

Question 1:

$10.1.5.65 \left\{ \begin{array}{l} 10.1.5.64/28 \\ 10.1.5.64/29 \leftarrow \text{prefix match} \\ 10.1.5.64/27 \end{array} \right.$

$10.1.5.64/29 \rightarrow \text{next hop is } 10.1.3.3$

Question 2:

Packet address = 131.23.151.76

$131.16.0.0/12 = 255.240.0.0 \text{ AND } 131.23.151.76$   
 $= 131.16.0.0 \quad (3)$

$131.28.0.0/14 = 255.252.0.0 \text{ AND } 131.23.151.76$   
 $= 131.20.0.0 \quad (5)$

$131.19.0.0/16 = 255.255.0.0 \text{ AND } 131.23.151.76$   
 $= 131.23.0.0 \quad (2)$

$131.22.0.0/15 = 255.254.0.0 \text{ AND } 131.23.151.76$   
 $= 131.22.0.0 \quad (1)$

Both match so prefix matching chooses output interface identifier no. 1