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

2. ***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

3. ***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

4. ***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

5. ***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

6. ***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