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	<p style="text-align: center;"><u>LESSON PLAN</u></p> <p><u>COMMUNICATION-2: CHARACTERSTICS OF WIRELESS TECHNOLOGY (MOBILE, WIFI ETC)</u></p> <p>Code - C-2</p> <p>Period - Two</p> <p>Type - Lecture</p> <p>Term - I</p> <hr/> <p><u>Training Aids</u></p> <p>1. OHP, Computer slides, pointer, screen, black board and chalk.</p> <p><u>Time Plan</u></p> <p>2. (a) Introduction. - 05 mins</p> <p>(b) Part I- Features of Wi Fi Tech - 25 mins</p> <p>(c) Part II- Limitations - 20 mins</p> <p>(d) Part III-Terminal Equipment in Use for Wi Fi Tech- 25 mins</p> <p>(e) Conclusion - 05 mins</p> <p style="text-align: center;"><u>INTRODUCTION</u></p> <p>3. The development on WI-FI technology began in 1997 when the Institute of Electrical and Electronic Engineers (IEEE) introduced the 802.11 technologies that carried higher capacities of data across the network but the cost of the Wi-Fi is tremendously high. In 2003, IEEE sanctioned the new 802.11 g standard and the world saw the creation of affordable Wi-Fi for the masses.</p> <p>4. Wi-Fi provides its users with the liberty of connecting to the Internet from any place such as their home, office or a public place without the hassles of plugging in the wires. Wi-Fi is quicker than the conventional modem for accessing information over a large network. With the help of different amplifiers, the users can easily change their location without disruption in their network access. Wi-Fi devices are compliant with each other to grant efficient access of information to the user. Wi-Fi location where the users can connect to the wireless network is called a Wi-Fi hotspot. Through the Wi-Fi hotspot, the users can even enhance their home business, as accessing</p>

information through Wi-Fi is simple. Accessing a wireless network through a hotspot in some cases is cost-free while in some it may carry additional charges.

5. The market is flooded with various Wi-Fi software tools. Each of these tools is specifically designed for different types of networks, operating systems and usage type. It is imperative for users to pick out a Wi-Fi software tool that is compatible with their computer and its dynamics.

6. Wi-Fi uses radio networks to transmit data between its nodes. Such networks are made up of cells that provide coverage across the network. The more the number of cells, the greater and stronger is the coverage on the radio network.

7. To connect to a Wi-Fi network, a wireless adapter card is essential. Additional knowledge about data encryption is also required. The Wi-Fi users don't have to be concerned with the security issues. The security methods such as MAC ID filtering, Static IP addressing and WEP encryption ensure the user privacy to the maximum.

AIM

8. The aim of this lecture is to acquaint the cadets with characteristics of wireless technology including mobile telephony and Wi Fi.

PREVIEW

9. The lecture will be conducted in the following parts:-

- (a) Part I- Features of Wi Fi Technology.
- (b) Part II- Limitations.
- (c) Part III- Terminal Equipment in Use for Wi Fi Technology.

PART I: FEATURES OF WI FI TECHNOLOGY

10. **Unmatched Mobility and Elasticity.** Wi-Fi allows new intensity of connectivity without giving up its functions. Wi-Fi introduced various types of utilities such music streamers that transmit your music to speakers without any wire you can also play music from the remote computer or any other attached to the network. The most important now you can play online radio. Wi-Fi technology system is rather remarkable, you can download songs, send email and transfer files expediently at sky-scraping speed and you can move your computer easily because your Wi-Fi network has no cable to disrupt your work so we can say that it is quite easy, helpful and most of all expedient.

11. **Supports an Entire Age Bracket.** Wi-Fi technology has several advantages it supports an entire age bracket and creates a connection between components on the same network and has the ability to transfer data between the devices and enable different kind of devices such as game, MP3 player, PDA's and much more!

12. **Convenient and Every Where.** Wi-Fi is a convenient technology and where the range station exists you are online during travel you can equip with a Wi-Fi network and set up shop

(a)

anyplace. You will automatically connect with internet if you are near hotspot.

13. **Faster and Secure.** With Wi-Fi you can get high speed of internet because it is faster than DSL and Cable connection. You can establish a Wi-Fi network in small space and don't need any professional to install your system. Wi-Fi security system for threats makes it more adaptable. You can easily configure the device to obtain better performances. The standard devices, embedded systems and network security make it more powerful.

PART II: LIMITATIONS

14. **Security.** WIFI technology supports two types, one is called "Infrastructure" and other is "Ad hoc". Ad hoc Wi-Fi network can be connected without central device known as router or access point. Ad hoc mode is always preferred over infrastructure mode, however Wi-Fi devices configured on Ad hoc mode offers nominal security against network intruders. Ad hoc Wi-Fi configured devices cannot disable SSID broadcast in contrast to infrastructure mode. Network attackers will not require much of effort to prevail upon Ad hoc Networks.

15. **Interference from other Devices.** Wi-Fi transmits data at 2.4 GHz making it susceptible to interference with Bluetooth enabled devices, mobile phones, cordless phones, Microwaves and other communication devices. Proximity of interfering devices would increase the probability of poor communication link and result into lower browsing speeds.

16. **Lacks High Quality Media Streaming.** Today's fastest Wi-Fi standards are unable to support while viewing high-end media. High definition video and audios cannot be viewed flawlessly because of lower transfer rates; things can be much more worst if more clients are accessing the same access points simultaneously.

PART III: TERMINAL EQUIPMENT IN USE FOR WIRELESS TECHNOLOGY

17. **Personal Digital Assistant.** A personal digital assistant (PDA), also known as a palmtop computer, is a mobile device that functions as a personal information manager. PDAs are largely considered obsolete with the widespread adoption of smartphones. Nearly all PDAs have the ability to connect to the Internet (Wi-Fi). A PDA has an electronic visual display, enabling it to include a web browser; all current models also have audio capabilities enabling use as a portable media player, and also enabling most of them to be used as mobile phones. Most PDAs can access the Internet, intranets or extranets via Wi-Fi or Wireless Wide Area Networks. Most PDAs employ touch screen technology.

18. **Mobile Phone.** A mobile phone (also known as a cellular phone, cell phone and a hand phone) is a device that can make and receive telephone calls over a radio link while moving around a wide geographic area. It does so by connecting to a cellular network provided by a mobile phone

operator, allowing access to the public telephone network. Most of the mobile phones are Wi-Fi enabled.

19. **Smart Phones** A smartphone is a mobile phone built on a mobile operating system, with more advanced computing capability and connectivity than a feature phone. The first smartphones combined the functions of a PDA with a mobile phone. Later models added the functionality of portable media players, low-end compact digital cameras, pocket video cameras, and GPS navigation units to form one multi-use device. Many modern smartphones also include high-resolution touchscreens and web browsers that display standard web pages as well as mobile-optimized sites. Wi-Fi and Mobile Broadband provide high-speed data access.

20. **iPhone** The iPhone is on the lines of smartphones designed and marketed by Apple Inc. It runs Apple's iOS mobile operating system, known as the "iPhone OS" until mid-2010, shortly after the release of the iPad. The first iPhone was released in 2007; the most recent iPhone, the sixth-generation iPhone 5 in 2012. The user interface is built around the device's multi-touch screen, including a virtual keyboard. The iPhone has Wi-Fi and cellular connectivity (2G, 3G and 4G).

21. Other devices, which use Wi-Fi technologies, are iPADs, BlackBerry, tablet computers and lap/palm tops. More or less, the basic functions in all cases remain the same. With new generation of equipment flooding in the market, it would become difficult to keep a track of all these equipment.