**DV155\_Mansoor\_9\_SAS On Introduction to IP**

**Possible Answer Sheet**

1. What is Internet Protocol (IP)?

IP is a set of rules governing the format of data sent over the internet or other network.

2. What is the meaning of Encapsulation?

Encapsulation is the computer-networking process of concatenating layer-specific headers or trailers with a service data unit (i.e. a payload) for transmitting information over computer networks

3. What does TCP stand for?

Transmission Control Protocol

4. How does TCP (Transmission Control Protocol) work?

TCP protocol operations may be divided into three phases. *Connection establishment* is a multi-step handshake process that establishes a connection before entering the *data transfer* phase. After data transfer is completed, the *connection termination* closes the connection and releases all allocated resources.

5. What does UDP stand for?

User Datagram Protocol

6. How does UDP (User Datagram Protocol) work?

UDP uses a simple [connectionless communication](https://en.wikipedia.org/wiki/Connectionless_communication) model with a minimum of protocol mechanisms.

7. What is OSI Layer 4?

The Transport Layer

8. What does OSI Layer 4 - Transport Layer do?

The OSI layer 4, the transport layer, ensures reliable end-to-end communication by managing data segmentation, flow control, error detection, and correction between source and destination hosts.

9. What is Multiplexing?

Multiplexing is the process of opening multiple data streams into a single transmission channel for efficient communication over a network.

10. What is a port?

In terms of computers, a port refers to a logical endpoint for communication in a network, typically associated with a specific application or service, identified by a numerical value, allowing multiple applications to share a single physical network connection.

11. What is a Port Number?

In simple terms it helps direct incoming data to the right application or service running on a computer within a network.

12. What does IPv4 Socket consist of?

In simple terms, an IPv4 socket consists of two pieces of information: an IP address, which identifies the computer, and a port number, which specifies the application or service running on that computer. Together, they enable communication between different devices over a network.

13. What are Non-Ephemeral Ports?

In simple terms, non-ephemeral ports are fixed or reserved port numbers that are typically associated with specific services or applications running on a computer, such as port 80 for HTTP (web browsing) or port 22 for SSH (secure

14. What are Ephemeral Ports?

These are ports that are assigned temporarily.

15. What is Data Transport Analogy?

In simple terms, a data transport analogy compares the movement of data across a network to the transportation of goods from one location to another, where data packets are like packages being shipped, network devices are like transportation vehicles, and the network infrastructure is the transportation network.

16. What is Network Topology?

In simple terms, network topology refers to the physical or logical layout or arrangement of devices and connections in a computer network, similar to how roads and intersections are arranged in a city map.