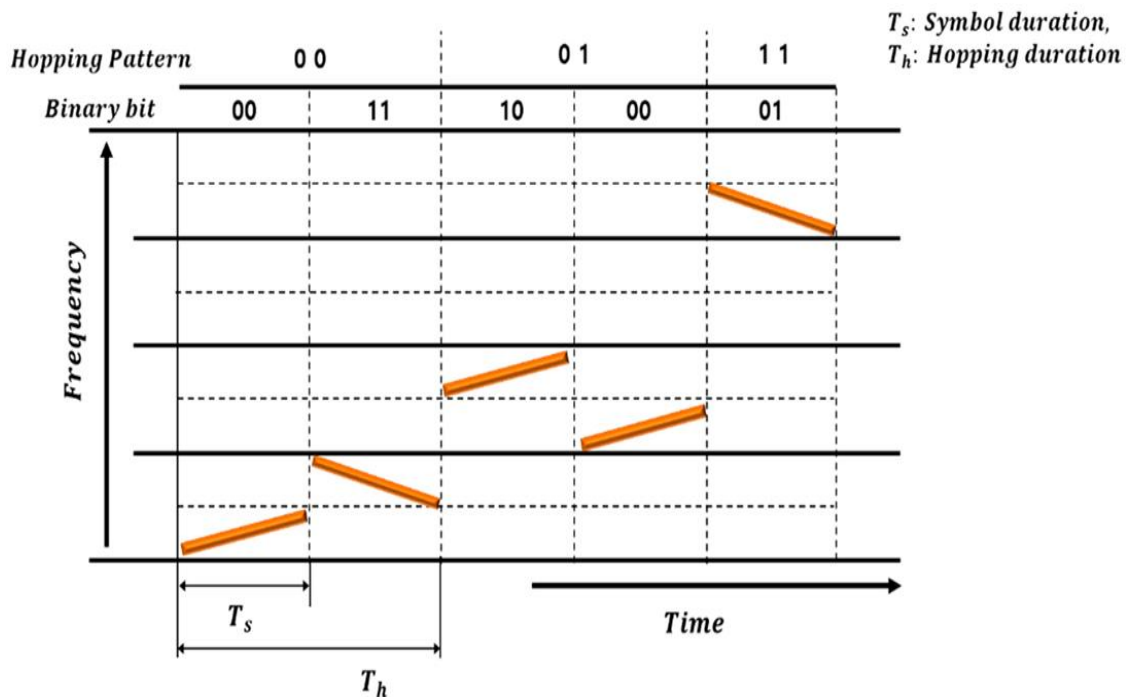
b) What do you mean by spread spectrum? Discuss the frequency hopping spread spectrum.

ANS: SPREAD SPECTRUM:-

- In telecommunication a band sometimes call a frequency band is a specific range of frequencies.
- In the Radio frequency spectrum, which is divided among ranges from very low frequency[VLF] to extremely high frequency[EHF].
- Each band has defined upper & lower frequency limit.

FREQUENCY HOPPING SPREAD SPECTRUM:-

- FHSS is a form of spreading in which the frequency of a carrier is altered many times within a fixed time period in accordance with a pseudo random list of channels.
- The signal jumps from one frequency to another within a given frequency range.



c) Discuss mobile agent architecture with necessary diagram.

**ANS: MOBILE AGENT ARCHITECTURE:-**

- Mobile agent software system total different client server & N-tier system.
- Mobile agent have the following properties:
  - They are the programs which hide data & code, which are transported from client machine to remote server for execution.
  - They execute asynchronously.
  - The term mobile agent have no relation with mobile user, mobile device or any other aspects or mobility.
  - They are software components which move from server to server in a network while keeping the state of application.
  - Mobile agent can manage their own life cycle, this means that we don't have to load & unload the applications manually or store many applications on the device.
  - Hence the uses of CPU & other resources are minimized & simplified.