

- M1.** (a) liver 1
- (b) insulin
do not accept glucagon 1
- (c) kidney 1
- (d) to replace water / ions / salt 1
- (that is) lost in sweat 1
- [5]

- M2.**
- (a) (i) kidney 1
- (ii) bladder 1
- (iii) liver 1
- (iv) lung(s) 1
- (v) skin 1
- (b) (i) 3000
allow 2970 to 3030
correct answer gains 2 marks with or without working
if answer incorrect allow 1 mark for evidence of $1550 + 450 + 1000$ (allow tolerance of $+ \text{ or } - \frac{1}{2}$ square on each) 2
- (ii) 1600
allow 1570 to 1630 1
- (iii) 1400
allow (b)(i) – (b)(ii) 1
- (iv) correct plot from (b)(iii)
tolerance $\frac{1}{2}$ square ignore width 1

- (v) cells swell / overhydrated /
damaged
accept poisoned (by urea)

1
[11]

- M3.** (a) (i) water 1
- (ii) small 1
- (iii) 3.15 1
- (b) (i) 21 000 1
- (ii) 2 years 1
- (iii) prevent rejection 1

[6]

- M4.** (a) pancreas
apply list principle 1
- (b) (i) protein
apply list principle 1
- (ii) any **one** from:
- (controlling / changing) diet
*accept sugar(y foods) / named eg
ignore references to starch / fat / protein / fibre*
 - exercise
accept example, eg go for a run
 - pancreas transplant
accept named drug eg metformin 1
- (c) (i) increase
ignore reference to women 1
- then fall 1
- relevant data quote (for male)
*eg max at ages 65–74 or starts at 10 (per thousand) or max at 130 (per thousand) or ends at 120 (per thousand)
accept a difference between any pairs of numbers in data set
accept quotes from scale eg '130' or '130 per thousand' but **not** '130 thousand'; to within accuracy of +/- 2 (per thousand)* 1
- (ii) (between 0 and 64) more females (than males) **or** less males (than females)

ignore numbers
allow eg females more diabetic than males

1

(over 65) more males (than females) or less females (than males)
allow eg males more diabetic than females

1

[8]

M5. (a) (i) skin 1

(ii) kidneys
accept kidney 1

(iii) lungs
accept lung 1

(b) (i) multiply temperature by number of students at that temperature and add them up
allow (36.8 5) + (36.9 3) + (37.0 6) + (37.1 7) + (37.2 3)
allow 888 1

divide by number of students
allow divide by 24 1

(ii) 10 / ten 1

(iii) so enzymes work (well)
ignore death / overheating / hypothermia
allow body reactions work (well) 1

[7]

M6.(a) brain

in correct order only

1

blood

1

sweat

1

(b) (i) A

1

(ii) to replace ions lost (in sweat)

accept salts

allow named examples, eg. prevent cramps

1

(iii) any **one** from:

- there is too much glucose / sugar in the sports drink
- they shouldn't have too much glucose / blood sugar
- it would cause their blood glucose / sugar to rise (too high)

1

[6]

- M7.**
- (a) (i) **B** 1
 - (ii) **D** 1
 - (iii) **C** 1
-
- (b) (i) insulin 1
 - (ii) pancreas 1
- [5]**

- M8.** (a) **A** – pituitary 1
- B** – adrenal 1
- (b) ovary 1
- (c) diaphragm 1
allow phonetic spelling
- (d) condom 1

- (e) **Level 2 (3–4 marks):**
 A detailed and coherent evaluation is provided which considers a range of advantages and disadvantages and comes to a conclusion consistent with the reasoning.

Level 1 (1–2 marks):
 An attempt to describe the advantages and disadvantages is made, which may not come to a conclusion. The logic may be inconsistent at times.

0 marks:
 No relevant content.

Indicative content

advantages of the plastic IUD:

- is effective for longer than the copper IUD
- does not need to be replaced as often as the copper IUD
- although the pain of periods are more severe, the pain with the copper IUD is likely to be worse
- can reduce the bleeding during a period
- most of the possible side effects are not serious, eg feeling sick, acne and headaches.

disadvantages of the plastic IUD:

- needs to be implanted for a period of time before it is effective ie not

- emergency contraception
- can make the pain of period more severe
- can cause more side effects than the copper IUD
- can cause some more severe side effects such as cysts on the ovaries

an understanding that the side effects are only possible and may not necessarily occur

additional examiner guidance:

- pupils should add value to the points in the table and should not just be copies verbatim
- credit can also be given for other correct advantages and disadvantages from the candidates' own knowledge and understanding
- allow converse points if clearly made

4

[9]