LAB Assignment – 03

Title:- Virtual LAN

Aim: Design & configure a virtual LAN using Packet Tracer.

Objectives :-
i) To understand concept of VLAN and implement it using packet Tracer.

Theory:-
1) What is VLAN?
→ VLAN is a logical overlay network that groups together a subset of devices that share a physical LAN, isolating traffic for each group.

Collision Domain.
Collision domain is network segment connected by a Shared medium or through repeaters where simulaneou data transmissions collide with one another.

3) Broadcast Domain:-
A broadcast domain is a logical division of a computer network in which all nodes can reach each other by broadcast at the data link layer.

4) Collision Domain & Broadcast Domain in networking devices (Hub, switch & Router).
→ A network collision occurs when more than one device attempts to send a packet on a network segment at the same time. A broadcast domain is a logical

division of a computer network, in which all nodes can read each other by broadcast at data link layer.

5) Access Port and Trunk Port.

→ The purpose of a tagged or 'trunked' port is to pass traffic for multiple VLAN's, whereas an untagged or "access" port accepts traffic for only a single VLAN.

• Students Observation:-
Thus, we have designed & configured a virtual LAN using Packet Tracer.

* FAQs.

1) What is the need of VLANs?

→ VLANS allow networking administrators to automatically limit access to a specified group of users by dividing workstations into different isolated LAN segments. When users move their workstations, administrators don't need to reconfigure the network or change VLAN group.

2) What is the difference between VLAN access and trunk mode?

→ A trunk port allows you to send all those signals for each switch or router across a single trunk link. In contrast to an access port, a trunk port must we tagging in order to allow signals. to get to correct endpoint

3) Enlist different Network simulator tools like cisco packet tracer.

→ 1) Boson Netsim.

2) CINS3

3) VIRL

4) EVE-NG

4) Differentiate LAN and VLAN.

→ LAN stands for Local area network is a group of network device which allow the communication between connected device.

On other hand VLAN stands for virtual local Area Network which is used to enchance, the performance of LANs