**B1 Rev..Pack 1 markscheme M1.**(a)     cell membrane

*extra boxes ticked negates mark*

**1**

(b)     nucleus

*extra boxes ticked negates mark*

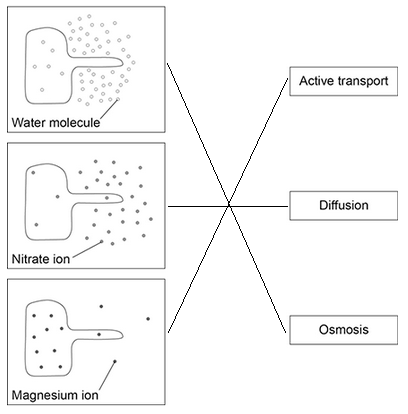
**1**

(c)     has a tail so it can swim (to an egg)

*accept has many mitochondria to release energy to swim*

**1**

(d)



*all three correct for* ***2*** *marks*

*one or two correct for* ***1*** *mark*

**2**

**[5]**

**M2.**(a)     8 (micrometres)

**1**

(b)     red blood cell(s)

**1**

white blood cell(s)

*accept named cell*

*eg phagocyte / lymphocyte*

**1**

(plasma)

transports proteins / dissolved substances / food (molecules) / urea / hormones / blood  
cells

**1**

(c)     any **one** from:

•        you could lose a lot of blood

•        bleed internally

*allow bleeding would not stop*

*allow could bleed to death*

**1**

**[5]**

**M3.**(a)     **D**

**1**

any **one** from:

•        has chloroplasts

•        has a (large) vacuole

*ignore has a (cell) wall*

**1**

(b)     **B**

**1**

does **not** have a (cell) wall

*allow has only a nucleus, (cell) membrane* ***and*** *cytoplasm*

**1**

(c)     **C**

**1**

any **one** from:

•        genetic material is not in a nucleus

*allow no nucleus*

•        has a single loop of DNA

**1**

(d)     real size = 25 / 100 000

**1**

0.00025

**1**

(conversion to) 0.25 (µm)

*allow 0.25 (µm) with no working shown for* ***3*** *marks*

**1**

**[9]**

**M4.**         (a)      (i)     (cell) membrane

**1**

(ii)     vacuole

(b)     any **two** from:

•    (cell) wall

•    chloroplast(s)

*ignore chlorophyll*

•    vacuole

*ignore cell sap*

**2**

(c)     diffusion

**1**

**[5]**

**M5.**(a)     (i)      A = (cell) wall

*ignore cellulose*

**1**

B = cytoplasm

**1**

(ii)     any **one** from:

*accept has DNA instead of a nucleus, but not just has DNA*

•        bacterial cell / it has no nucleus

*allow no mitochondria*

•        DNA free in cytoplasm

*ignore size*

•        has no vacuole / no vesicles

*ignore strands of DNA*

**1**

(b)    (i)      yeast grows best / better / well **or** optimum temperature for yeast / more yeast present

*allow yeast works best / better / well*

**1**

(yeast) makes CO2 **or** respires / respiration

*allow fermentation*

**1**

(ii)     bacterium grows best / better / well / more bacteria present **or** optimum temperature for bacterium

*ignore microorganisms / microbes*

*allow works / respires best / better / well*

**1**

(bacterium) makes (lactic) acid

*do* ***not*** *allow wrong acid*

**1**

**[7]**

**M6.**(a)     (i)      **A** − (cell) wall

**1**

**B** − cytoplasm

**1**

**C** − plasmid

**1**

(ii)     bacterium cell has cell wall / no nucleus / no mitochondria / plasmids present

*accept its DNA / genetic material is not enclosed / it has no nuclear membrane*

*it = bacterium cell*

*accept converse for animal cell*

*ignore flagella*

**1**

(iii)    any **one** from:

•        chloroplast

*ignore chlorophyll*

•        (permanent) vacuole

**1**

(b)     (Long tail) moves the sperm / allows the sperm to swim

**1**

towards the egg

*allow correct reference to other named parts of the female reproductive system*

**1**

(Mitochondria) release energy (for movement / swimming)

*allow supply / produce / provide*

**1**

in respiration **1** **[9]**

**M7.**          (a)     (cell) wall  
(cell) membrane  
cytoplasm  
vacuole

*for 1 mark each*

**4**

(b)     (i)      A

(ii)     B

*for 1 mark each*

**2**

(c)     diffusion          (*reject* osmosis)

*for 1 mark*

**1**

**[7]**

**M8.**          (a)     **A** nucleus

**1**

**B** (cell) membrane

**1**

**C** cytoplasm

**1**

(b)     (i)      it is thin

**1**

(ii)     diffusion

**1**

**[5]**

**M9.**          (a)     (i)      water (molecules) enter(s) (the cell)

***or*** *water (molecules) pass(es) through the (semi-permeable) cell membrane*

**1**

by osmosis

***or*** *because the concentration of water is*

*greater outside (the cell than inside it*

*the vacuole)*

*accept because of the concentration*

*gradient provided there is no contradiction*

**1**

(ii)     any **one** from

(it is) elastic

(it is) strong

(it is fully) permeable (to water)

***or*** *water can pass through it*

*do not credit semi-permeable*

*do not credit cell membrane is semi-permeable*

**1**

(b)     (the piece of) potato shrinks

***or*** *loses its turgor*

***or*** *becomes flabby*

***or*** *becomes flaccid*

***or*** *plasmolysis occur*

***or*** *cytoplasm pulls away from the cell wall*

(because) concentration of sugar

***or*** *because concentration of water*

**1**

(solution) is greater than concentration inside the cell / vacuole

*inside the cell / vacuole is greater than concentration (of water) outside*

**1**

water is drawn out of the cell

**1**

**[6]**

**M10.**(a)     (i)      nucleus

**1**

(ii)     diffusion

**1**

(b)     increases / larger surface area (for diffusion)

*ignore large surface area to volume ratio*

**1**

(c)     (i)      sugar / glucose

*accept amino acids / other named monosaccharides*

**1**

(ii)     against a concentration gradient

**or**

from low to high concentration

**1**

(iii)    (active transport requires) energy

**1**

(from) respiration

**1**

(d)     minerals / ions

*accept named ion ignore nutrients*

***do not accept*** *water*

**1**

**[8]**

**M11.**(a)     (i)      xylem

**1**

(ii)     water

**1**

minerals / ions / named example(s)

*ignore nutrients*

**1**

(b)     (i)      movement of (dissolved) sugar

*allow additional substances, eg amino acids / correct named sugar (allow sucrose / glucose)*

*allow nutrients / substances / food molecules if sufficiently qualified*

*ignore food alone*

**1**

(ii)     sugars are made in the leaves

**1**

so they need to be moved to other parts of the plant for respiration / growth / storage

**1**

(c)     (i)      mitochondria

**1**

(ii)     for movement of minerals / ions

*Do not accept ‘water’*

**1**

against their concentration gradient

**1**

**[9]**