COMP 215 MARKING SCHEME 2021 CAT 1

1. ***Role of transport layer***

* Obtains IP address of source and destination computer.
* Eliminates duplicate packets
* Breaks large data into small packets (if needed)
* Initiates and terminates logical data transfer
* Deals with end-to-end issues such as procedures for entering into the network

1. ***Factors to consider when choosing network topology***

* Type of line configuration – multitop/multipoint or Point to point
* Cost of establishment – cost of cables, hubs for star topology, droplines etc.
* Performance required – e.g. Star is faster than Ring
* Available hardware resources-servers etc.
* Scalability – ability to expand the network
* Administrative effort required

1. ***Encapsulation & explain how it is done***

* Encapsulation – process of adding information to data as it passes through layers from the sending device to the receiving device
* As data moves down through the OSI layers, header and trailer is added to the packet
* Packet header- describes packet including source and destination computers and something about what the packet contains
* Trailer identifies the end of the packet and errors that may occur

1. ***Network importance***

* Resource sharing – e.g., in offices printers can be shared since one printer can be linked to all other workstations/computers
* Communication – E.g., teleconferencing is made possible through network, also cellular telephone calls can be made e.g., from one department to another
* Directory services- it is possible for an organization to be able to access directory on websites e.g., telephone numbers and physical addresses of other organizations
* Manufacturing- in the process of manufacturing it is easier to be able to do certain tasks simultaneously e.g., Simultaneous CAD

1. ***Factors affecting performance of a network***

* Type of transmission media – fiber optic is faster than coaxial cables
* Number of users – more users lead to slower network
* Hardware – High speed computer with greater storage capacity can favor good performance
* Software – well written network software performs data processing faster hence great performance

1. ***What is a standard?***

-Standards – set of specifications for certain networking devices so that a device from one vendor can be able to communicate with another device from another vendor through a network

ISO – international standards Organization – Makes technical recommendations about data communication

IEEE – Best known for Standards of LANS (Local Area Networks)  
ANSI – American national Standards Institute – coordinating organization for US national system of technical and non-technical standards

ITU – Technical standards setting organization for telecommunication devices