**INTRODUCTION TO COMPUTER SCIENCE**

**HM 04**

**PART ONE ANSWER KEYS:**

Answer1:

As we know the three letters LAN is the abbreviation of ( local area network ) and WAN is abbreviation of (wide area network) . these are the types of computer networks that we use in our lifetime.

1. If there is two or more computers have connected to one other so there is the LAN connection .the network connections in buildings an example of this type of network connection.
2. The internet is the abvious example of the WAN connection.the WAN connection involves the combination of the LAN connections for example the network connection between cities and countries even between continents are this type of network connection.
3. VPN it is also abbreviation of (vertical private network) which is of course one of the WAN network connection and as we know this kind of networking is for the purpose of exchanging the secure datas between computers .
4. In an small office there will be the LAN network connection because they are in an small are and they have connected to each other in an small are like small office, if we tell about internet café so they also use the LAN network connection.

Answer2:

OSI model is just a logical model for how networks are communicate each other.There we go seven layers of OSI (open system interconnection) :

1. The first layer the top layer in IOS model is APPLICATION layer, a message typically originate in this model in networking .this is the layer that a user interact with. For example google chrom,fairefox, safari and etc.for example for sending email we use different kind of application which is IOS model’s involving like outlook or etc.
2. The second layer of the OSI model is presentation layer. This layer is the basically the layer that operating system is on .it interacts whit application layer and application layer sens the information to presentation layer and an other task that this layer does is converts the texts an messages that user can understand like litters and numbers. And one of the most important things that it does is ,this layer encrust data to be safe.
3. The third layer in OSI model is the **session** layer .the word (session) means like conversation ,session is like conversation between computers .this layer is responsible for starting ,maintaining and ending conversation between computers. this layer also responsible to get data from website and getting data from website occurs in this layer.
4. The forth layer in OSI model is the **transport** layer.this layer is responsible to provide an address that is compatible whit internet infrastructure.and this layer when we exchange messages in internet ,ensures us that packets are delivered reliably. when some of the protocols require the smaller piece of data so this layer will be responsible of do it .
5. The fifth layer is that I am going to talk about is the **network** layer. This layer determines the best router .there aer a lot of different ways that a data to be sent, and the network layer offers us the best and fastest router by reading special address. routers are involved in this layer.
6. The sixth layer in OSI model series is the **data** **link** layer .this layer is basically a layer that NIC’s on it.NIC means NETWORK INTERFACE CARD (one of that part of hardware).the layer data link is also has responsibility on checking for errors in networking. for example if there is and error accures in sending data then this layer going to send it back .
7. The lastest layer in OSI model is the physical layer. This model as itself indicates on it that involes the physical aspect of networking for example cables and fiber optics belong to this kind of layer. And alos electrical signals and transmission data part of this layer .

Answer3:

Differences between TCP/IP AND UDP protocols:

At first let me explain that when we use the the you tube and when we download something from you tube we use the TCP/IP protocol and the reason is that ,it is more reliable than UDP protocol when a client wants to download a video the conversation starts between client and server and this protocol executes there.so let us talk about the difference so:

One difference between TCP/IP and UDP is : when we came on live in you tube so the UDP protocol is there and if we want to download something which is not live stearming and extended so the computers use the TCP/IP protocol.

TCP is more reliable but less efficient and the other hand UDP is less reliable and more efficient. And also the UDP or user Datagram protocol connectionless end-to-end service and no flow control and no error recovery on it. and also it provides multiplexing via ports.

Answer4: