**Assignment:**

**What is 5G NSA network architecture**

5G NSA (Non-Standalone) network architecture is an approach to deploying 5G networks that leverages existing 4G LTE infrastructure. Here's a brief overview of how it works:

**Key Characteristics of 5G NSA:**

1. Dependence on 4G LTE Core: In a 5G NSA setup, the 5G New Radio (NR) is connected to the existing 4G LTE core network (Evolved Packet Core or EPC). This means that 5G NR and 4G LTE work together to provide improved data rates and performance.

2. Dual Connectivity: Devices (User Equipment, or UE) in an NSA network can connect to both 4G LTE and 5G NR simultaneously. This dual connectivity allows for better utilization of network resources and smoother user experiences.

3. Improved Data Rates and Capacity: By using both 4G and 5G resources, NSA can offer higher data rates and improved capacity compared to standalone 4G networks. This is achieved without the need for a complete overhaul of the existing network infrastructure.

4. Faster Deployment: Since 5G NSA leverages existing 4G infrastructure, it allows mobile network operators to roll out 5G services more quickly and cost-effectively. This is a key advantage for early 5G deployment.

5. Incremental Upgrades: Operators can incrementally upgrade their networks from 4G to 5G by first implementing NSA and later transitioning to Standalone (SA) 5G, which uses a 5G core network.

**Components of 5G NSA:**

- 4G LTE eNodeB (eNB): The existing 4G LTE base station that handles signaling and user data.

- 5G NR gNodeB (gNB): The new 5G base station that works in conjunction with the 4G LTE eNB.

- Evolved Packet Core (EPC): The core network infrastructure of 4G LTE that manages data and voice services.

- User Equipment (UE): Devices like smartphones, tablets, or IoT devices that can connect to both 4G and 5G networks.

**Benefits of 5G NSA:**

- Enhanced Mobile Broadband: Provides higher speeds and greater capacity to handle more users and data-intensive applications.

- Cost Efficiency: Reduces the need for immediate investment in a new 5G core network.

- Seamless Transition: Facilitates a smoother transition from 4G to 5G for both operators and users.