**B1 Rev. Pack 3 markscheme**

**M1.**(a)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Structure** | **Organ** | **Organ system** | **Tissue** |
|  | Stomach |  |  |  |
|  | Cells lining the stomach |  |  |  |
|  | Mouth, oesophagus, stomach, liver, pancreas, small and large intestine |  |  |  |

all 3 correct = 2 marks

2 correct = 1 mark

1 or 0 correct = 0 marks

**2**

(b)     (i)      diffusion

*allow phonetic spelling*

**1**

(ii)     glucose

**1**

(iii)    mitochondria

**1**

**[5]**

**M2.**(a)     tissue → organ → organ system

*one right for* ***1*** *mark*

*three right for* ***2*** *marks*

**2**

(b)     **Epithelial tissue** → covers the outside and the inside of the stomach

*more than one line from a tissue = no mark*

**1**

**Glandular tissue** → produces digestive juices

**1**

**Muscular tissue** → allows food to be churned around the stomach

**1**

(c)     (i)      light

*ignore dark*

**1**

(ii)     moving (to the dark)

**1**

(iii)    any **two** from:

•         use more woodlice

•         repeat the experiment

•         run for a longer time

**2**

**[9]**

**M3.**(a)     (i)      A = (cell) membrane

**1**

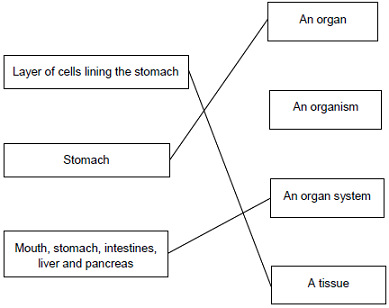
B = cytoplasm

*do* ***not*** *accept cytoplast*

**1**

(ii)     To control the activities of the cell

**1**

(b)       
 

extra lines cancel

**3**

**[6]**

**M4.**(a)     (i)      any **two** from:

•        fibres not damaged

•        machines last longer / machines not damaged by stones

•        shorter time or quicker

•        lower temperature



*uses less energy or cheaper for energy as an alternative to shorter time / lower temperature, if neither of these given*

*no mark for cheaper unqualified*

**2**

(ii)     any **two** from:

•        different enzymes (for different dyes)

•        enzymes expensive

*no mark for expensive alone*

•        enzymes have to be removed (from denim material) (after washing / treatment)

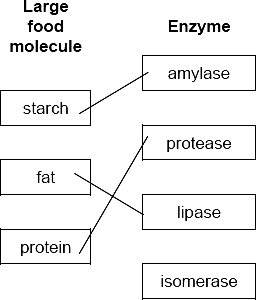
**2**

(b)     protease

*apply list principle*

**1**

**[5]**

**M5.**         (a)      (i)        


*all three correct =* ***3*** *marks*

*two correct =* ***2*** *marks*

*one correct =* ***1*** *mark*

*extra line from a large food molecule cancels the mark*

**3**

(ii)     sugars

**1**

fatty acids and glycerol

**1**

amino acids

*must be in this order*

**1**

(b)     liver

**1**

**[7]**

﻿

**M6.**          (a)     liver

**1**

          mouth or salivary glands **or**duodenum **or** small intestine **or**pancreas

**1**

          pancreas

*accept duodenum* ***or*** *ileum* ***or****small intestine*

*do* ***not*** *accept stomach*

**1**

          stomach **or** duodenum **or** ileum **or**small intestine **or** pancreas

**1**

(b)     teeth breakdown food

*accept chewing*

**1**

          amylase **or** saliva (breaks down starch)

**1**

(c)     produces bile (salts)

**1**

          emulsifies (fat) **or** produces droplets  
**or** disperses fat)

**1**

**[8]**

**M7.**(a)     any **two** from:

•        same result at pH 7 and 7.5

**or**

could be any pH between 7 and 7.5

**or**

not tested at pH 7.25

**or**

need to test at smaller pH intervals (between 7 and 7.5)

•        accuracy of result only to nearest 0.5 minutes

•        no repeats

•        difficult to determine end point (colour)

**2**

(b)     2.7 / 5

**1**

0.54 (units per minute)

*allow 0.52 with no working shown for* ***2*** *marks*

**1**

*allow* ***1*** *mark for 0.52* ***or*** *0.56*

(c)     (after 10 minutes) solution goes black

**1**

(after 60 minutes) solution stays the same

**or**

does not go black

**or**

goes slightly orange

**1**

(d)     steeper curve

**1**

levels off at 11.8 units **and** before 45 minutes

**1**

**[8]**

**M8.**(a)     6.1 circled on table (15 °C, test 1)

**1**

(b)     1.8

*do not allow 1.83*

**1**

(c)     16 (minutes)

*correct number extrapolated from curve*

**1**

(d)     4.0 min – blue / black / purple

**1**

7.0 min – yellow / orange / brown

**1**

(e)     The amylase solution had been prepared with water at 95 °C

**1**

**1**

(f)     **Level 3 (5–6 marks):**

A clear and coherent method is described using logical steps and demonstrating a good understanding of how to improve the validity of the method. The method would lead to  
the production of valid results that would give rise to a more valid conclusion.

**Level 2 (3–4 marks):**

The substantive content of a method is present and demonstrates reasonable understanding of how to improve the validity but may be missing some detail. The plan  
may not be in a completely logical sequence but leads towards the measurement of  
rate of the reaction.

**Level 1 (1–2 marks):**

Simple relevant statements made, which demonstrate limited understanding of how to improve the experimental method. The response lacks logical structure and would not  
lead to the production of valid results or a more precise optimum temperature.

**0 marks:**

No relevant content

**Indicative content**

•        conduct at a greater range of temperatures

•        use temperatures both above and below 40 °C

•        use smaller temperature intervals to get a more accurate optimum (eg go  
up in 2 °C increments)

•        take samples at smaller time intervals to get a more accurate result for  
‘time taken’

•        control the volume of starch used (eg 5 cm3)

•        control the volume of the amylase solution (eg 1 cm3)

•        control the temperature (eg using a water bath)

•        heat the two solutions separately before mixing

•        control the concentration of the starch solution

•        control the concentration of the amylase solution

**6**

**[13]**