Question			Marking details	Marks Available
6/1	(a)	(i)	Phloem; (accept phonetic spelling)	1
		(ii)	phloem clearly identified on the diagram (letter A);	1
	(b)		Starch;	1
	(c)	(i)	Fermentation/ fermenting;	1
		(ii)	Less food crops/OWTTE; More chemicals/ fertilisers/ pesticides needed; Habitat destruction/ reduce biodiversity; *NOT deforestation/ disrupts {ecosystems/ environment}/* *destroys wildlife*	2
			Question 6/1 Total	**[6]**

Question			Marking details	Marks Available
7/2	(a)	(i)	Lymphocyte/ B cells;	1
		(ii)	{Lymphocyte/cell} has {reproduced/cloned/produced/ divided into} (identical) copies; Many times;	2
		(iii)	{Lots of/more}antibodies produced/ memory cells produced/ so there will be a rapid response;	1
	(b)		Different <u>antigens</u>; So different antibodies needed;	2
	(c)		Jenner;	1
	(d)		Prevent {blood loss/bleeding}; Prevents {pathogens/microbes} entering/ prevents <u>bacterial</u> infection;	2
			Question 7/2 total	**[9]**

Question	Marking details	Marks Available

8/3 (a) Transpiration; — 1

(b) **Indicative content** — 6

Set bubble to zero/start
Reference to use of tap
Correct ref to time (i.e. time taken or set period of time)
Correct ref to distance (i.e. set distance or distance travelled)
Record results
Repeat but now with the fan
Repeat experiment for both conditions
Compare results

5 – 6 marks
The candidate constructs an articulate, integrated account correctly linking relevant points, such as those in the indicative content, which shows sequential reasoning. The answer fully addresses the question with no irrelevant inclusions or significant omissions. The candidate uses appropriate scientific terminology and accurate spelling, punctuation and grammar.

3 – 4 marks
The candidate constructs an account correctly linking some relevant points, such as those in the indicative content, showing some reasoning. The answer addresses the question with some omissions. The candidate uses mainly appropriate scientific terminology and some accurate spelling, punctuation and grammar.

1 – 2 marks
The candidate makes some relevant points, such as those in the indicative content, showing limited reasoning. The answer addresses the question with significant omissions. The candidate uses limited scientific terminology and inaccuracies in spelling, punctuation and grammar.
0 marks

The candidate does not make any attempt or give a relevant answer worthy of credit.

(c) Any two from: — 2

(air) temperature; NOT heat

humidity;

light intensity;

water availability;

NOT amount

Question 8/3 Total **[9]**

Question	Marking details	Marks Available
4 (a)	Removal of waste;	1
(b) (i)	68;	1
(ii) I	The salts enter urine/ excreted/ some are reabsorbed;	1
II	Concentration increases; Because water intake lower **and** percentage of intake that passes into urine is lower'/ because the volume of urine is lower;	2
(iii)	Restore (normal) levels/ return to normal/ replenish salts;	1
	Question 4 Total	**[6]**

Question			Marking details	Marks Available
5	(a)	(i)	To show that the presence of protein is due to nephrotic syndrome/ to show that healthy rats do not have protein in their urine/ as a fair test/ comparison;	1
		(ii)	Protein (molecules) too big to pass through {filter/capillaries/ glomerulus/ Bowmans capsule};	1
	(b)		Any **three** from: number in <u>each group</u>; age; gender; period of time of treatment; diet (food or water); NOT amount species; type; {dose/mass/volume} of {endaravone/drug}	3
	(c)		Repeat/ larger sample;	1
	(d)		Endaravone reduces protein in urine; Some protein in urine after treatment;	2
			Question 5 Total	**[8]**

Question			Marking details	Marks Available
6	(a)	(i)	B; D;	2
	(b)	(i)	B knee jerk/ withdrawal/OWTTE;	1
		(ii)	D blinking/opening and closing the eyelid quickly;	1
			Question 6 total	**[4]**

Question			Marking details	Marks Available
7	(a)	(i)	Coronary <u>artery</u> ;	1
		(ii)	Clotting; {Stopping/ blocking/ reducing} blood flow to heart muscle;	2
		(iii)	Capillaries;	1
	(b)	(i)	14 (au);	1
		(ii)	Glucose/ oxygen;	1
			Question 7 total	**[6]**

Question	Marking details	Marks Available

Question			Marking details	Marks Available
8	(a)		(An overall trend of) increasing bacterial resistance with increasing use;	1
	(b)		If the antibiotics enter the human food chain; they may cause bacteria to become resistant;	2
	(c)	(i)	Tetracycline; correct spelling	1
		(ii)	$\underline{150} \times 100 = 60\ (\%)$ 250 Method; Answer; Correct answer = 2 marks	2
			Question 8 Total	**[6]**

Question	Marking details	Marks Available
9	Indicative content	6

Aseptic collection of milk samples.

Flame loop.

Inoculating and plating samples on separate plates.

Sealing Petri dishes.

Incubation at stated correct temperature (20-25°C)

Stated time (12-24 hours).

Count colonies on plate with stale milk.

{No/fewer} {colonies/bacteria} in boiled milk.

5 – 6 marks
The candidate constructs an articulate, integrated account correctly linking relevant points, such as those in the indicative content, which shows sequential reasoning. The answer fully addresses the question with no irrelevant inclusions or significant omissions. The candidate uses appropriate scientific terminology and accurate spelling, punctuation and grammar.

3 – 4 marks
The candidate constructs an account correctly linking some relevant points, such as those in the indicative content, showing some reasoning. The answer addresses the question with some omissions. The candidate uses mainly appropriate scientific terminology and some accurate spelling, punctuation and grammar.

1 – 2 marks
The candidate makes some relevant points, such as those in the indicative content, showing limited reasoning. The answer addresses the question with significant omissions. The candidate uses limited scientific terminology and inaccuracies in spelling, punctuation and grammar.

0 marks
The candidate does not make any attempt or give a relevant answer worthy of credit.

Question 9 Total   **[6]**