**Question – Describe Steps of NSA Call Procedure.**

**Answer - Steps of NSA Call Procedure -** The technical details of the 5G Non-Standalone (NSA) call flow. In a 5G NSA deployment, the 5G network leverages the existing 4G LTE infrastructure. This allows for a faster rollout of 5G services while maintaining connectivity through the 4G network. Here’s a step-by-step breakdown of the 5G NSA call flow:

1. **Initial Access**

* **Cell Search and Synchronization**: The User Equipment (UE) scans for 5G NR (New Radio) cells and synchronizes with a suitable cell.
* **Random Access Procedure**: The UE performs a random access procedure to establish a connection with the 5G cell.

2. **PLMN Selection and Registration**

* **PLMN Selection**: The UE selects a Public Land Mobile Network (PLMN) and initiates registration with the 4G E-UTRAN (Evolved Universal Terrestrial Radio Access Network).
* **Registration**: The UE exchanges identity and capability information with the network.

3. **Attach Procedure**

* **Attach Request**: The UE sends an attach request to the 4G network to obtain a Temporary Mobile Subscriber Identity (TMSI) and an IP address.
* **Attach Accept**: The network responds with an attach accept message, completing the attach procedure.

4. **Establishment of 4G Data Connection**

* **Radio Bearer Setup**: The UE establishes a data connection with the 4G E-UTRAN by setting up a radio bearer for data transfer.

5. **Service Request for 5G NR**

* **Service Request**: The UE sends a service request to the 4G core network (EPC – Evolved Packet Core) indicating its desire to use 5G services.
* **EPC Processing**: The EPC processes the request and prepares for 5G connectivity.

6. **NG-RAN Node Selection**

* **5G NR Cell Selection**: The EPC selects a suitable 5G NR cell for the UE.
* **Handover Preparation**: The 4G E-UTRAN informs the 5G NG-RAN (Next-Generation Radio Access Network) about the impending handover.

7. **RRC Connection Reconfiguration**

* **RRC Reconfiguration**: The NG-RAN configures the Radio Resource Control (RRC) connection for 5G NR, establishing a new radio bearer for 5G data transfer.

8. **Data Forwarding over 5G NR**

* **Data Transfer**: The data transfer switches from the 4G E-UTRAN to the 5G NR cell, enabling the UE to connect to both 4G and 5G networks simultaneously.

9. **Dual Connectivity**

* **Maintaining Connections**: The UE maintains connections with both the 4G and 5G networks, a configuration known as Dual Connectivity.

10. **Data Handover**

* **Traffic Shift**: Data traffic is gradually shifted from the 4G connection to the 5G connection, ensuring a smooth handover without service disruption.

11. **LTE-to-NR Handover Complete**

* **Handover Completion**: The handover is complete when the UE is fully transitioned to the 5G NR cell, and the UE is now solely connected to the 5G network for data transfer.