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| **SESSION** | **NOV-DEC 2023** |
| **PROGRAM** | **BCA** |
| **SEMESTER** | **III** |
| **COURSE CODE & NAME** | **DCA2104 - BASIC OF DATA COMMUNICATION** |
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**Set-I**

**1. Explain different layers of OSI model?**

**Ans 1.**

The Open Systems Interconnection (OSI) model is a conceptual framework used to understand and standardize the functions of a telecommunication or computing system without regard to its underlying internal structure and technology. Developed by the International Organization for Standardization (ISO), the OSI model divides the functions of a network into seven distinct layers. Each layer serves a specific purpose and communicates with the layers directly above and below it.

**1. Physical Layer**

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**2. Write about Line coding Techniques?**

**Ans 2.**

Line coding is a key aspect of data communication, involving the process of converting digital data into a digital signal. This method is integral to the function of various communication systems, including the internet, cellular networks, and other forms of digital telecommunications. Line coding encompasses several techniques, each with its distinct features and applications.

**Unipolar Encoding**

**3. Explain different type of errors in data transmission?**

**Ans 3.**

Data transmission errors are a critical concern in the field of data communication, as they can significantly impact the accuracy and reliability of the transmitted information. These errors occur when data is altered or lost during its journey from the sender to the receiver. Understanding the different types of errors that can occur during data transmission is essential for developing effective

**Set-II**

**4. What are the major criteria for an efficient and efficient network?**

**Ans 4.**

An efficient and effective network is crucial in the modern era of digital communication. To achieve this, several major criteria must be considered.

**1. Reliability**

Reliability is paramount in network design. An efficient network must ensure a high level of uptime, minimal data loss, and consistent performance even under stress or during unexpected circumstances. This involves

**5. Compare and contrast datagram networks and virtual circuit networks.?**

**Ans 5.**

When comparing and contrasting datagram networks and virtual circuit networks, it is essential to understand the fundamental differences in how these two types of networks handle data transmission. The primary distinction lies in how they manage network resources and data routing, each with its unique advantages and challenges.

**1. Conceptual**

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**6. Discuss the different type of mode for propagation of light along optical channels?**

**Ans 6.**

In discussing the modes of light propagation in optical channels, it is essential to delve into the fundamental concepts and types of modes that define how light travels through these mediums. Optical channels, particularly optical fibers, are pivotal in modern communication systems, providing high-speed and high-capacity transmission of information over significant distances. The understanding of light