Date: December 06, 2024

Course Instructor

Ms. Saba Tariq

Total Time (min): **20**

Total Marks: **20**

Total Questions: **2**

Solutions

_____   _____
Roll No   Section

_____
Student Signature

Do not write below this line

Attempt all the questions.

Q1: You are the network administrator for a small organization that has been assigned the IP address block **100.16.27.0/25**. Your task is to subnet this block to fulfill the following requirements:

1. **Department A needs 40 hosts.**
2. **Department B needs 30 hosts.**
3. **Department C needs 20 hosts.**
4. **Department D needs 10 hosts.**

$$
\begin{array}{r}
128 \\
16 \\
\hline
144 \\
\hline
\end{array}
$$

- Calculate the subnet mask for each department based on the number of hosts required.
- Assign the appropriate subnet range to each department.
- Provide the **network address, broadcast address**, and **usable IP range** for each subnet.
- Ensure that no IP address is wasted and that the subnets do not overlap.

B/

A:	Network add: 100.16.27.0/26
	IP Range: 100.16.27.1 — 100.16.27.62
	Broadcast add: 100.16.27.63/26
	Subnet mask: 255.255.255.192
B:	Network add: 100.16.27.64/27
	IP Range: 100.16.27.65 — 100.16.27.94
	Broadcast add: 100.16.27.95/27
	subnet mask: 255.255.255.224
C:	Network add: 100.16.27.96/27
	IP Range: 100.16.27.97 — 100.16.27.126
	Broadcast add: 100.16.27.127/27
	subnet mask: 255.255.255.224
D:	No assignable IP add. for department D.