(1) What is the difference between “routing protocols” and “routing algorithms”?

Routing protocols are the set of rules for routers to exchange their routing information (their routing tables). While a routing algorithm is a mathematically defined procedure to calculate the best (shortest) path to each known destination.

(2) Sketch “cross-bar switch”.

source: www.tutorialspoint.com
(3) What is “routing table”? Mention one example for “routing table”.

Routing table is a data structure that holds the result of path calculations from the routing algorithm and/or the routing information a router learned from other routers, using a routing protocol. BGP routing table is one of the examples.

(4) Provide a sketch of “switching table”.

On slide #23:

<table>
<thead>
<tr>
<th>Dest. MAC</th>
<th>Port#</th>
</tr>
</thead>
<tbody>
<tr>
<td>4A3D</td>
<td>1</td>
</tr>
</tbody>
</table>

Note: Make sure your sketch for a switching table consists of at least the (destination) MAC address and the outgoing port number associated to each destination MAC address.

(5) Why are “layer-3 switches introduced?”

Take advantages of speed of switches and “no broadcast” of routers