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Panel - C

Subject - Computer Networks

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CN Theory Assignment-1

Q1) Explain in short, various networking devices and their usage.
 → Networking devices are Repeaters, Hubs, Bridges, Switches, Routers and Gateways.

i) Repeater:-

- A repeater operates at the physical layer.
- A repeater receives a signal and before it becomes too weak or corrupted, regenerates the original bit pattern.

ii) Hub:

- Hub is used to connect devices to the same network.
- Hubs cannot filter data, so data packets are sent to all connected devices.

iii) Bridge:

- A bridge operates at data link layer.
- It is also used for interconnecting two LANs working on the same protocol.

iv) Switch:

- A switch is a data link layer device.
- It is an intelligent network device that can be conceived as a multiport network bridge.
- It uses MAC addresses to send data packets to selected destination ports.

v) Router:

- Routers operate at the Network layer (layer 3)
- Interconnect IP Networks.

vi) Gateway:

- A gateway is simply a device or hardware that acts a 'gate' between the networks. We can also define it as a node that acts as an entry for other Network nodes.

Q2] Identify the real world uses of various data transmission media.

Ans → Guided media:-

i) Twisted-pair cable - It is a type of cabling that is used for telephone communications and most modern ethernet networks. Also used in different areas like DSL lines, security camera system, LAN's, etc.

ii) Coaxial cable :- Coaxial cable are used as transmission lines for radio frequency, video and data signals. They have traditionally been used as feed lines to connect radio transmitter and receivers with antennas, internet connections, digital audio and cable television signals.

ii) Fibre optic cables:- It is used by telecommunications companies to transmit telephone signals, internet communications and cable television signals

Unguided Media:

i) Radio waves:

Radio waves are used for multicast communications, such as radio and t.v, and paging systems.

ii) Microwaves:

It is used for unicast communication such as cellular telephones, satellites networks and wireless LAN's.

iii) Infrared:

It is used for short-range communications such as those between a PC and a peripheral device.

Example: Indoor LAN's.

TV remote operation

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