

- 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 <i>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 + or - ½ square on each)</i>	2
		(ii)	1600 <i>allow 1570 to 1630</i>	1
		(iii)	1400 <i>allow (b)(i) – (b)(ii)</i>	1
		(iv)	correct plot from (b)(iii) <i>tolerance ½ square ignore width</i>	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]