❖ **PERSONAL AREA NETWORK – PAN:**

Examples:

1. **Blue tooth wireless PAN:**
   - ✓ These are referred as Pico nets. Pico nets are Ad hoc networks.
   - ✓ Pico nets work over a range of 200metres and transmit data of about 2100 Kbit/ sec.
   - ✓ The Bluetooth technology is based on IEEE 802.15 standard.
   - ✓ The wearable and portable computer devices communicate with each other.
   - ✓ In this process of hand shake, an electric field is generated around people, and they emit Pico amps.
   - ✓ These emissions complete the circuit and hence an exchange of information takes place.

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❖ **PERSONAL AREA NETWORK – PAN:**

Examples:

2. **ZigBee:**
   - ✓ It is a short-range, low-power computer networking protocol that complies with the IEEE 802.15.4 standard.
   - ✓ In the U.S., ZigBee devices operate in the 902-928 MHz and 2.4 GHz unlicensed bands.
   - ✓ ZigBee employs DS-SS modulation with a gross data rate of 40 kb/s in the 900 MHz band and 250 kb/s in the 2.4 GHz band.
   - ✓ There are three types of ZigBee devices:
     - ☞ *ZigBee Coordinator (ZC):* Forming the root of the network tree and bridging to other networks ,
     - ☞ *ZigBee Router (ZR):* It can run an application function as well as act as an intermediate router by passing data from other devices.
     - ☞ *ZigBee End Device (ZED):* It contains just enough functionality to talk to its parent node. It can sleep most of the time, extending its battery life.

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