Question

Consider a network of a software company with four routers: R1, R2, R3, and R4. Each router is connected to its adjacent routers as follows:

R1 is connected to R2 and R3.

R2 is connected to R1 and R4.

R3 is connected to R1 and R4.

R4 is connected to R2 and R3.

Now R1,R2,R3 and R4 routers are connected to some sub-networks of HR, System analysis, Testing and Admin departments of the company with numbers of required hosts being 630, 78, 530 and 30. The starting address will be 192.168.2.0.

1. Solve the problem and required subnet allocation using the concept of VLSM (Submit the scanned copy of your VLSM solution in pdf)

1 No Answer

Subnet	Num of Requ ired IP	Bits to Borrow	No of allocated IP	No of host bits & No of Net bits	Subnet Mask	Wildcard Mask	Allocated IP Range
R1 HR	630	$2^{10}>630>2^9$	1024	$x=10$ $y=22$	255.255.252.0	0.0.3.255	192.168.2.0-192.168.5.255/22
R3 T	530	$2^{10}>530>2^9$	1024	$x=10$ $y=22$	255.255.252.0	0.0.3.255	192.168.6.0-192.168.9.255/22
R2 SA	78	$2^7>78>2^6$	128	$x=7$ $y=25$	255.255.255.128	0.0.0.127	192.168.10.0-192.168.10.127/25
R4 A	30	$2^5>30>2^4$	32	$x=5$ $y=27$	255.255.255.224	0.0.0.31	192.168.10.128-192.168.10.159/27
A	4	$2^2=4$	4	$x=2$ $y=30$	255.255.255.252	0.0.0.3	192.168.10.160-192.168.10.163/30
B	4	$2^2=4$	4	$x=2$ $y=30$	255.255.255.252	0.0.0.3	192.168.10.164-192.168.10.167/30
C	4	$2^2=4$	4	$x=2$ $y=30$	255.255.255.252	0.0.0.3	192.168.10.168-192.168.10.171/30

D	4	$2^2 = 4$	4	$x = 2$ $y = 30$	255.255.255.252	0.0.0.3	192.168.10.172-192.168.10.175/30