

(Control of water balance (kidneys, ADH, dialysis, transplants))

Q1.a)(2018)

2400 and 2280

or

500 and 380

120

Q1.b)(2018)

respiration of glucose

Q1.c)(2018)

(more) sweating

(because) exercise releases
heat

or

need to cool the body

or

need to lose heat

or

need to maintain body
temperature

Q1.d)(2018)

more energy needed

(so) more (aerobic) respiration

(so) increased breathing (rate /
depth) (to supply oxygen **or**
remove carbon dioxide / water)

Q2.a)(2019)

pituitary

Q2.b)(2019)

ADH

Q2.c)(2019)

high(er) concentration of blood
causes (more) ADH / hormone
release

(and hormone / ADH causes)
increased permeability of kidney
tubules (to water)

(so) increased water
reabsorption

Q3.(2019)

changes in concentrations /
levels of substances / urea
are minimised

(so) less / no chance of causing
damage to body cells / tissues

not repeatedly puncturing skin
or blood not in contact with
machine

(so) less / no chance of infection
or less / no chance of blood
clots
or no need to take anti-clotting
drugs

Q4.a)(2022)

liver

Q4.b)(2022)

(no enzyme 2 made **so**) cannot
break down the toxic substance

the toxic substance is still made
(from the amino acids)

toxic substance diffuses / moves
(from cells) into the blood

Q4.c)(2022)

the toxic substance passes
through filter in kidney

or

P passes through filter in kidney

(some / all) not reabsorbed

Q4.d)(2022)

proteins contain amino acids

or

proteins are made of amino
acids

must keep (certain) amino acids
in low amount

(so) toxic substance **or P** does
not build up in the body **and**
cause damage to cells / tissues /
organs

Q5.a)(2022)

$$\frac{20\,000 \times 40}{100 \times 2.5} \quad \text{or} \quad \frac{8000}{2.5}$$

3 200 (cm³)

3.2 (dm³)

Q5.b)(2022)

to replace ions / salt lost (in sweat)

Q6.(2023)

(kidney) tubules less permeable to water

(so) less water is reabsorbed

(so) more water in urine causing increased rate of production (of urine)

(so) more water in urine causing lower concentration of dissolved substances (in urine)

Q7.(2024)

glucose **and** urea are filtered (out of the blood)

protein is not filtered (out of the blood)

all glucose reabsorbed

urea (mostly) not reabsorbed
or
urea passes out in urine

Q8.(2024)

(increased / high) ADH
increases water reabsorption

or

(increased / high) ADH
increases permeability to water

(water reabsorption) from kidney
tubules

(so) ADH increases the
concentration (of urine)

(so) ADH decreases the volume
(of urine)