SIMATS ENGINEERING

ASSIGNMENT - 02

CSA0735: COMPUTER NETWORKS

REGISTED NUMBER	NAME	SCENARIO
192511172	SAMRAKSHINI.G	An old building uses token ring for local communication between devices.

QUESTIONS :

A) HOW DOES TOKEN PASSING ENSURE FAIR ACCESS IN THIS SYSTEM ?

→ In a token ring network, a specific token frame called a "TOKEN" circulates continuously among all the connected devices in a logical ring.

→ Only the devices that captures the token is permitted to transmit data at that moment.

THIS MECHANISM :

→ Prevents collissions, since only one device transmits at a time.

→ Guarantees "equal access", as the token is passed sequentially.

→ Ensures deterministic communication, unlike Ethernet where access is based on chance. [CSMA/CD]

Hence, it ensures predictable and fair access, especially in time-sensitive applications.

B) WHAT ARE THE DRAWBACKS COMPARED TO ETHERNET ?

While Token ring was designed for fairness, it has several disadvantages when compared to Ethernet.

- **LOWER SPEED :** Token ring operated typically at 4 OR 16 MbPS, whereas Ethernet supports much higher speeds 100MbPS / 1 GbPS OR More.
- **HIGHER COST :** Specialized hardware and connectors make Token ring more expensive to install and maintain.
- **COMPLEXITY :** The token mechanism and ring structure are harder to troubleshoot and manage.
- **FAILURE VULNERABILITY :** A fault in a single device or token corruption can distrupt the entire network.
- **LESS SCALABLE :** Adding or removing devices is more disruptive than in Ethernet networks.

In contrast, Ethernet is ;

- SIMPLER
- CHEAPER
- FASTER
- MORE WIDELY ADOPTED TODAY