Topic 6 Computer Networks

-Network basics

1)definition of a network and its main characteristics:

Network allows two or more computers to exchange information. Main characteristics of
Network:
· Security
· Scalability
· Quality of Service
· Performance

2) classification of networks based on size and scope: PAN, LAN, MAN, WAN

There are some of classifications of networks based on size and scope:
PAN(Personal Area Networks) -a network connecting personal electronic devices of one user.
LAN(Local Area Networks) - it is a collection of devices connected together in the same
buildings.
MAN(Metropolitan Area Network) - these are high-speed connection networks that connect
multiple local networks to one large network with a common bridge.
WAN(Wide Area Networks) – have no geographical limit and may connect or LANs on opposite
sides of the world.

3) communication channels and their main types;

Communication channels - one-way data transmission from sender to receiver.
Main types of communication channels are:
· Verbal
· Written
· Non-verbal

4) network topology;

Topology is the shape of a network. There are basic physical topologies:
· Star: there is a central device to which all the workstations are connected
· Bus: every workstation are connected to a main cable called a bus
· Ring: the workstation are connected to one another in a loop
· Tree: a group of stars connected to a central bus

5) network architecture: client-to-server and peer-to-peer;

There are two main network architecture: peer-to-peer, client-server.
Peer-to-peer – all computers have the same capabilities
Client-server – one computer acts as server with the main hard disk and controlling the other
nodes.

6) network protocols

Network protocol - is a set of rules that defines the principles of interaction between devices in
a network.
IP(Internet Protocol) is the simplest protocol that unites individual computers into a global

network.
TCP helps devices on the network to exchange messages.

- Web Basics. Internet Technology

1) definition of the Internet;

Internet is an International computer Network. Internet is a worldwide system of computer networks.

2) types of the Internet connection (pros and cons);

There are some types of the Internet Connection:
Dial-up – telephone connection that working through the standard telephone lines. Cons of this type are the slow connection and busy phone line.
Broadband – high data transmission rate Internet connection. Pros: Better Connection, Easier Access. Cons: Disconnected From The Internet, Higher Cost;
ADSL (Asymmetric Digital Subscriber Line) – allows you to use the same telephone line and fast access to the Internet. Pros: high-speed connection. Cons: ADSL service is not available everywhere

3) definition of the World Wide Web;

World Wide Web is a collection of files and pages containing links to other document on the internet

4) components and technologies of the Web;

There are some of components of the Web:
HTML(Hypertext Markup Language)
CSS(Cascading Style Sheets)
HTTP(Hypertext Transfer Protocol)

5) process of accessing a website

?????????????????????????

- Internet of Things

1) definition and scale of the IoT

IoT(Internet of Things) - concept of a data transmission network between physical objects ("things") equipped with built-in tools and technologies for interacting with each other or with the external environment

2) applications of the IoT today

Inter of Things often use in Intelligent homes, Industry and transport, Healthcare

3) benefits that IoT brings;

There top main benefits of IoT:
· Effective operations management
· High level of employee safety;

· High customer service

· automation

4) problems related to the IoT and their solutions;

???????

5) future of the IoT

IoT in medicine became the most popular in. Smart home technologies will be developed. IoT will allow you to track the physical condition of athletes. There will be more smart cities and technologies associated with them