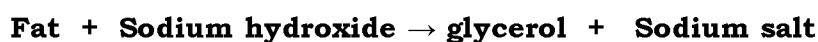


**Soap and Detergent**

**[MRSM03-12]** The industrial process of soap making is known as

- A polymerization
- B esterification
- C saponification
- D sulfonation

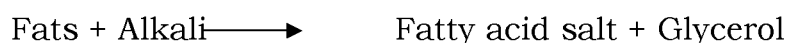
**[SPM09-25]** The following equation shows a chemical reaction



What type of reaction is this?

- A Neutralization
- B Esterification
- C Saponification
- D Fermentation

**[SPM08-29]** The following equation represents a reaction.



What is the name of the reaction?

- A Fermentation
- B Esterification
- C Saponification
- D Vulcanization

**[SBPTrial08-25]** In the saponification process, concentrated sodium hydroxide solution is added to boiling vegetable oils to produce X and soaps. What is X?

- A Ethanol
- B Glycerol
- C Propanol
- D Butanoic acid

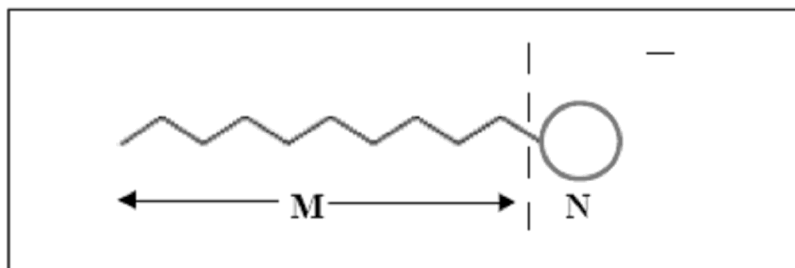
**[SPM04-18]** The information shows a part of the structural formula of a soap molecule



Which of the following is the name of that part?

- A lauric
- B glycerol
- C palmitate
- D alkylbenzene

[MRS06-20] The diagram shows the structure of a soap ion.



Which of the following is true about M when soap is used to clean greasy stain?

- A M is alkaline
- B M is hydrophilic
- C Soluble in grease
- D Reduce the surface tension of water

[MRS07-18] Diagram 8 shows the structure of a palmitate ion.

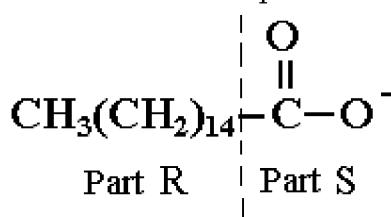


Diagram 8

Which of the following statements is true?

- A Parts R and S are soluble in water
- B Parts R and S are soluble in grease
- C Part R is soluble in grease and part S is soluble in water
- D Part R is soluble in water and part S is soluble in grease

[SPM03-31] Diagram 9 shows the structure of a soap ion.

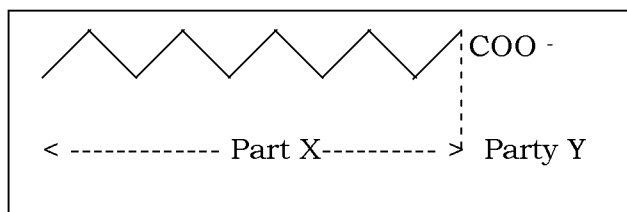


Diagram 9

Based on Diagram 9, which of the following statements is true?

- A Parts X and Y are soluble in water
- B Parts X and Y are soluble in grease
- C Parts X is soluble is grease and part Y are soluble in water
- D Parts X is soluble is water and part Y is soluble in grease

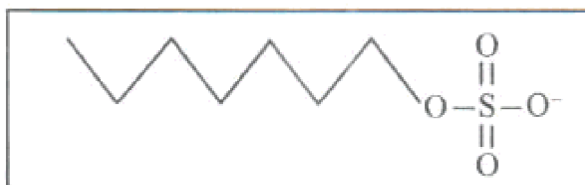
[SPM2010-50] Why is sodium chloride used in the preparation of soap?

- A To speed up the reaction to produce soap
- B To produce soap which foams easily
- C To reduce solubility of soap
- D To make soap softer.

[SBPTrial2010-13] Which substance is **not** a required to prepare soap?

- A sodium chloride
- B sodium hydroxide
- C glycerol
- D tripalmitin

[SPM08-19] Diagram 1 shows the structural formula of substances.



What is the substance?

- A Soap
- B Detergent
- C Sulphuric acid
- D Carboxylic acid

[SBPTrial09-26] Diagram 8 shows the structure of a detergent ion.

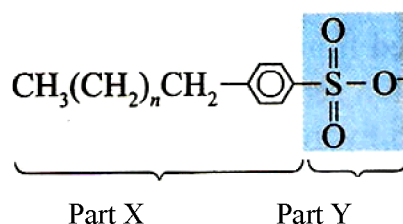
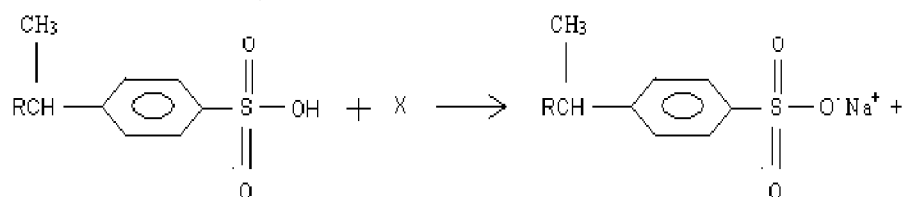


Diagram 8

Which of the following statements explains the diagram?

- A Parts X and Y are soluble in water
- B Parts X and Y are soluble in grease
- C Part X is soluble in grease and part Y is soluble in water
- D Part X is soluble in water and part Y is soluble in grease

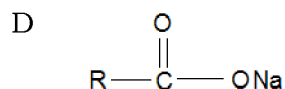
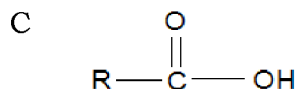
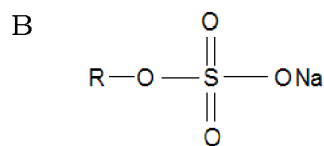
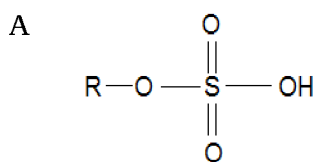
[MRSM07-33] The following equation represents the preparation of detergent.



What is the pH value for solution X?

- A 2
- B 7
- C 9
- D 14

**[SBPTrial08-13]** Which of the following structural formulas is of soap?



**[SBPTrial11-26]** Why detergents more effective than soaps?

- A Detergents are biodegradable whereas soaps are non-biodegradable.
- B Detergents reduce the surface tension of water, whereas soaps do not.
- C Detergents do not form scum in hard water, whereas soaps form scum.
- D Detergents are soluble in grease, whereas soaps are insoluble in grease.

**[MRSM05-35]** The cleansing effect of detergent is more effective in hard water compared to soap because detergent .....

- A forms a soluble salt with metal ion in hard water
- B has hydrophobic part which is more soluble in hard water.
- C has hydrophilic part which is more soluble in water
- D has hydrocarbon chain which makes detergent dissociate less in hard water

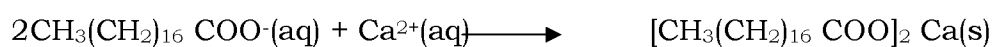
**[SPM06-34]** Which of the following is true about soap or detergent?

- A Detergent form scum in hard water
- B Soap form scum in soft water
- C Scum decreases the effectiveness of the cleansing action of soap
- D The presence of magnesium ions in detergent forms scum

**[SPM11-12]** Which statements are correct about soap and detergent?

	<b>Soap</b>	<b>Detergent</b>
A	Contains acid	Contains alkali
B	Effective in hard water	Less effective in hard water
C	Made from vegetable oil	Made from petroleum
D	Does not form scum in hard water	Forms scum in hard water

**[SPM06-35]** The following chemical equation shows the reaction between stearate ions,  $\text{CH}_3(\text{CH}_2)_{16} \text{COO}^-$  and alkyl sulphate ions,  $\text{ROSO}_3^-$  with calcium ions,  $\text{Ca}^{2+}$  in hard water.  $R$  represents the hydrocarbon long chain.



What is the effect of the addition of calcium ion the concentration of stearate ion or alkyl sulphate ion?

- A The concentration of stearate ion increases
- B The concentration of stearate ion decreases
- C The concentration of alkyl sulphate ion increases
- D The concentration of alkyl sulphate ion decreases

**[MRSM09-20]** Which of the following differences between soap and detergent is not true?

	<b>Soap</b>	<b>Detergent</b>
A	Effective in soft water	Effective in soft and hard water
B	Forms scum in hard water	Does not form scum in hard water
C	Harmful to aquatic life	Harmless to aquatic life
D	Raw material is fat or oil	Raw material is petroleum

**[MRSM03-20]** Which of the following are correctly matched?

	<b>Type of food additive</b>	<b>Function</b>
I	Preservative	Prevents the growth of microorganism in foods so that it keeps longer
II	Antioxidant	Prevents oxidation of the oil in food by oxygen
III	Flavouring	Gives and enhances the flavour of foods
IV	Colouring	Gives and restores certain colour in foods

- A I and III only
- B I, II and IV only
- C II, III and IV only
- D I, II, III and IV

**[MRSMtrial2010-18]** Which of the following pairs of additive in detergent and its function is correct?

	<b>Additives in detergent</b>	<b>Function</b>
A	Sodium perborate	To convert stains into colourless substances
B	Sodium tripoliphosphate	To enable detergent to be poured easily
C	Sodium silicate	To remove protein stains
D	Sodium sulphate	To soften the water

**[MRSM04-11]** Which of the following pairs is true about the additives in detergents and their function?

	<b>Additive</b>	<b>Function</b>
A	Phosphate compounds	Whitens cloth
B	Fluorescent compounds	Acts on organic matters such as blood
C	Biological enzyme	Kills and prevents growth of micro organism.
D	Whitening agent	Acts as bleaching agent

### **Medicine**

**[MRSM11-18]** Which of the following statements is true about streptomycin?

- A Can kill viruses
- B Obtained from animal cells
- C A type of analgesic
- D Treats patients with diseases caused by bacteria

**[SBPtrial11-39]** Which of the following can be used to cure headaches?

- A Cortisone
- B Streptomycin
- C Paracetamol
- D Barbiturates

**[SBPtrial2010-46]** The information below shows two examples of medicine Y.

- Penicillin
- Streptomycin

What is the type of medicine Y?

- A Antibiotic
- B Analgesic
- C Hormone
- D Psychotherapeutic medicine

**[MRSM03-13]** Which of the following is an analgesic?

- A Insulin
- B Penicillin
- C Cortisone
- D Paracetamol

**[MRSM10-20]** **A student has a whooping cough. He went to a clinic and the doctor prescribed streptomycin.**

What type of medicine is streptomycin?

- A Analgesic
- B Antibiotic
- C Antipsychotic
- D Psychotherapeutic

**[SPM04-17 | MRSM07-20]** Which of the following is the function of an analgesic?

- A to calm down the emotion of the patient
- B to treat asthma
- C to relieve pain
- D to destroy bacteria

**[SPM05-20]** Which medicine can relieve a headache?

- A aspirin
- B cortisone
- C barbiturate
- D streptomycin

**[SBPTrial07-13]** Paracetamol is used for

- A reducing pain
- B reducing anxiety
- C destroying of bacteria
- D controlling the level of glucose in blood

[ ] Which of the following medicines is an analgesic?

- A Insulin
- B Penicillin
- C Streptomycin
- D paracetamol

**[MRSM04-12]** Stimulants are drugs which are classified as

- A psychotherapeutic
- B analgesic
- C antibiotic
- D hormone

**[SPM03-13]** Psychiatric patients are always restless and normally experience difficulties in sleeping. Which medicine is suitable to treat these patients?

- A Aspirin
- B Codeine
- C Barbiturate
- D Streptomycin

**[SBPTrial09-40]** A patient is experiencing depression and has difficulty in sleeping. Which of the following medicine is suitable for treating this patient?

- A Codeine
- B Barbiturate
- C Paracetamol
- D Streptomycin

**[SBPTrial07-39]** A patient claims he always heard someone says something to him but he didn't see anybody around him during the situation.

Which of the following medicines is most appropriate in treating the above symptoms or disorders?

- A Chlorpromazine
- B Amphetamine
- C Tranquilisers
- D Barbiturates

**[MRSM05-20]** Which of the following medicine and its usage have been matched correctly?

	<b>Medicine</b>	<b>Usage</b>
I	Streptomycin	Pneumonia treatment
II	Aspirin	Releasing pain
III	Amphetamine	Controlling depression
IV	Insulin	Diabetes mellitus treatment

- A I and III only
- B II and IV only
- C I, II and IV only
- D I, II, III and IV

**[MRSM09-49]** A tuberculosis patient is suffering from high fever. Which of the following medicines should be prescribed to the patient?

- A Analgesic and psychotic medicine
- B Antibiotic and psychotic medicine
- C Analgesic and antibiotic
- D Psychotherapeutic and antibiotic

**[SPM07-50]** The joint of student's leg is swollen and painful. What medicine is suitable to be given to the student?

- A Insulin
- B Penicillin
- C Barbiturate
- D Paracetamol

**[SPM08-34]** A patient complained of pain due to an excess of acid in the stomach. Which substance will help to relieve the pain?

- A Ammonia
- B Ethanoic acid
- C Sodium chloride
- D Magnesium hydroxide

### **Food Additive**

**[MRSM11-20]** Diagram 6 shows the label on a box of sugar free banana cake.

**Banana Cake [Sugar Free]**

**Ingredients: Wheat flour, egg, margarine, aspartame, pentyl ethanoate, ascorbic acid, sunset yellow**

**Expiry date: 16 September 2011**

Diagram 6

Which of the following ingredients ensures the cake does not turn rancid?

- A Aspartame
- B Sunset yellow
- C Ascorbic acid
- D Pentyl ethanoate



[SBPtrial10-40] Diagram 8 shows a bottle of pickled mangoes.

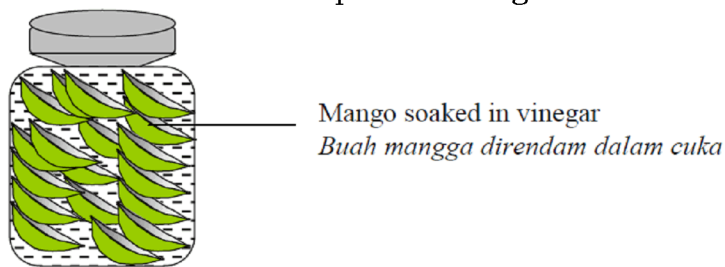


Diagram 8

Which type of food additive is represented by vinegar?

- A Dyes
- B Thickener
- C Antioxidant
- D Preservative

[MRSM06-10] The diagram shows a label on a bottle of 'Orange Juice XYZ'.

*Orange Juice XYZ*  
**Ingredients: water, sugar, ascorbic acid, sulphur dioxide, aspartame, E110, E102, vitamin A and D.**  
*Best before: 15 Dec 2006*

What is the function of sulphur dioxide?

- A To make the drink more concentrated
- B To give colour to the drink
- C To give orange flavour to the drink
- D To make the drink last longer

[MRSM09-19] Sodium chloride is added to fish to produce salted fish.

Which of the following is the main function of sodium chloride?

- A It improves the texture
- B It gives a better taste
- C Prevents oxidation so that it does not turn rancid
- D It absorbs water in order to inhibit the growth of bacteria

[SPM07-20] Which of the following is **not** a function of food additives?

- A Improving the taste
- B Adding nutritional value
- C Keeping the food fresher
- D Ensuring nutritional balance

[MRSM07-20] Table 2 shows the types and functions of food additives.

	<b>Type</b>	<b>Function</b>
I	Preservative	Prevents growth of microorganism in foods
II	Antioxidant	Prevents oxidation of the oil by oxygen
III	Flavouring	Enhances the flavour of foods
IV	Colouring	Gives and restores certain colour in foods

Which of the following are **correctly** matched?

- A I and III only
- B I, II and IV only
- C II, III and IV only
- D I, II, III and IV

**[SPM08-21]** Which substance is used as a food preservative?

- A Sodium nitrite
- B Azo compounds
- C Ascorbic acid
- D Monosodium glutamate

**[SBPTrial07-26]** The diagram shows a label on a bottle of orange juice.

**SUKARAMAI ORANGE JUICE**

Ingredients: water, sugar, X, sulphur dioxide, aspartame, vitamin A and D

X is one of the important ingredients to make orange juice last longer.  
What is X?

- A Sodium nitrite
- B Sodium nitrate
- C Ascorbic acid
- D Benzoic acid

**[SBPTrial08-48]** Which of the following food additives can be used to make food stay fresh longer and taste better?

- A Sodium benzoate and tartrazine
- B Sodium benzoate and ascorbic acid
- C Monosodium glutamate and tartrazine
- D Ascorbic acid and monosodium glutamate

**[SBPTrial09-13]** Which of the following characteristics shows that salt is used as food preservative?

- A Presence of chlorine
- B Saltiness
- C Dehydrating property
- D Toxicity

**[SPM07-38]** Which of the following is not a function of food additives?

- A to improve the texture of food
- B To enhance the flavour of food
- C To decrease the rate of oxidation of food
- D To increase the rate of digestion of food.

**[SPM11-16]** Which pair is correctly matched?

	Food additive	Example
A	Preservative	Ascorbic acid
B	Flavouring	Tartrazine
C	Antioxidant	Aspartame
D	Thickener	Acacia gum

## Structure {Paper02}

**[MRSM10-01c]**

(c) Diagram 1.2 shows an equation representing the reaction between coconut oil (gliseryl tristearate) and concentrated sodium hydroxide.

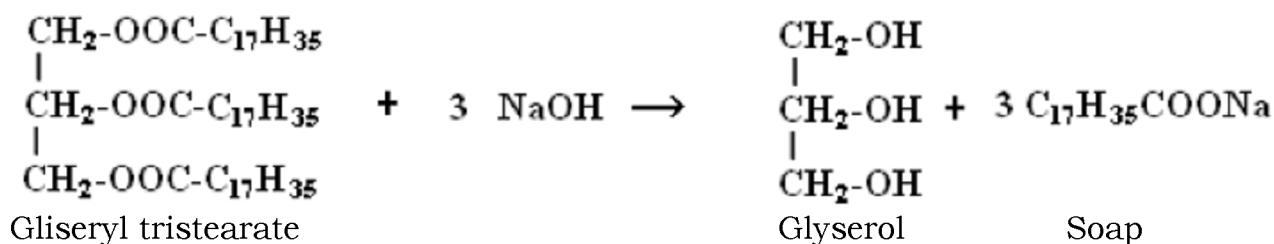


Diagram 1.2

Based on Diagram 1.2, answer the following questions:

(i) Name the soap molecules produced. [1M]

.....

(ii) Name the process represented by the equation. [1M]

.....

(iii) Why are the soap molecules not effective in hard water? [2M]

.....

.....

**[SBPTrial2010-02b]**

(b) The sulphuric acid produced from the above process is used to manufacture detergent. Diagram 2.2 shows the structural formulae of the detergent. Detergent dissolves in water to form detergent anions.

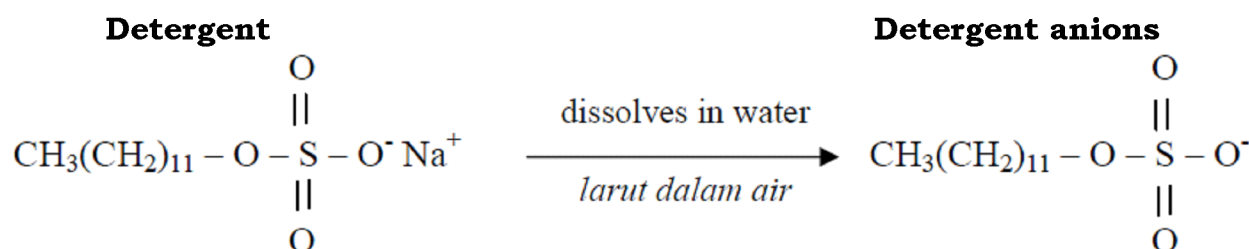


Diagram 2.2

(i) State the type of reactions involved during the preparation of detergent. [2 marks]

1. ....

2. ....

(ii) Labelled the hydrophilic part and the hydrophobic part of the detergent anions in diagram 2.2. [1 mark]

(iii) Detergent is more effective as cleaning agent in hard water compared to soap. Explain why. [2 marks]

.....  
 .....  
 .....

### [SPM07-01]

The following equation shows how soap can be prepared.



(a)(i) What is the name of this process? [1M]

.....

(ii) Stated the name of substance X. [1M]

.....

(iii) Sodium chloride solid added to the soap mixture to complete this process. Explain why. [1M]

.....

(b) Two cleaning agents, J and K are used to wash clothes in sea water and river water. Table 1 show the result obtained.

Cleaning agent	Sea water	River water
J	Forms scum	Does not form scum
K	Does not form scum	Does not form scum

**Table 1**

(i) State the type of cleaning agents J and K. [2M]

J : ..... K: .....

(ii) What is the meaning of scum? [1M]

.....

(iii) What are the two ions in sea water that causes the formation of scum? [2M]

.....



(i) State the part of a detergent particle that is soluble in grease. [1M]

.....

(ii) Based on Figure 2.1 explain the washing action of detergent particles on greasy stains. [3M]

.....

.....

.....

(iii) Complete Figure 2.2 to show the condition of grease and detergent particles when the water is stirred. [1M]

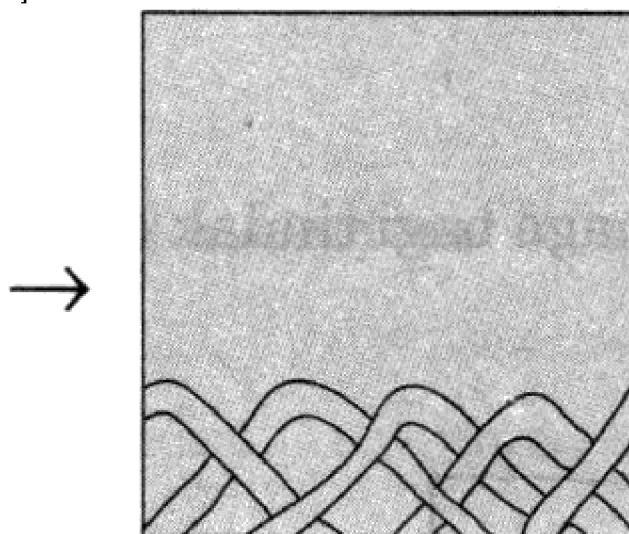


Figure 2.2

**[SBPtrial09-01]**

Diagram 1 shows the apparatus set-up for preparing soap.

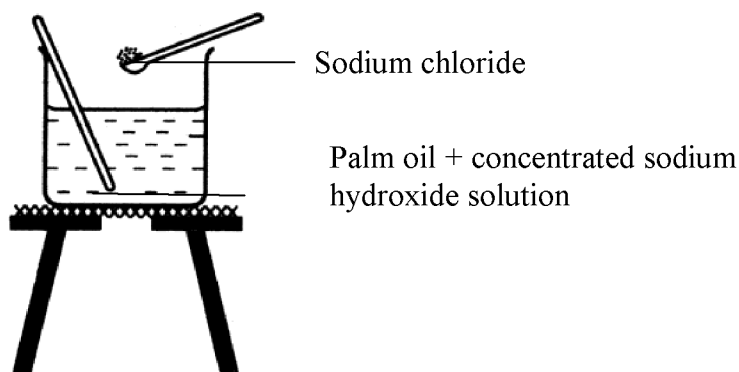


Diagram 1

(a) (i) State the name of the process to prepare soap. [1M]

.....

(ii) What is the homologous series of palm oil? [1M]

.....

(iii) Why is sodium chloride added to the mixture? [1M]

.....

(iv) Suggest another solution which can replace sodium hydroxide. [1M]

.....

(b) The cleansing action of a detergent is more effective than soap in hard water

(i) What is hard water? [1M]

.....

(ii) Explain why detergent is more effective than soap in hard water. [2M]

.....

.....

.....

(c) Sodium benzoate, ascorbic acid and monosodium glutamate are examples of food additives.

(i) Complete the table below: [2M]

Type of food additive	Example	Function
Preservatives	Sodium benzoate in tomato sauce	..... .....
.....	Ascorbic acid in fruit juice	To preserve the colour of fruit juice

(ii) Monosodium glutamate is a permitted flavouring. What is the effect of monosodium glutamate to a person who is sensitive to it? [1M]

.....



**[MRSM10-01b]**

(b) Table 1 shows two types of food additives used in food industry.

Types of food additives	Example	Uses
U	Sodium benzoate	Food can last longer
Antioxidants	V	Neutralises free radicals and reduce risk of cancer

Table 1

(i) State the type of food additive U. [1M]

.....

(ii) State the example of antioxidant that is represented by V. [1M]

.....

**[MRSM09-01]**

Diagram 1.1 shows a label of ingredients present in a canned food.

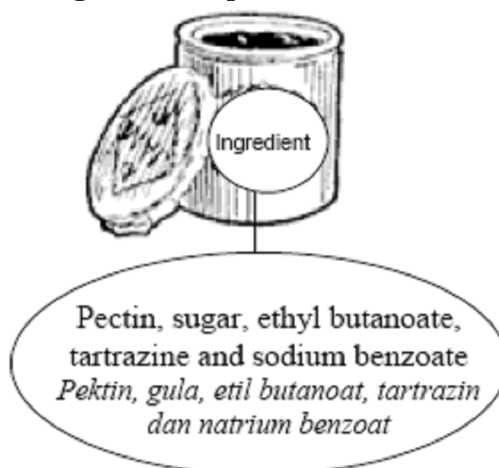


Diagram 1.1

(a) (i) What is the function of sodium benzoate? [1M]

.....

(ii) How does sugar make the food last longer? [1M]

.....

(iii) Table 1 shows the function of two types of food additives.

Name	Function	Type of food additives
Soy lecithin	Helps to prevent an emulsion from separating out	.....
Ethyl butanoate	Helps to enhance the smell of foods.	.....

Complete Table 1 by identifying the food additives. [2M]

(b) Diagram 1.2 shows two examples of modern medicine.



Diagram 1.2

(i) Name the class of medicines for aspirin and codeine. [1M]

.....

(ii) What is the function of aspirin? [1M]

.....

(c) Diagram 1.3 shows two pieces of greasy cloth soaked in two types of water.

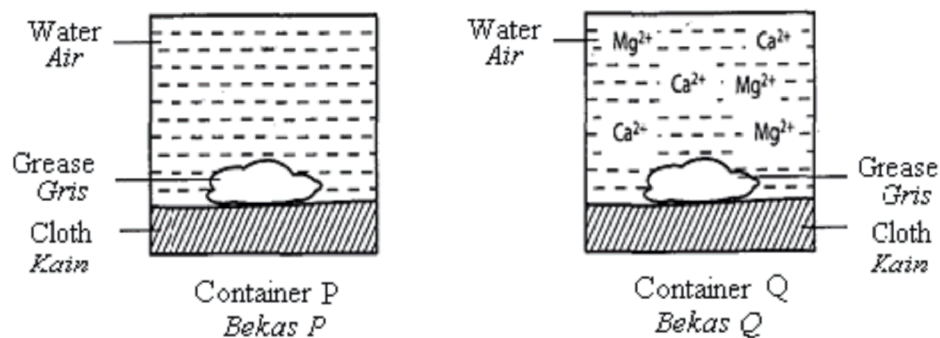


Diagram 1.3

(i) State the type of water that has high concentration of  $\text{Ca}^{2+}$  and  $\text{Mg}^{2+}$  ions. [1M]

.....

(ii) In which container can soap removes the grease easily? [1M]

.....

(iii) Give a reason for your answer in c(ii). [1M]

.....

.....

[SPM06-01]

(a) Diagram 1.1 shows a ginger plant. Ginger can be used as a traditional medicine.

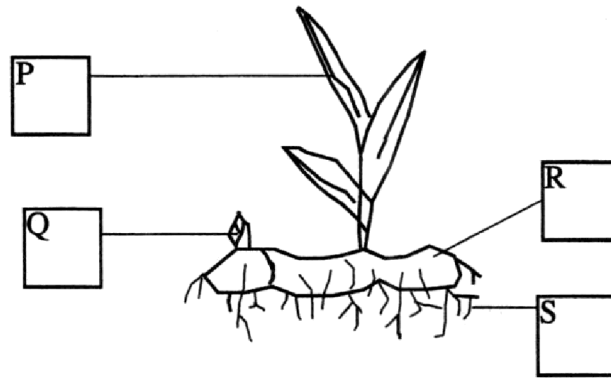


Diagram 1.1

(i) Which of the parts P, Q, R or S is used as the main source of medicine? Mark (✓) for your answer in the box provided in Diagram 1.1. [1M]

(ii) What illness can be cured by using ginger? [1M]

.....

(iii) How is ginger used to treat the illness in 1(a)(ii)? [1M]

.....

(b) Table 1.1 shows the functions of three types of medicine.

Function	Type of medicine
Prevents pain	X: .....
Kills or prevents the reproduction of bacteria	Y: .....
Changes the emotions and behaviour of the patient	Z: .....

(i) Complete Table 1.1 to show which medicines have the functions given in the table. [3M]

(ii) What is the side effect of medicine of type X if it is used by a child of less than 2 years old? [1M]

.....

(iii) A patient treated by medicine of type Y must complete all the supply given by the doctor in order to make sure all the bacteria are killed.

What will happen if **NOT** all the bacteria are killed? [1M]

.....

(iv) Tranquilizer is an example of medicine of type Z.

Give ONE change that might happen to a patient’s emotion when treated using this medicine. [1M]

.....

**[SPM04-02]**

(a) In preparing soap, a strong alkali solution is added to fats. The mixture is heated and the sodium chloride is added.

(i) Name one strong alkali used in preparing soap. [1M]

.....

(ii) Why sodium chloride added to the mixture? [1M]

.....

(b) The statement below is about is about soap and detergent.

**The cleaning action of a detergent is more effective than soap in hard water.**

You have two socks stained with oil.

Describe briefly the experimental procedure, observations and conclusions to prove the above statement, by using substance such as soap, detergent and hard water.

Procedure of the experiment: [3M]

.....

.....

.....

.....

Observations [1M]:

.....

.....

Conclusions [1M]:

.....

.....

(c) Analgesic and psychotherapeutic medicines are used to treat patients. Aspirin is an analgesic medicine and barbiturate is a psychotherapeutic medicine.

(i) What is the function of a barbiturate? [1M]

.....

(ii) Children are advised not to take aspirin because it bleeding of the intestine and stomach.

Suggest **one** other medicine to replace the aspirin. [1M]

.....

(iii) Diagram 2 shows the structural formula of aspirin.

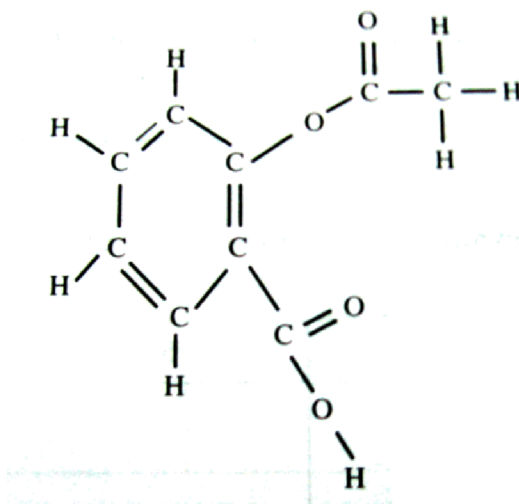


Diagram 2

What is the molecular of aspirin? [1M]

.....

(iv) What is the molecular mass of aspirin?

Use the information that relative atomic mass of H=1, C=12 and O=16. [1M]

## Essay {Paper02}

[SPM11-08b]

(b) Diagram 8.2 shows the result of two different cleaning agent, A and B, used to removed grease stain on a shirt.

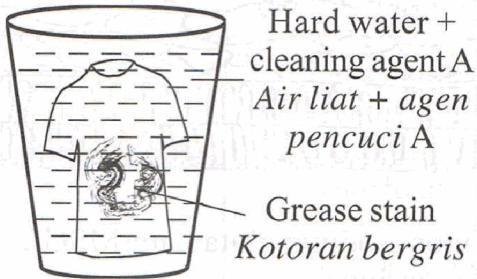
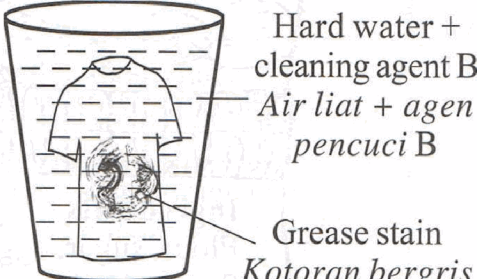

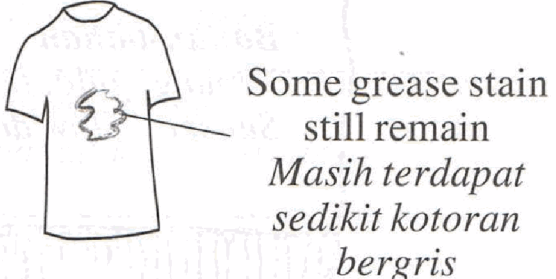
Cleaning agent	A	B
Structural formula	$\text{CH}_3(\text{CH}_2)_{11}\text{OSO}_3^-$	$\text{CH}_3(\text{CH}_2)_{16}\text{COO}^-$
Cleaning in hard water		
Result		

Diagram 8.2

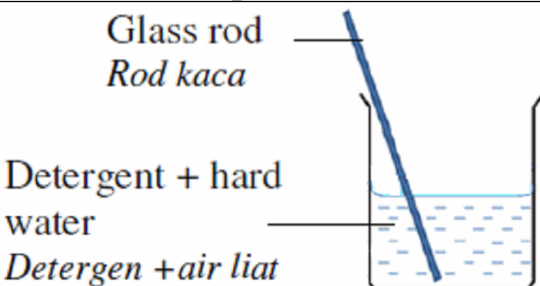
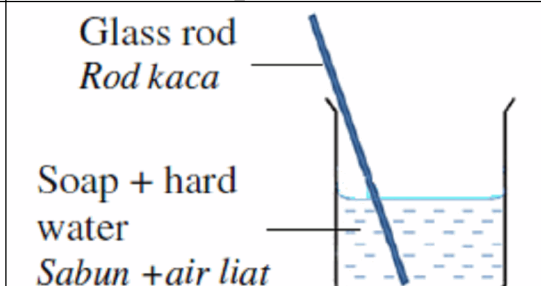
Based on Diagram 8.2, compare and contrast the cleansing action of the two cleaning agents in hard water.

Explain your answer and state the type of cleaning agent A and cleaning agent B. [6M]

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[MRSM11-08c]

(c) (i) A student carried out an experiment to investigate the effectiveness of soap and detergent in hard water. Soap and detergent is added separately to hard water in Experiment I and Experiment II. Table 8.2 shows the apparatus set-up and observation for the experiment.

	Experiment I	Experiment II
initial		

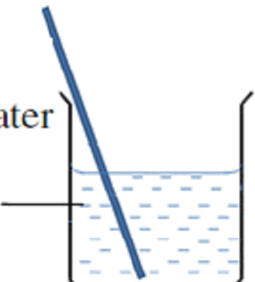
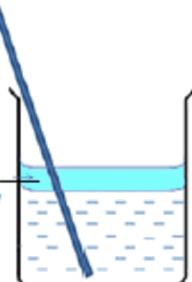
After Stirring	<p>Clear mixture of detergent + hard water <i>Campuran detergen dalam air liat yang jernih</i></p> 	<p>Thin layer of solid on surface of water <i>Lapisan nipis pepejal di permukaan air</i></p> 
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Table 8.2

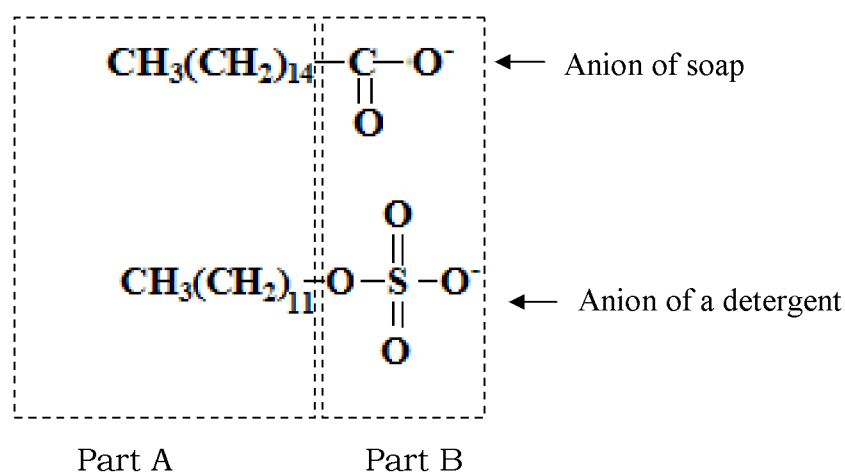
Based on Table 8.2, compare the effect of soap and detergent on hard water. Which is a better cleaning agent? Explain. [4M]

(ii) A mechanic found that his cloth has oily stain. He washed them with detergent. Describe briefly the cleansing mechanism of detergent during washing. [6M]

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### [SBPtrial08-07c]

Diagram 7.2 shows the structure of anion parts of soap and a detergent. These anions consist of part A and part B as shown in the diagram 7.2



**Diagram 7.2**

(i) Name part A and part B of the anions. State the solubility of part A and part B in the cleansing action. [4M]

(ii) Compare the effectiveness of the cleansing action of the two anions shows in the diagram 7.2 in hard water. Explain your answer.

Write an ionic equation to show the reaction of anion of soap in hard water. [6M]

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**[MRSM07-10a]**

Sodium stearate and sodium dodecylsulphate are cleaning agents. Their molecular formulae are shown in Diagram 10.1.



Diagram 10.1

(a) (i) Sodium stearate dissolves in water to form ions. Write an equation to show the ionization of sodium stearate. [1M]

(ii) Determine which of the two cleaning agents is more effective in their cleansing action in hard water. Give reasons.[4M]

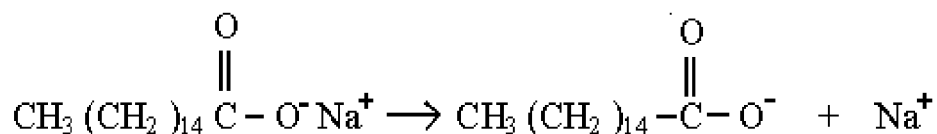
(iii) Fat reacts with an alkali to form soap.

Describe an experiment to prepare a sample of soap. Your answer should include: [8M]

- Chemicals used
- Procedure
- A test to verify the soap sample that you have prepared has a cleansing effect.

**[MRSM08-08 d,e,f]**

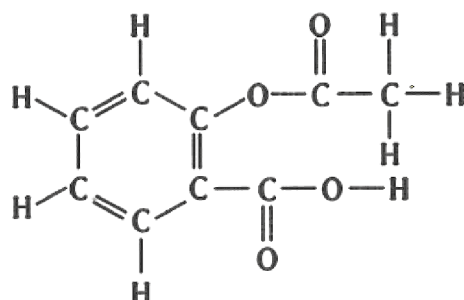
(d) The equation below shows the ionization of a sodium soap molecule in water.



Soap becomes less effective when the cleaning is carried out in acidic water. Explain.[2M]

(e) Amphotericillin is an antibiotic. Patients are advised to finish the whole course of antibiotic prescribed even though he/she has recovered from the sickness. Explain.[3M]

(f) The structural formula of aspirin is shown below.



Explain why aspirin is not advisable to be prescribed to patient with gastric problem.[2M]



**[MRS11-08b]**

(b) Modern medicine is used to treat various diseases and symptoms. Table 8.1 shows the medicine used to treat various diseases and symptoms.

Medicine	A	B	C
Diseases / symptoms	Headache, muscle and joint pain, backache	Tuberculosis, Pneumonia	Depressed, anxious and lack of interest in his surrounding

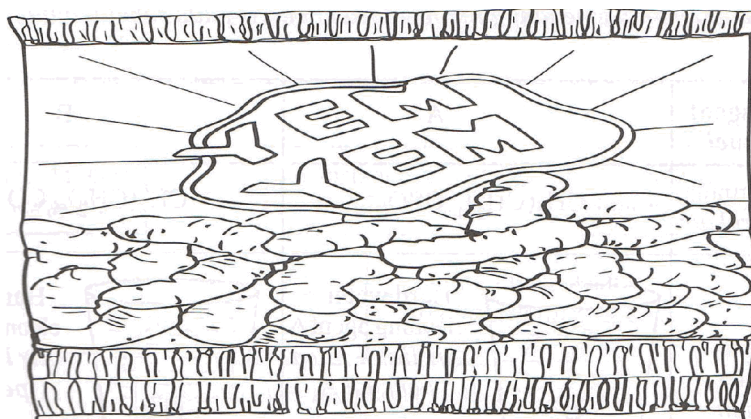
Table 8.1

Based on Table 8.1, suggest types of medicine A, B, C and their function. [6M]

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**[SPM11-08a]**

(a) Diagram 8.1 shows the label on a pack of food.



Ingredients

Flour, sugar, eggs, monosodium glutamate (MSG),  
Sunset Yellow and ascorbic acid.

Net Weight  
120 gram

Diagram 8.1

(i). State two types of food additives found on the label and state the function for each type of food additives. [4M]

(ii). One of the ingredients in the food is not suitable for a diabetic patient. State the ingredient and suggest another food additive that can give the same sweetness but has a lower calorie content. [2m]

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**[SPM08-07]**

(a) Diagram 7.1 shows a list of ingredients for a type of food.

**PINEAPPLE JELLY**

- Ethyl butanoate
- Sucrose
- Citric acid
- Gelatin
- Sodium benzoate

Diagram 7.1

From the list of ingredients, select two substances used as food additives. State the function of each food additive that you have selected. [4M]

(b) Diagram 7.2 shows a conversation between Aida and May Ling.

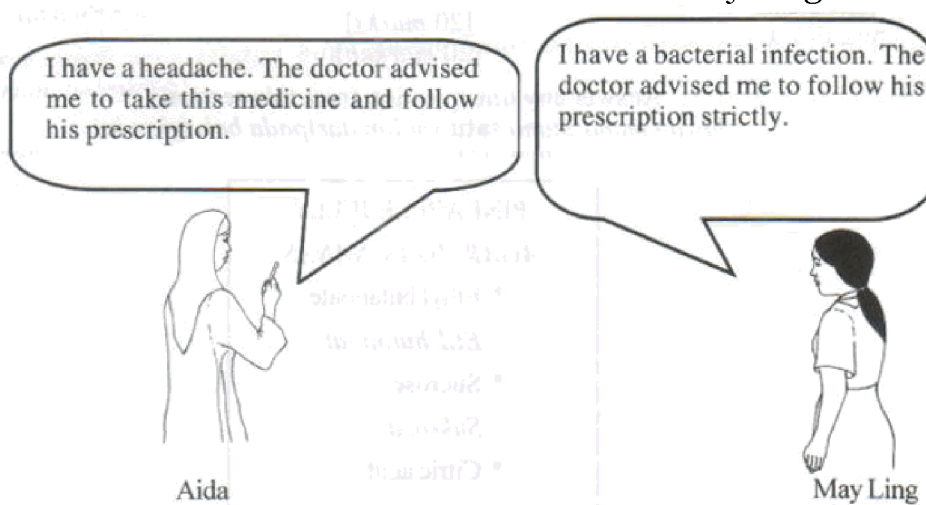
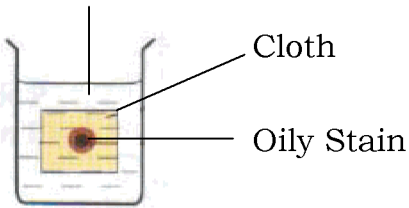
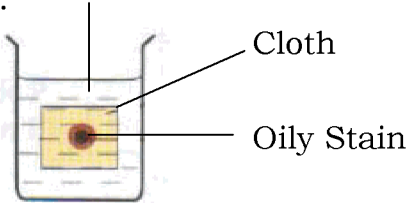
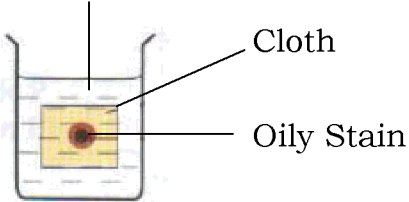
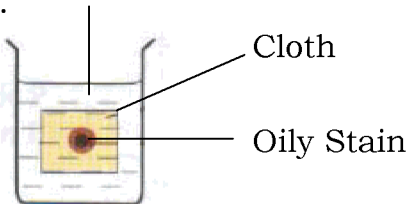


Diagram 7.2

These two students met a doctor and some medicine was prescribed to them. For each medicine, state its name, type and the correct usage. [6M]

(c) Diagram 7.3 shows the apparatus used to investigate how to remove an oily stain from a cloth and the observations made from that investigation.

Experiment	Apparatus	Observation
I	20 cm <sup>3</sup> cleaning agent A + 500 cm <sup>3</sup> of soft water. 	Oily stain is removed
II	20 cm <sup>3</sup> cleaning agent A + 500 cm <sup>3</sup> of hard water. 	Oily stain remains

III	20 cm <sup>3</sup> cleaning agent B + 500 cm <sup>3</sup> of soft water. 	Oily stain removed
IV	20 cm <sup>3</sup> cleaning agent B + 500 cm <sup>3</sup> of hard water. 	Oily stain removed

(i) Based on the given information in Diagram 7.3, compare and explain the effectiveness of the cleaning action between

- Experiment I and III
- Experiment II and IV

(ii) Identify the cleaning agents, A and B. [10 M]

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### [SPM03-08]

(a) State two methods of food preservation which used in our daily lives and explains how the methods work. [4M]

(b)

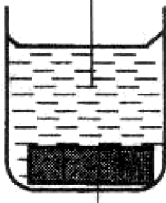
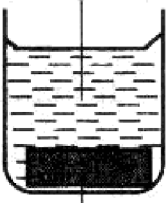
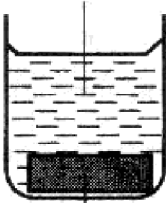
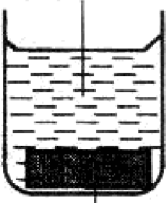
A student discovered that his socks have oily stains. He washed them with soap.

Explain

the cleansing action of soap on the oily stain [8M]

(c) A student carried out four experiments to investigate the cleansing effects of soap and detergent on oily stains in soft water and hard water.

Table 2 shows the set up apparatus, types of water used and the observations for Experiments I, II, III and IV.

Experiment	I	II	III	IV
Set up of apparatus	Soap + soft water  Cloths with oily stains	Soap + hard water  Cloths with oily stains	Detergent + soft water  Cloths with oily stains	Detergent + hard water  Cloths with oily stains
Observation	Oily stains disappeared	Oily stains remained	Oily stains disappeared	Oily stains disappeared

Compare the cleansing effects between

- Experiments I and II
- Experiments II and IV

Explain why there are differences in the observations. State the substances which are more suitable as a cleansing agent to remove oily stains. [8M]

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[MRSM06-08a]

**Anabolic steroid is frequently used by athletes to increase their performance.**

- Explain the function of the anabolic steroid and state three side effects caused by its misuse. [4M]

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[SPM2010-07b]

- Food additive have been used by mankind for centuries. Diagram 7 shows part of the labels on three food containers.

Pineapple in syrup	Tomato Sauce	Vanilla Ice Cream
Sweet and made traditionally from natural source	Tasty and last long	Tasty and smooth
<u>Ingredients:</u> Fresh pineapple slices <b>Food additive P</b>	<u>Ingredients:</u> Tomato Sugar Salt Corn Flour Artificial colour <b>Food additive Q</b>	<u>Ingredients:</u> Milk Vanilla Sugar Artificial colour <b>Food additive R</b>

Diagram 7

(i) P, Q and R are food additives. Based on the label on the food containers in Diagram 7: [9M]

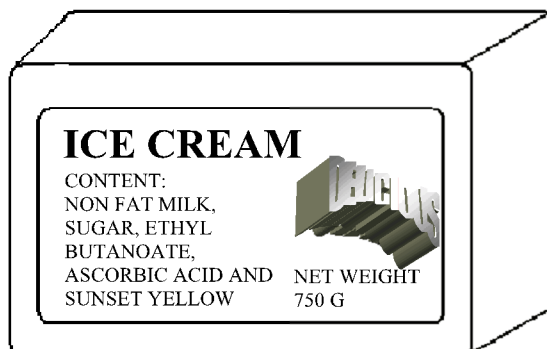
- State the name of food additive P, Q and R
- Determine the types of food additives and their functions respectively.

(ii) What is the effect of taking excessive food additive Q for a long period of time? [1M]

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**[MRSM05-08a]**

(a) Diagram 2 show the label found on an ice cream wrapper.



(i) Based on the label, explain briefly the function of ascorbic acid, sunset yellow and ethyl butanoate. [3M]

(ii) Draw the structural formula for ethyl butanoate found in the ice cream. [1M]

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