

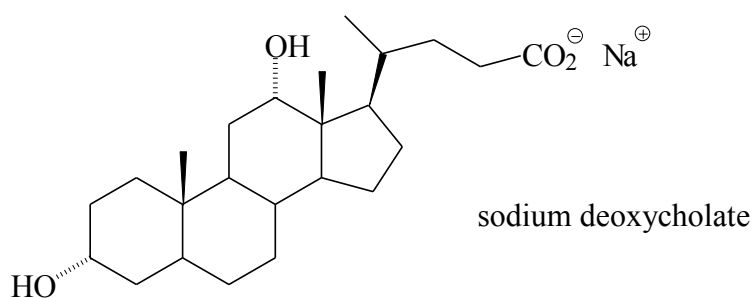
Marks
3

- 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>

3

- One of the components of bile acid is sodium deoxycholate, whose structure is given below.



Which one of the following terms: *electrostatic*, *electrosteric* or *steric*, best describes the way sodium deoxycholate functions to solubilise fats. Give a brief explanation.

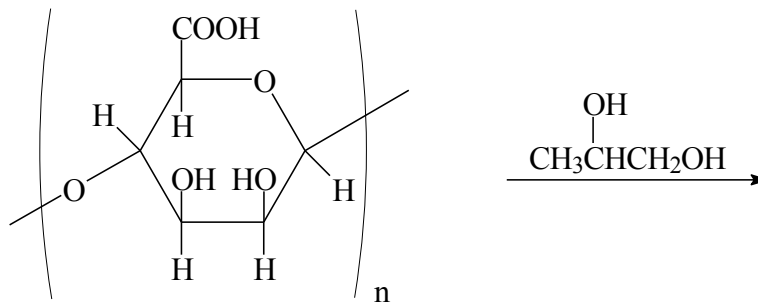
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- Alginates are high molecular weight polysaccharides extracted from seaweed. The surface active agent with the common name "propylene glycol alginate" is used as a thickener in foodstuffs. It is made by esterifying approximately 80% of the carboxyl units of the polysaccharide with 1,2-propanediol depicted, in part, below.

2



Explain in terms of its two components (the polysaccharide and 1,2-propanediol) why the ester functions as (a) a surfactant and (b) a thickener.

- Describe how hydrophilic and hydrophobic colloids are stabilised in water.

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- Describe how the addition of an electrolyte can alter the state of a colloidal dispersion.

Marks
2

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- Explain why surface effects are important in colloidal systems.

2

- Explain how soap acts to remove oil.

Marks**2**

- Describe two alternative methods by which a colloidal suspension could be stabilised, and one by which a stable suspension could be destabilised.

3