

## PLMN- PUBLIC LAND MOBILE NETWORK

SUBJECT CODE- ITA0306

 <p><b>PUBLIC LAND MOBILE NETWORK (PLMN)</b></p>	<h3>WHAT IS PLMN ?</h3> <p>A <b>PLMN</b> is the wireless communication network provided by a mobile operator. It includes all components needed to deliver voice, data, <b>SMS</b>, and roaming services.</p> <h4>COMPONENTS OF PLMN</h4> <ol style="list-style-type: none"><li><b>1. Mobile Station (MS)</b> The user's device along with the <b>SIM</b> card. It communicates with nearby network towers for calls and data.</li><li><b>2. Base Transceiver Station (BTS)</b> The cellular tower that sends and receives radio signals. It provides wireless coverage to mobile users in that area.</li><li><b>3. Base Station Controller (BSC)</b> Controls and manages multiple <b>BTS</b> towers. Handles handovers, frequency allocation, and radio resources.</li></ol>	<ol style="list-style-type: none"><li><b>4. Mobile Switching Center (MSC)</b> The central switching unit of the mobile network. It connects calls, routes <b>SMS</b>, and manages mobility functions.</li><li><b>5. Home Location Register (HLR)</b> A permanent database storing subscriber and <b>SIM</b> details. It keeps track of authentication info, services, and user's home network.</li><li><b>6. Visitor Location Register (VLR)</b> Temporary database for users roaming in another area. It stores location and service permissions of visiting subscribers.</li><li><b>7. Authentication Center (AUC)</b> Provides security keys for <b>SIM</b> verification. Ensures secure communication and prevents unauthorized access.</li><li><b>8. Equipment Identity Register (EIR)</b> Database containing <b>IMEI</b> status of all devices. It blocks stolen, blacklisted, or unauthorized mobile phones.</li></ol>
<ol style="list-style-type: none"><li><b>9. Gateway MSC (GMSC)</b> Acts as the connection point to external networks like <b>PSTN</b>. It routes incoming calls to the correct <b>MSC</b> inside the <b>PLMN</b>.</li><li><b>10. SGSN (Serving GPRS Support Node)</b> Handles mobile data sessions and user authentication. Manages packet delivery, mobility, and <b>QoS</b> for data users.</li><li><b>11. GGSN / PGW (Gateway GPRS Support Node / Packet Gateway)</b> Connects the mobile network to the internet. Provides IP addresses and handles data routing to online services.</li><li><b>12. OSS (Operations Support System)</b> Used by operators to monitor, manage, and optimize the network. Ensures smooth operation, fault detection, and performance analysis.</li></ol>	<h3>THE END....</h3>	