SUBJECT – COMPUTER NETWORKS

LAB – 02

1.Give the difference between below network devices

* HUB and SWITCH

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| **Features** | **HUB** | **SWITCH** |
| Function | Acts as a repeater, receiving data from one port and broadcasting it to all other ports. | Analyzes the destination MAC address of data packets and forwards them only to the appropriate port. |
| Cost | Generally less expensive than a switch. | Generally more expensive than a switch. |
| Security | Less secure as all data is broadcast to all connected devices. | More secure as it only forwards data to the intended recipient. |
| Addressing | Doesn't have a MAC address table and doesn't recognize individual device addresses.. | Maintains a MAC address table, allowing it to intelligently forward data to the correct device. |
| Speed | Speed of original hub 10Mbps and modern internet hub is 100Mbps. | Maximum speed is 10Mbps to 100Mbps. |
| Transmission Type | Hub is a broadcast type transmission. | Switch is a Unicast, multicast and broadcast type transmission. |

* SWITCH and ROUTER

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| **Features** | **SWITCH** | **ROUTER** |
| Objective | The main objective of router is to connect various networks simultaneously. | While the main objective of switch is to connect various devices simultaneously. |
| Usage | Router is used by LAN as well as MAN. | switch is used by only LAN. |
| Collision | There is less collision taking place in the router. | there is no collision taking place in full duplex switch. |
| Addressing | Doesn't have a MAC address table and doesn't recognize individual device addresses.. | Maintains a MAC address table, allowing it to intelligently forward data to the correct device. |
| Speed | Speed of original hub 10Mbps and modern internet hub is 100Mbps. | Maximum speed is 10Mbps to 100Mbps. |
| Transmission Type | Hub is a broadcast type transmission. | Switch is a Unicast, multicast and broadcast type transmission. |

* ROUTER and GATEWAY

2. Working of below network devices

* SWITCH
* ROUTER
* GATEWAY