Page No.
Date :

13/12/21

KHUSHI JAIN
204024

SET = 22

Final Practical Exam 2021

Sol ② (a) 135.46.63.10

Taking the first 22 bits of 135.46.63.10 as network address, we have 135.46.60.0. The bit pattern of 135.46.63.10 is
10000111.00101110.00111111.00001010

When we perform the bit and operation with 22 leading bit 1s and 10 bit 0s, it is equivalent of making the last 10 bit zero. We get the following network address bit pattern:
10000111.00101110.00111100.00000000

The first two bytes are not changed. The 3rd type changes from 63 to 60 while the 4th byte becomes zero.
Matching with the network address in the routing table. The 2nd row matches. The router will forward the packet to Interface 1.

Page No.
Date :

(b) 135.46.57.14

Change to binary,

10000111.00101110.00111001.00001110

mask → 11111111.11111111.11111100.00000000 (AND)
with /22

10000111.00101110.00111000.00000000

↳ In decimal → 135.46.56.0

∴ The packet will be forwarded to interface 0

Page No.
Date :

(c) 135.46.52.2

Change to binary

10000111.0010 1110.00110100.00000010
/22→ 11111111.11111111.11111100.00000000 AND

10000111.00101110.00110100.00000000

↳ In decimal → 135.46.52.0

Since it does not match with the network address of first three rows.

∴ The packet will be forwarded to default gateway which is Router 2

(d) 192.53.40.7

Change to binary,

11000000.00110101.00101000.00000111
/23→ 11111111.11111111.11111110.00000000 AND

11000000.00110101.00101000.00000000

↳ In decimal → 192.53.40.0

∴ The packet will be forwarded to Router 1

Page No.
Date :

(e) 192. 53. 56. 7

Change to binary,

11000000. 00110101. 00111000. 00000111
23→ 11111111. 11111111. 11111110. 00000000
AND

11000000. 00110101. 00111000. 00000000

↳ In decimal → 192. 53. 56. 0

Since, it does not match with the network address of the first three rows,

∴ The packet will be forwarded to default gateway which is Router 2