

SMART-EXAM-RESOURCES

CAMBRIDGE LOWER SECONDARY CHECKPOINT PRACTISE QUESTIONS AND ANSWERS S Subject: Biology

Topics:

- A healthy diet
- A healthy lifestyle

Set-1

1

(a) Fibre in the human diet contains a lot of cellulose that humans cannot digest.

(i) State two advantages to humans of including fibre in the diet.

1

.....

2

..... [2]

(b) Micronutrients are components of the diet that are only needed in very small quantities.

Name two micronutrients that are essential for the healthy development of bones and teeth.

1

2

[2]

MARK SCHEME:

(a) (i) allows/assist peristalsis;
reduces constipation;
reduces risk of colon cancer;
Any two - 1 mark each **[2]**

(b) calcium;
vitamin D;
phosphate;
fluoride;

Any two - 1 mark each **[2]**

2 The table shows the amounts of four nutrients required by four people for a balanced diet.

person	protein / g	iron / mg	calcium / mg	vitamin C / mg
14 year-old boy	66	11	700	25
14 year-old girl	55	13	700	25
30 year-old woman	53	12	500	30
30 year-old pregnant woman	60	14	1200	60

(a) (i) Explain why there is a difference in the amount of protein required by the 14 year-old boy and the 30 year-old woman.

.....
.....
.....
..... [3]

(ii) Explain why there is a difference in the amount of iron required by the 14 year-old girl and the 14 year-old boy.

.....
.....
..... [2]

(iii) Explain why there is a difference in the amount of calcium required by the two 30 year-old women.

.....
.....
..... [2]

(b) State the role of vitamin C in the human body.

.....
..... [1]

[Total: 8]

MARK SCHEME:

(a) (i) boy in puberty / still growing;

muscle development;

protein needed for growth and repair;

30 year old only needs protein for repair;

Any three – 1 mark each

[3]

(ii) females regularly lose some in menstruation;

ref. to difference in size of 14 year olds;

iron needed for haemoglobin / red blood cells;

Any two – 1 mark each

[2]

(iii) pregnant woman needs more calcium;

needed for both herself and for fetus;

calcium needed for bones / teeth;

Any two – 1 mark each

[2]

(b) maintain tissues / prevent scurvy;

[1]

3 (a) (i) State what is meant by the term *balanced diet*.

.....
.....
.....
.....
.....
..... [3]

(ii) Balanced diets should include fat, fibre, mineral salts and vitamins.

Name **two** other types of nutrients that should be present in a balanced diet.

.....
..... [1]

(b) Suggest and explain the effects on a person of a diet with:

(i) too little fibre,

.....
.....
.....
..... [2]

(ii) too much animal fat.

.....
.....
.....
..... [2]

(c) Calcium, a mineral salt, is needed in the diet.

Explain the role of calcium in the body and the effect of calcium deficiency.

.....

.....

.....

.....

.....

.....

..... [3]

[Total: 11]

MARK SCHEME:

<p>(a) (i) 1 a diet that contains all the necessary nutrients / OWTTE; 2 in the required quantities / OWTTE; 3 for sex / age / activity; 4 to maintain health / for healthy living;</p> <p>any three – 1 mark each [3]</p> <p>(ii) two of – carbohydrates / protein / water; [1]</p>	<p>A – ref. to 7 nutrients, list of all 7 necessary nutrients A – amount, not in excess</p> <p>note – two responses for 1 mark. A – starch / sugar as alternatives for carbohydrate</p>
<p>(b) <u>too little fibre</u> –</p> <p>1 fibre aids peristalsis / aid movement through alimentary canal / OWTTE; 2 can lead to constipation; 3 associated with (colon) cancer;</p> <p>any two – 1 mark each [2]</p> <p><u>too much fat</u> –</p> <p>1 body stores (excess) fat; 2 can lead to obesity / overweight; 3 associated with coronary heart disease; 4 increase risk of diabetes</p> <p>any two – 1 mark each [2]</p>	<p>I – ref. to diarrhoea</p> <p>A – other descriptions of overweight A – specific correct ref. to symptoms e.g. heart attack, block arteries I – heart problems as too vague</p>
<p>(c) 1 calcium used in bones / teeth; 2 strengthens / hardens bone / teeth / enamel; 3 lack leads to rickets (in bones); 4 bones lack rigidity / become bent / curved; 5 teeth more prone to disease / decay / cavities; 6 involved in clotting / OWTTE; 7 blood may not clot properly;</p> <p>any three – 1 mark each [3]</p>	
<p>[Total: 11]</p>	

4 (a) Humans need a supply of mineral salts, such as calcium and iron, in their diet.

(i) State a role of calcium ions in the human body.

..... [1]

(ii) State a role of iron ions in the human body.

..... [1]

MARK SCHEME:

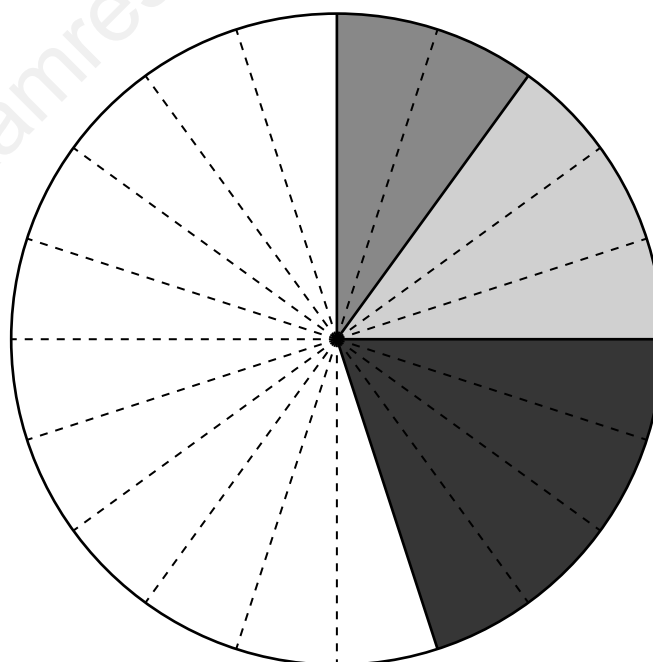
(i) to form /harden bones/teeth/enamel;

[1] A – become stronger/strengthen
A – clotting of blood

(ii) to form haemoglobin;

[1] A – myoglobin/enzymes/electron carriers

5 (a) Fig. 5.1 shows the proportion of different food groups in a diet.



carbohydrates vitamins, minerals and fibre fats proteins

Fig. 5.1

(i) State the two food groups, shown in Fig. 5.1, that supply the most energy per kilogram.

..... and

[2]

This diet has a low proportion of iron and vitamin D.

(ii) Describe **one** effect of a shortage of iron in the human diet.

.....
..... [1]

(iii) Describe **one** effect of a shortage of vitamin D in the human diet.

.....
..... [1]

(b) (i) Suggest the benefit of adding egg, chicken or fish to the rice.

.....
..... [1]

(ii) Rice is not the only food that contains a lot of starch.

Name **two** other foods that contain a lot of starch.

1
2 [2]

MARK SCHEME:

(a) (i)	carbohydrates; fats; proteins;	max [2]	
(ii)	anaemia/reduced oxygen transport/symptoms of anaemia;	[1]	
(iii)	Rickets/poor formation of bones or teeth;	[1]	
b(i)	provides protein/amino acids;	[1]	AVP e.g. iron
(ii)	bread; pasta; corn; potatoes; maize; cassava;	max [2]	A any valid food with high starch content

- 6** (a) (i) Table 9.1 contains examples of components of a balanced diet and foods that contain a high proportion of the component.

Complete Table 9.1 by filling in the blank spaces.

Table 9.1

component of balanced diet	food containing a high proportion of the component
fat	olive oil
	meat
	pasta
fibre (roughage)	

[3]

- (ii) Name **two** other components of a balanced diet that are not listed in Table 9.1.

.....
.....[2]

MARK SCHEME:

<p>(a) (i)</p>	<table border="1"> <thead> <tr> <th>component</th> <th>food</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> </tr> <tr> <td>protein ;</td> <td></td> </tr> <tr> <td>carbohydrate ;</td> <td></td> </tr> <tr> <td></td> <td>any example of plant cell wall material / any fruit or vegetable ;</td> </tr> </tbody> </table>	component	food			protein ;		carbohydrate ;			any example of plant cell wall material / any fruit or vegetable ;	<p>[3]</p>	
component	food												
protein ;													
carbohydrate ;													
	any example of plant cell wall material / any fruit or vegetable ;												
<p>(ii)</p>	<p>minerals / ions / named mineral ; vitamins / named vitamin ; water ;</p>	<p>[max 2]</p>	<p>A ecf from table if group not given there</p>										