



**KONGUNADU ARTS AND SCIENCE COLLEGE
(AUTONOMOUS)**

Re-accredited by NAAC with A+ grade (4th cycle)

College of Excellence (UGC)

52nd Rank Among Colleges in NIRF 2024

G.N. Mills (PO), Coimbatore - 641029.



DEPARTMENT OF COMPUTER SCIENCE (AIDED)

Industrial Visit to BSNL

Supported by

DBT STAR COLLEGE SCHEME

REPORT

Name of The Event	Industrial Visit to BSNL office, Saibaba Colony, Coimbatore
Date	03.03.2025
Time	10.00 AM
Resource Person With Designation	-----
Venue of The Programme	BSNL office , Saibaba Colony, Coimbatore.
Objectives of the Programme	• To know about the telecommunication industries • To explore to infrastructure and equipments • To understand customer service details and operations • To get awareness on emerging technologies
Outcome of the Programme	• Students acquired knowledge on working principles of telecommunication industries. • Learnt about customer service and operations and various mobile services. • Visited power Room and interacted with telecommunication personnel to know about its working process.
Number of Beneficiaries with class (Both students and faculty) Total Number of Beneficiaries	II - B.Sc Computer Science : 32 Faculties : 3 Total: 35

Report in Detail:

The BSNL personnel, Mobile switching centre discussed about GSM. GSM stands for Global System for Mobile Communication. GSM is an open and digital cellular technology used for mobile communication. It uses 4 different frequency bands of 850 MHz, 900 MHz, 1800 MHz and 1900 MHz . It uses the combination of FDMA and TDMA.

It has a number of outgoing lines to one or more nearby switching centers, called toll offices (or if they are within the same local area, tandem offices). These lines are called toll connecting trunks. If both the caller's and caller's end offices happen to have a toll connecting trunk to the same toll office (a likely occurrence if they are relatively close by), the connection may be established within the toll office. A telephone network consists only of telephones (the small dots), end offices (the large dots), and toll offices

If the caller and caller do not have a toll office in common, the path will have to be established somewhere higher up in the hierarchy. Primary, sectional, and regional offices form a network by which the toll offices are connected. The toll, primary, sectional, and regional exchanges communicate with each other via high-bandwidth intertoll trunks (also called interoffice trunks). The number of different kinds of switching centers and their topology (e.g., can two sectional offices have a direct connection or must they go through a regional office?) varies from country to country depending on the country's telephone density.

The BSNL Personnel has briefly explained about the ISO/OSI layers and demonstrated how seven layers will transform the information through signals. He explained about the fiber optic cables and co-axial cables. Fiber optics cables transmit the light waves very fastly and distortion is very less. In co-axial cable distortion is high. Further he imparted knowledge about mobile switching which includes the following concepts.

Cellular telephones comes under unguided media that is wireless medium. It has 2 types of frequencies. Sender has one type of frequency and receiver has another type of frequency. In mobile phone system the area covered is divided into small regions known as cells. It is called as cellular phones. The cells are circular but they are hexagonal in shape. Each cell has an antenna and cell office to control the cell. A Mobile Telephone Switching Office [MTSO] controls various cell offices and co ordinates the communications between them. In telephone system, the Telephone Control Office [TCO] or Telephone Exchange [TE] controls all the system. It is a wired telephone system. MTSO is responsible not only for the connections but also to transmit information and billing for calls. Typical cell radius size is 0-12 Milles. It can be changed depending on the population of the area Analog transmission is used

for cellular telephones. Frequency modulation is used for communication between mobile phone and cell office.

2G technology was a significant advancement in mobile communication, allowing users to make calls, send text messages, and even access basic internet services. Introduced in the early 1990s, **2G** networks replaced analog systems with digital signals, improving call quality and security. Although data speeds were very slow, **2G** enabled the use of MMS (Multimedia Messaging Service) and early forms of mobile internet. Over time, as faster technologies like **3G**, **4G**, and now **5G** emerged, **2G** gradually became obsolete. However, in some remote areas, **2G** is still used for basic communication where modern networks are unavailable. Many telecom providers are now shutting down **2G** networks to free up spectrum for newer technologies.

3G technology marked a major breakthrough in mobile communication by introducing faster data speeds and better connectivity. Unlike **2G**, which was primarily used for calls and text messaging, **3G** allowed users to browse the internet, stream videos, and use mobile applications more efficiently. Launched in the early 2000s, **3G** brought significant improvements in video calling, online gaming, and social media usage. It enabled smartphones to become more powerful and versatile, shaping the way people interacted digitally. However, with the rise of **4G** and **5G**, many telecom companies have started shutting down **3G** networks to focus on newer and more advanced technologies. Despite this, **3G** played a crucial role in revolutionizing mobile connectivity and paved the way for today's high-speed internet.

4G technology revolutionized mobile connectivity by providing significantly faster internet speeds and improved network reliability. Unlike **3G**, which struggled with high-definition streaming and large downloads, **4G** enabled smooth video streaming, online gaming, and real-time video calls with minimal buffering. Introduced in the late 2000s, **4G** became the standard for smartphones, allowing users to browse the web, use social media, and work remotely with ease. It also played a crucial role in the rise of app-based services like ride-sharing, food delivery, and mobile banking. As mobile networks continue to evolve, **4G** remains widely used, although **5G** is gradually taking over with even faster speeds and lower latency. However, **4G** is expected to remain in use for years, especially in areas where **5G** coverage is still limited.

