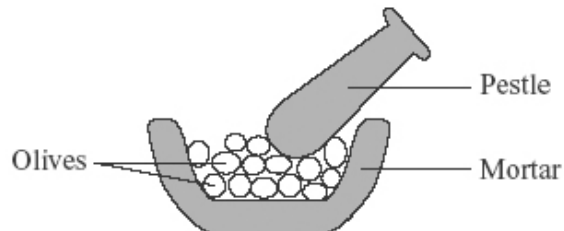


Q1. A vegetable oil can be extracted from olives.

(a) The diagram shows the first step in this extraction.



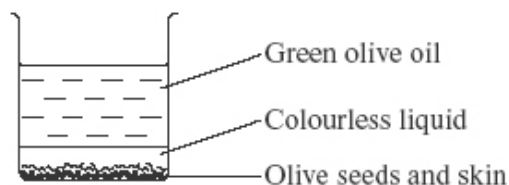
Use the correct word from the box to complete the sentence about this first step.

evaporating	filtering	pressing
--------------------	------------------	-----------------

The olive oil is extracted by the olives.

(1)

(b) The contents from the mortar are tipped into a beaker. The mixture is left to settle.



(i) What is the name of the colourless liquid?

.....

(1)

(ii) How can the olive seeds and skins be removed from the liquids?

.....

.....

(1)

(Total 3 marks)

- Q2.** The label on a bottle of salad dressing shows that the dressing contains the following ingredients.

Ingredients	
Water Vegetable oil Egg yolk Sugar Flour Vinegar Salt	Extract of spices Preservative E202 Emulsifier E405

- (a) One of the main ingredients in salad dressing is vegetable oil.
- (i) Use the correct word from the box to complete the sentence about the extraction of vegetable oil.

crushed	evaporated	hardened
----------------	-------------------	-----------------

To extract the vegetable oil, the fruits or seeds of plants are first

.....

(1)

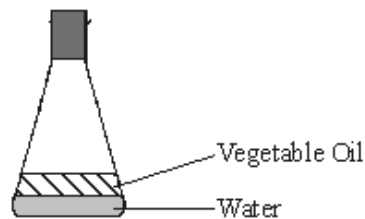
- (ii) The liquids can be separated from the solid parts of the fruits or seeds by filtering.
Suggest **one** reason why separation by filtering is better than separation by distilling.

.....

.....

(1)

- (b) (i) A mixture of vegetable oil and water is shaken and left to stand for several minutes.
The diagram shows the result.



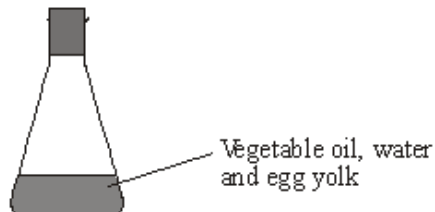
Complete the following sentence.

The vegetable oil and water

(1)

- (ii) A mixture of vegetable oil, water and egg yolk is shaken and left to stand for several minutes.

The diagram shows the result.



Use words from the box to complete the sentence.

additive	distil	emulsion	extract	mix	separate
-----------------	---------------	-----------------	----------------	------------	-----------------

The egg yolk causes vegetable oil and water to
and form an

(2)
(Total 5 marks)

Q3. Use the correct words from the box to complete the sentences.

higher	hydrogen	lower
oxygen	saturated	unsaturated

- (i) Animal and vegetable oils that contain fats can be hardened.

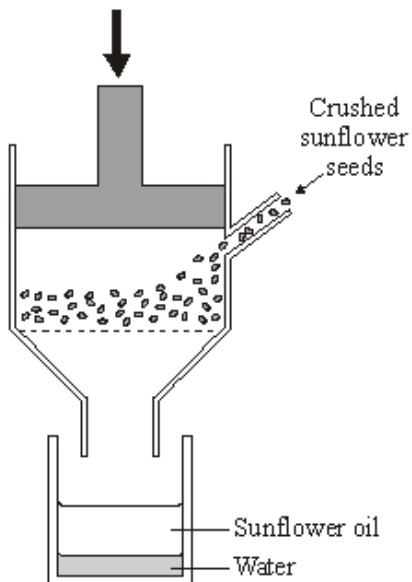
(1)

- (ii) When oils are hardened with gas, a chemical change takes place, producing margarine which has a melting point than the original oil.

(2)
(Total 3 marks)

Q4. An advert for crisps claims that they now contain only 30% saturated fat because they are cooked in sunflower oil.

(a) The oil is extracted from sunflower seeds. The diagram shows how this can be done.



Draw a ring around the correct word in each box to complete the sentences.

(i)

The oil is obtained from crushed sunflower seeds by

evaporating.
filtering.
pressing.

(1)

(ii)

The oil does not

burn
dissolve
melt

in water.

(1)

(b) Draw a ring around the correct word in the box to complete the sentence.

Carbon carbon double bonds in sunflower oil can be detected

by reacting with

bromine.
iron.
oxygen.

(1)

- (c) Water has a boiling point of 100 °C. Sunflower oil has a boiling point above 232 °C.
Suggest why sunflower oil and not water is used to make crisps from thin slices of potato.

.....

.....

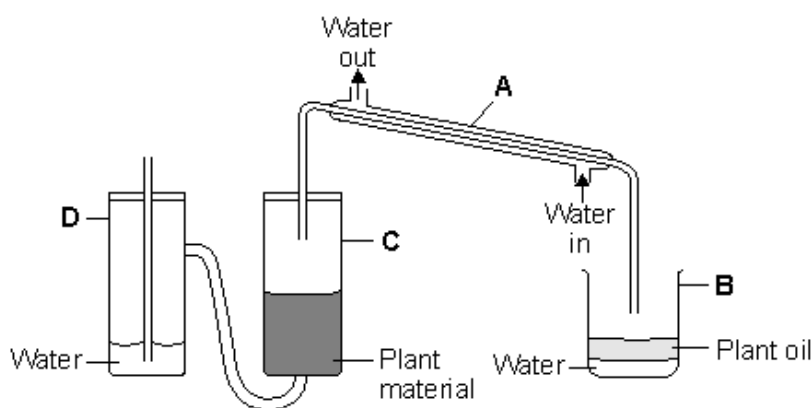
.....

.....

(2)
(Total 5 marks)

Q5. Many plants produce useful oils.

- (a) The diagram shows some apparatus used to obtain oil from plant material.



Four parts of the apparatus are labelled, **A**, **B**, **C** and **D**.

Use the information in the diagram to complete the sentences.

Steam is made in part .

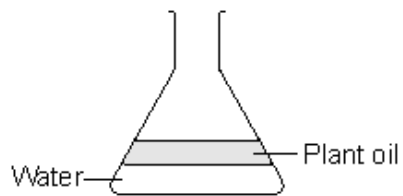
Oil from the plant material is vaporised in part .

Steam and oil vapour are condensed in part .

(3)

(b) A student investigated a mixture of a plant oil and water.

(i) A mixture of the plant oil and water was shaken and left to stand for 10 minutes.



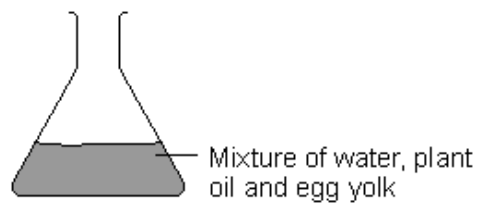
Draw a ring around the correct answer to complete the sentence.

The plant oil separates from the water because it

dissolves.
floats.
sinks.

(1)

(ii) A mixture of the plant oil, water and egg yolk was shaken and left to stand for 10 minutes. The mixture did not separate.



Draw a ring around the correct answer to complete the sentence.

The plant oil, water
and egg yolk make

a compound.
an emulsion.
a fat.

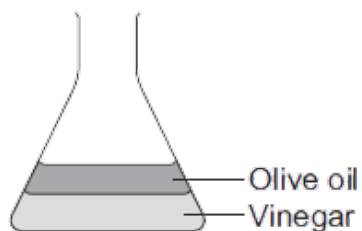
(1)

(Total 5 marks)

Q6. Olive oil is used to make salad dressings and margarine.

- (a) Vinegar is often used in salad dressings.
Vinegar contains 95% water and 5% ethanoic acid.
- (i) To make a simple salad dressing add olive oil to vinegar and shake.
After a few minutes the mixture separates.

Simple salad dressing



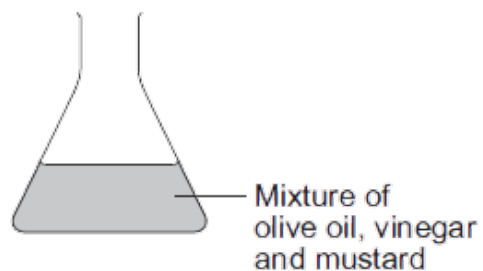
Tick (✓) **one** reason why the olive oil separates above the vinegar.

Reason	Tick (✓)
Olive oil does not dissolve in vinegar.	
Olive oil has a higher density than vinegar.	
Olive oil has a higher boiling point than vinegar.	

(1)

- (ii) To make a French salad dressing add mustard to the olive oil and vinegar and shake.
After several minutes the mixture does **not** separate.

French salad dressing



The olive oil, vinegar and mustard mixture does **not** separate.
Give **one** reason why.

.....
.....

(1)

- (b) Olive oil contains *unsaturated* compounds. Olive oil can be hardened to make margarine.



- (i) Draw a ring around the correct answer to complete the sentence.

Unsaturated compounds contain

double
ionic
metallic

carbon-carbon bonds.

(1)

- (ii) Draw **one** line from the test that would detect unsaturated compounds to the result of the test.

Test	Result of test
Add bromine water	Turns cloudy
Add limewater	Turns colourless
Add water	Turns orange

(1)

- (c) Olives grow on trees.
When olive oil is burned it produces carbon dioxide.

- (i) Burning olive oil as a fuel is said to be 'carbon neutral'.
Suggest why.

.....
.....

(1)

- (ii) Olive oil is too expensive to use as biodiesel fuel.
Suggest another reason why olive oil should **not** be used as a fuel.

.....
.....

(1)
(Total 6 marks)

- Q7.** (a) Crude oil is a mixture of compounds.
These compounds are made up of hydrogen and carbon atoms only.

- (i) Draw a ring around the correct answer to complete the sentence.

Compounds made up of carbon and hydrogen atoms only are called

alcohols.
hydrocarbons.
vegetable oils.

(1)

- (ii) The table shows five of these compounds.

Compound	State at room temperature (20 °C)	Boiling point in °C
ethane, C ₂ H ₆	gas	– 89
butane, C ₄ H ₁₀	gas	0
hexane, C ₆ H ₁₄	liquid	+69
pentadecane, C ₁₅ H ₃₂	liquid	+270
heptadecane, C ₁₇ H ₃₆	solid	+302

Tick (✓) **two** correct statements about the five compounds.

Statement	Tick (✓)
ethane has the smallest molecules	
hexane and pentadecane are liquid at 100 °C	
heptadecane has the highest boiling point	
butane boils at 100 °C	

(2)

(iii) Draw a ring around the correct answer to complete each sentence.

Fractional distillation is used to separate the compounds in crude oil.

The first step in fractional distillation is

cracking
displacing
evaporating

the crude oil.

During fractional distillation the compounds

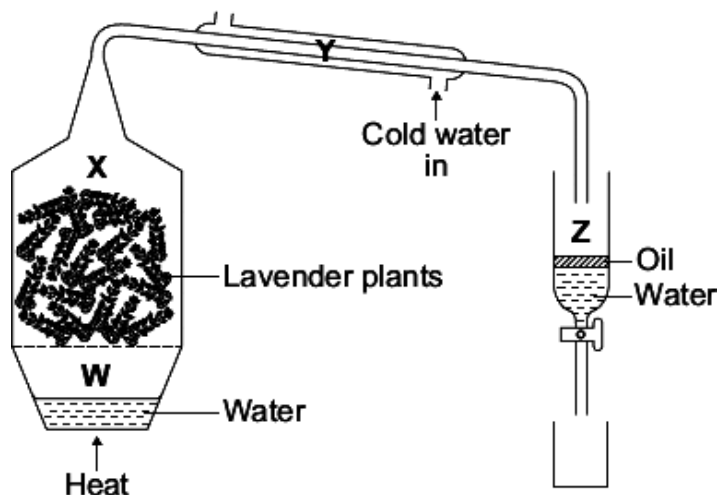
burn
condense
decompose

at different temperatures.

(2)

- (b) Steam distillation is used to separate oils from plants.

The diagram shows some apparatus that can be used to separate oil from lavender plants. Four parts of the apparatus are labelled **W**, **X**, **Y** and **Z**.



- (i) In which part, **W**, **X**, **Y** or **Z**, of the apparatus:

is steam produced

☐

are steam and oil condensed?

☐

(2)

- (ii) Use the correct word from the box to complete the sentence.

dissolves	floats	sinks
------------------	---------------	--------------

When the oil separates from the water, the oil

(1)

- (iii) Describe how part **Z** of the apparatus can be used to remove the water from the oil.

.....

(2)

(Total 10 marks)

- Q8.** Large amounts of cholesterol in the blood can cause heart disease.
Eating saturated fat increases the amount of cholesterol in blood.
Eating polyunsaturated fat decreases the amount of cholesterol in blood.

- (a) The amounts of saturated fat and polyunsaturated fat in different types of margarine are shown in the table.

Type of margarine	Description	Saturated fat g per 100 g margarine	Polyunsaturated fat g per 100 g margarine
W	Hard margarine from animal and vegetable oils	30	14
X	Soft margarine from animal and vegetable oils	27	16
Y	Hard margarine from vegetable oils only	30	10
Z	Soft margarine from vegetable oils only	26	18

Which type of margarine would you consider best to use to lower blood cholesterol?

Explain your answer.

Best type of margarine to use is

Explanation.....

.....

.....

.....

(2)

- (b) Use the correct words from the box to complete the sentences.

higher	hydrogen	lower
oxygen	saturated	unsaturated

Animal and vegetable oils that contain fats can be hardened.

Oils are hardened by a chemical reaction with gas.

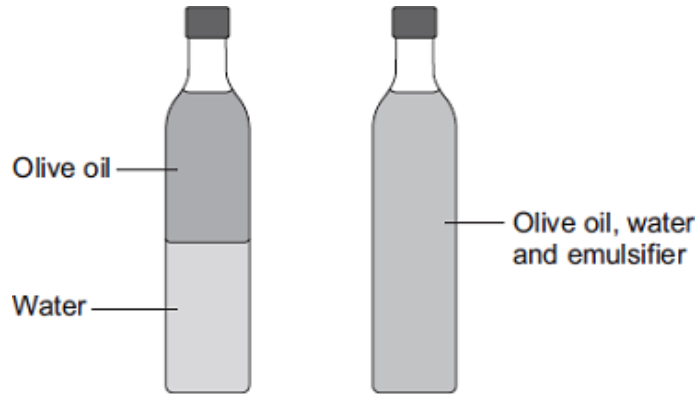
The product of the chemical reaction has a melting point than the original oil.

(3)

(Total 5 marks)

Q9. Olive oil has a high content of healthy, unsaturated fats.

- (a) Olive oil and water do not mix.
A salad dressing is made by shaking olive oil and water with an emulsifier.



- (i) Complete the sentence.

The salad dressing of olive oil, water and emulsifier is a mixture

called an

(1)

- (ii) Give **one** benefit of using emulsifiers in food.

.....

.....

(1)

- (b) Olive oil has a boiling point of 300°C.

- (i) Complete the sentence.

The boiling point of olive oil compared to the boiling point of water

is

(1)

- (ii) Apart from colour, state **two** ways in which a food cooked in olive oil will be different to a food cooked in water.

.....

.....

.....

.....

(2)

Q10. Some fruits, seeds and nuts are sources of vegetable oils.

The table gives some information about three types of vegetable oil.

	Corn oil	Olive oil	Rapeseed oil
Saturated fat in %	14.4	14.3	6.6
Unsaturated fat in %	81.2	81.2	88.6
Melting point in °C	-18 to -5	-12 to -6	-10 to +5
Smoke point in °C	229 to 268	204 to 210	230 to 240

The smoke point is the temperature range at which the oil begins to produce smoke when heated.

(a) Use information from the table above to answer these questions.

(i) Tick (✓) **one** correct reason why a vegetable oil has a range for the melting point.

Reason	Tick (✓)
A vegetable oil has a high percentage of unsaturated fat.	
A vegetable oil has a range for the smoke point.	
A vegetable oil has a mixture of fats.	

(1)

(ii) Complete the sentence.

The type of vegetable oil with the largest temperature range of smoke point is

.....

(1)

(b) Bromine water was added drop by drop to 5 cm³ of each type of vegetable oil.

(i) Draw a ring around the correct answer to complete the sentence.

The colour of the first drop of bromine water changes from orange to

colourless.
green.
white.

(1)

- (ii) Which type of vegetable oil will react with the most drops of bromine water?

Give a reason for your answer.

.....

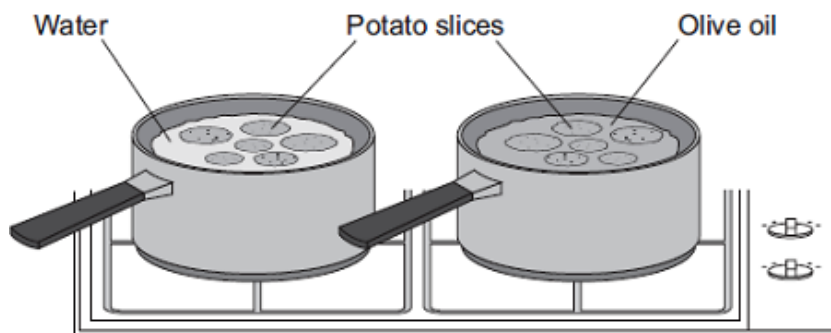
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(2)

- (c) Potato slices can be boiled in water or fried in olive oil.



- (i) Olive oil starts to produce smoke when heated to 204°C.
The smoke contains carbon particles.

Suggest what happens to molecules in olive oil to produce carbon particles.

.....

.....

(1)

- (ii) Potato slices boiled in water will be different from potato slices fried in olive oil.

Describe **two** differences.

.....

.....

.....

.....

(2)

(Total 8 marks)

