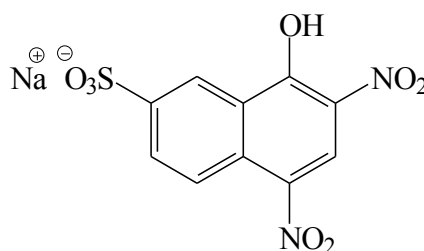
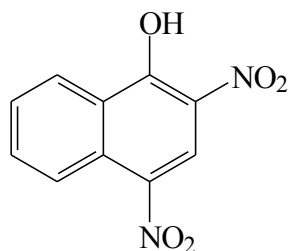


Marks
3

- Consider the following two compounds.



(I) Martius Yellow (II) Naphthol Yellow S

On ingestion of compound (I), death from liver failure occurs very quickly. In contrast, compound (II) is completely non-toxic and is used as an artificial colouring agent. Explain, using the model of biological membranes, why (I) is highly toxic.

Naphthol Yellow S is water soluble, so does not pass through the cell membrane. The hydrophilic region of the lipid bilayer acts as an impermeable barrier.

Martius Yellow is non-polar so may pass through the cell membrane. It can either disrupt the function of the cell membrane itself, or pass into the cell and damage the various parts of the liver cells.

3

- Give three examples of colloids in biological systems, and complete the following table. Paint is given as an example of a synthetic (non-biological) system.

Name of colloid	Discrete phase	Continuous phase
<i>paint</i>	<i>synthetic polymer</i>	<i>water</i>
blood	red blood cells	water/plasma
milk	casein	water
cell	nucleus, ribosomes etc	cell fluid/ctyoplasm