

1.This set of Wireless & Mobile Communications Multiple Choice Questions & Answers (MCQs) focuses on “Wireless Local Area Networks (WLANs)”.

1. What is the full form of WLAN?
- a) Wide Local Area Network
  - b) Wireless Local Area Network
  - c) Wireless Land Access Network
  - d) Wireless Local Area Node

Answer: b

Explanation: WLAN stands for Wireless Local Area Network. Wireless networks is increasingly used as a replacement for wires within homes, buildings, and office settings through the deployment of wireless local area networks (WLANs).

2 2. WLANs use high power levels and generally require a license for spectrum use.

- a) True
- b) False

Answer: b

Explanation: WLANs use low power and generally do not require a license for spectrum. They provide ad hoc high data transmission rate connections deployed by individuals. In the late 1980s, FCC provided licence free bands for low power spread spectrum devices in ISM band, which is used by WLAN.

3. What is the name of 300 MHz of unlicensed spectrum allocated by FCC in ISM band?

- a) UNII
- b) Unlicensed PCS
- c) Millimetre wave
- d) Bluetooth

Answer: a

Explanation: FCC allocated 300 MHz of unlicensed spectrum in the ISM bands. This allocation is called the Unlicensed National Information Infrastructure (UNII) band. It was allocated for the express purpose of supporting low power license free spread spectrum data communication.

4. Which of the following specifies a set of media access control (MAC) and physical layer specifications for implementing WLANs?

- a) IEEE 802.16
- b) IEEE 802.3
- c) IEEE 802.11
- d) IEEE 802.15

Answer: c

Explanation: IEEE 802.11 is a set of media access control and physical layer specification for implementing WLAN computer communication. It was founded in 1987 to begin standardization of spread spectrum WLANs for use in the ISM bands.

5. Which of the following is not a standard of WLAN?

- a) HIPER-LAN
- b) HIPERLAN/2
- c) IEEE 802.11b
- d) AMPS

Answer: d

Explanation: AMPS is a standard of first generation network. HIPERLAN is a WLAN standard developed in Europe in mid 1990s. HIPERLAN/2 is also developed in Europe that provides upto 54 Mbps of user data.

6. Which of the following is the 802.11 High Rate Standard?

- a) IEEE 802.15
- b) IEEE 802.15.4
- c) IEEE 802.11g
- d) IEEE 802.11b

Answer: d

Explanation: IEEE 802.11b was a high rate standard approved in 1999. It provided new data rate capabilities of 11 Mbps, 5.5 Mbps in addition to the original 2 Mbps and 1 Mbps user rates of IEEE 802.11.

7. Which of the following spread spectrum techniques were used in the original IEEE 802.11 standard?

- a) FHSS and DSSS
- b) THSS and FHSS
- c) THSS and DSSS
- d) Hybrid technique

Answer: a

Explanation: Original IEEE 802.11 used both the approaches of FHSS (Frequency Hopping Spread Spectrum) and DSSS (Direct Sequence Spread Spectrum). But from late 2001s, only DSSS modems are used within IEEE 802.11.

8. Which of the following WLAN standard has been named Wi-Fi?

- a) IEEE 802.6
- b) IEEE 802.15.4
- c) DSSS IEEE 802.11b
- d) IEEE 802.11g

Answer: c

Explanation: The DSSS IEEE 802.11b standard has been named Wi-Fi by the Wireless Ethernet Compatibility Alliance. It is a group that promotes adoption of 802.11 DSSS WLAN.

9. Which of the following is developing CCK-OFDM?

- a) IEEE 802.11a
- b) IEEE 802.11b
- c) IEEE 802.15.4
- d) IEEE 802.11g

Answer: d

Explanation: IEEE 802.11g is developing CCK-OFDM (Complementary Code Keying Orthogonal Frequency Division Multiplexing) standards. It will support roaming capabilities and dual band use for public WLAN networks. It also has backward compatibility with 802.11b technologies.

10. What is the data rate of HomeRF 2.0?

- a) 10 Mbps
- b) 54 Mbps
- c) 200 Mbps
- d) 1 Mbps

Answer: a

Explanation: HomeRF 2.0 has data rate of the order of 10 Mbps. The FHSS proponents of IEEE 802.11 have formed the HomeRF standard that supports the frequency hopping equipment. In 2001, HomeRF developed a 10 Mbps FHSS standard called HomeRF 2.0.

11. HIPER-LAN stands for \_\_\_\_\_

- a) High Precision Radio Local Area Network
- b) High Performance Radio Local Area Network
- c) High Precision Radio Land Area Network
- d) Huge Performance Radio Link Access Node

Answer: b

Explanation: HIPER-LAN stands for High Performance Radio Local Area Network. It was developed in Europe in mid 1990s. It was intended to provide individual wireless LANs for computer communication.

12. What is the range of asynchronous user data rates provided by HIPER-LAN?

- a) 1-100 Mbps
- b) 50-100 Mbps
- c) 1-20 Mbps
- d) 500 Mbps to 1 Gbps

Answer: c

Explanation: HIPER-LAN provides asynchronous user data rates of between 1 to 20 Mbps, as well as time bounded messaging of rates of 64 kbps to 2.048 Mbps. It uses 5.2 GHz and 17.1 GHz frequency bands.

13. What is the name of the European WLAN standard that provides user data rate upto 54 Mbps?

- a) UNII
- b) WISP
- c) MMAC
- d) HIPERLAN/2

Answer: d

Explanation: HIPERLAN/2 has emerged as the next generation European WLAN standard. It provides upto 54 Mbps of user data to a variety of networks. The networks includes the ATM backbone, IP based networks and the UMTS network.

14. What is WISP?

- a) Wideband Internet Service Protocol
- b) Wireless Internet Service Provider
- c) Wireless Instantaneous Source Provider
- d) Wideband Internet Source Protocol

Answer: b

Explanation: WISP is wireless Internet Service Provider used to explore public LANs (publican). It builds a nationwide infrastructure of WLAN access points in selected hotels, restaurants or airports. It then charges a monthly subscription fee to users who wish to have always on Internet access in those selected locations.

15. The price of WLAN hardware is more than 3G telephones and fixed wireless equipment.

- a) True
- b) False

Answer: b

Explanation: As, WLAN could be used to provide access for the last 100 meters into homes and businesses. Therefore, the price of WLAN hardware is far below 3G telephones and fixed wireless equipment.