Introduction

- 5G Technology stands for 5th Generation Mobile technology.
- 5G technology has changed the means to use cell phones within very high bandwidth.
- User never experienced ever before such a high value technology.
- Nowadays mobile users have much awareness of the cell phone (mobile) technology.
- 5G technology most powerful and in huge demand in near future.

HISTORY OF 1G

- 1G refers to the first generation of wireless telephone technology, mobile telecommunications.
- It was first introduced in 1980s and completed in early1990s.
- It's Speed was up to 2.4kbps.
- It allows the voice calls in 1 country.
- 1G network use Analog Signal.
- AMPS was first launched in USA in 1G mobile systems..

HISTORY OF 2G

- It was launched in Finland in the year 1991.
- 2G network use digital signals
- It's data speed was up to 64kbps.
- 2G technology refers to the 2nd generation which is based on GSM.

Features Includes:

- It enables services such as text messages,picture,messages and MMS (multi media message).
- It provides better quality and capacity .

HISTORY OF 3G

- 3G technology refer to third generation which was
- introduced in year 2000s.
- Data Transmission speed increased from 144kbps-2Mbps.
- Typically called Smart Phones and features increased its bandwidth and data transfer rates to accommodate web-based

HISTORY OF 4G

- Telia Sonera was the first telecom operator in the world to launch 4G commercially.

- That happened on December 14, **2009,** in the capitals of Sweden and Norway – Stockholm and Oslo, respectively..

- **4G** LTE wireless broadband is 10 times faster than 3G — able to handle download **speeds** between 5 and 12 Mbps and upload **speeds** between 2 and 5 Mbps, with peak download **speeds** approaching 50 Mbps.

Wireless
4G TECHNOLOGY

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Features Include:
☐ More Security
☐ High Speed
☐ High Capacity
☐ Low Cost Per-bit
etc.

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DEFINITION OF 5G

➢5G technology refer to short name of fifth Generation.

➢The first **country** to adopt **5G** on **a** large scale was South Korea, in April 2019.

➢**5G** networks were once expected to be **launched** in **India** by late 2020 or early 2021, but it's now highly unlikely that this could happen before mid-2021

➢ Complete wireless communication with almost no limitations.

➢ It is highly supportable to **WWWW** (Wireless World Wide Web).

BENEFITS

▪High Speed high capacity

▪Faster data transmission that of the previous generation.

▪High Capacity.

▪5G is More Effective and More Attractive.

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APPLICATIONS OF 5G

•**_Autonomous Vehicles_**
Autonomous vehicles are one of the most anticipated 5G applications. Vehicle technology is advancing rapidly to support the autonomous vehicle future.

•**_5G IoT in Smart City Infrastructure and Traffic Management_**

•Many cities around the world today are deploying intelligent transportation systems (ITS), and are planning to support connected vehicle technology.
•The U.S. Department of Transportation's (USDOT's) Connected Vehicle program is working with state and local transportation agencies, vehicle and device makers, and the public to test and evaluate technology that will enable cars, buses, trucks, trains, roads and other infrastructure, and our smartphones and other devices to "talk" to one another.

APPLICATIONS OF 5G

•_**Augmented Reality (AR) and Virtual Reality (VR)**_
•The low latency of 5G will make AR and VR applications both immersive and far more interactive.
•In industrial applications, for example, a technician wearing 5G AR goggles could see an overlay of a machine that would identify parts, provide repair instructions, or show parts that are not safe to touch.

•_**5G IoT Applications for Drones**_
•With 5G we will be able to push limits of drones that exist today, especially in range and interactivity.

Advantages of 5G

- ❖ High resolution and bi-directional large bandwidth shaping.
- ❖ Technology to gather all networks on one platform.
- ❖ More effective and efficient.
- ❖ Technology to facilitate subscriber supervision tools for the quick action.
- ❖ Most likely, will provide a huge broadcasting data (in Gigabit), which will support more than 60,000 connections.
- ❖ Easily manageable with the previous generations.
- ❖ Technological sound to support heterogeneous services (including private network).
- ❖ Possible to provide uniform, uninterrupted, and consistent connectivity across the world.

Disadvantages of 5G

❖Technology is still under process and research on its viability is going on.

❖The speed, this technology is claiming seems difficult to achieve (in future, it might be) because of the incompetent technological support in most parts of the world.

❖Many of the old devices would not be competent to 5G, hence, all of them need to be replaced with new one — expensive deal.

❖Developing infrastructure needs high cost.

❖Security and privacy issue yet to be solved.