**BIT 2204: NETWORK SYSTEM ADMINISTRATIONS**

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**REG NO: SCT212-0111/2022**

**ASSIGNMENT 1:**

**QUESTION:**

*In 300 words, write-up on the similarities and differences between the OSI (Open Systems Interconnection) Layer Model and the TCP/IP (Transmission Control Protocol/ Internet Protocol) Layer Model.*

**SIMILARITIES:**

* Both the models are based upon layered architecture.
* The Physical and the Data Link Layer of the OSI Model corresponds to the Network Access Layer of the TCP/IP Model.
* Both Models have the Network Layer and the Transport Layer.
* Both Models convert the raw data into packets and help them reach their destination node.
* The Application, Presentation and Sessions layer of the OSI Model corresponds to the Application layer of the TCP/IP Model.
* In both protocols are defined in a layer-wise way.

**DIFFERENCES:**

* OSI Model can be defined as a protocol independent standard that serves as a community gateway between the network and the end-user while TCP/IP Model can be defined as a protocol-dependent model that allows the connection of hosts over a network.
* In OSI Model, the session and presentation layers are separate while in TCP/IP Model, the session and presentation layers are not separate but included in the application layer.
* In OSI Model, the Data Link Layer and the Physical layers are separate while in TCP/IP Model both the Physical and Data Link Layers are combined as a single-host-to-network layer.
* OSI Model is less reliable while TCP/IP Model is more reliable.
* The OSI Model follows a vertical approach while TCP/IP Model follows a horizontal approach.
* The OSI Model has 7 layers which include; Physical, Data Link, Network, Transport, Session, Presentation and Application layers while TCP/IP Model has 4 layers namely; Network Access, Internet, Transport and Application layers.
* In OSI Model, protocols are easy to replace while in TCP/IP Model, protocols are not easy to replace.
* OSI stands for Open Systems Interconnection while TCP/IP stands for Transmission Control Protocol/Internet Protocol.
* In the OSI Model, the minimum header size is 5 bytes while in TCP/IP Model, the header size is 20 bytes.