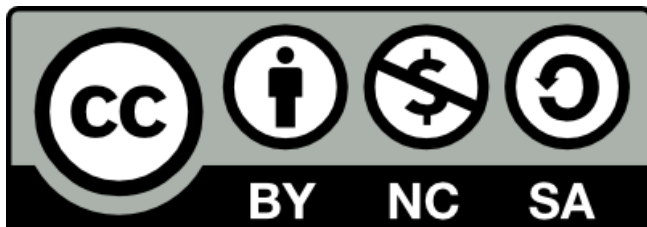




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2. Part B

B1. (0.5 points x 6 = 3 points)

	A	B	C	D	E	F
Plants		X		X		
Mammals	X		X		X	X

B2. (0.5 points x 5 = 2.5 points)

I	II	III	IV	V
D	C	E	B	A

B3. (0.5 points x 6 = 3 points)

$$\frac{735}{3} \times 122 - \left\{ \left(\frac{735}{3} - 1 \right) \times 18 \right\} - \{ 5 \times (2 \times 1) \}$$

$$= 245 \times 122 - 244 \times 18 - 5 \times 2$$

$$= 29890 - 4392 - 10$$

$$= 25488$$

When the N-terminal Met residue is assumed to have been removed,

$$\left(\frac{735}{3} - 1 \right) \times 122 - \left\{ \left(\frac{735}{3} - 1 - 1 \right) \times 18 \right\} - \{ 5 \times (2 \times 1) \}$$

$$= 244 \times 122 - 243 \times 18 - 5 \times 2$$

$$= 29768 - 4374 - 10$$

$$= 25384$$

Partial point:

- (0.5) Division by 3.
- (0.5) Subtraction of water mass of peptide bonds.
- (0.5) Number of peptide bonds: number of amino acids *minus* 1.
- (0.5) Correct molecular mass of one water molecule.
- (0.5) Subtraction of ten hydrogen molecules of five disulfide bonds.
- (0.5) Correct calculations.

B4. (3.5 points)

(1) (0.3 points x 10 = 3 points)

A	6
B	1, 3, 7, 10
C	
D	4, 9
E	2, 5, 8
F	

(2) (0.5 point : if all are correct)

1	2	3
B	C	A

B5. (0.5 points x 4 = 2 points)

I	II	III	IV
D	A	C	B

B6. (3 points)

2000

(or 2007 by using more precise Avogadro's number.)

B7. (1 points x 4 = 4 points)

I	II	III	IV
A	F	E	A

B8. (3 points)

	Deficiency symptoms (0.3x3)	Mineral mobility (0.3x3)	Metabolic roles (0.4x3)
Mg	B	C	G
Fe	A	D	E
N	B	C	F

B9. (1 points x 3 = 3 points)

I	II	III
C	D	F

B10. (4 points)

(1) (0.5 points x 4 = 2 points)

		can respond to Florigen.	cannot respond to Florigen.
The shoot apical meristems of	cold-treated annual plants	X	
	untreated annual plants	X	
	cold-treated biennial plants	X	
	untreated biennial plants	X	

(2) (0.5 points x 4 = 2 points)

		produce Florigen under the long-day condition.	do not produce Florigen in either photoperiodic condition.
The leaves of	cold-treated annual plants	X	
	untreated annual plants	X	
	cold-treated biennial plants	X	
	untreated biennial plants		X

B11. (3 points)

(1) (1 point)

A	B	C	D
		X	

(2) (1 point)

A	B	C	D
		X	

(3) (1 point)

A	B	C	D
			X

B12. (1 points x 3 = 3 points)

	A	B	C
I	X		
II		X	
III	X		

B13. (1 points x 3 = 3 points)

I	II	III
A	C	B

B14. (2.5 points)

(1) (0.5 point)

A	B
	X

(2) (0.5 point)

A	B	C	D
---	---	---	---

		X	
--	--	----------	--

(3) (0.5 points x 3 = 1.5 points)

C	E	G
----------	----------	----------

B15. (1 points x 4 = 4 points)

	Hypothesis 1	Hypothesis 2	Hypothesis 3	Hypothesis 4
Rejected	X	X		
Not rejected			X	X

B16. (2 points)

(1) (1 point)

A	B	C	D	E
	X			

(2) (1 point)

A	B	C	D	E
X				

B17. (2 points)

(1) (0.2 point x 4 = 0.8 points)

	A	B	C	D
TRUE	X	X		X
FALSE			X	

(2) (0.3 points x 4 = 1.2 points)

	A	B	C	D
TRUE	X		X	X
FALSE		X		

B18. (3 points)

(1) (1 points x 2 = 2 points)

A	B	C	D	E
X			X	

(Choosing more than 2 gives no point.)

(2) (1 point)

A	B	C	D
			X

B19. (3 points)

(1) (0.5 point)

A	B	C	D	E
---	---	---	---	---

			X	
--	--	--	----------	--

(2) (0.5 point)

A	B	C	D
			X

(2) (1 points x 2 = 2 points)

A	B	C	D	E	F
		X		X	

(Choosing more than 2 gives no point.)

B20. (3 points)

(1) (1 points x 2 = 2 points)

Acc	190	m
Aml	340	m

(2) (1 point)

A	B	C	D
	X		

B21. (0.5 points x 4 = 2 points)

i	ii	iii	iv
C	D	B	A

B22. (2 points)

(1) (1 point)

A	B	C	D
	X		

(2) (1 point)

A	B	C	D	E	F
X					

B23. (4 points)

(1) (2 points)

A	B	C	D	E	F
	X				

(2) (2 points)

A	B	C	D	E
		X		

B24. (4 points)

(1) (1 point)

A	B	C	D	E
	X			

(2) (1 point)

A	B	C	D	E
		X		

(3) (2 points)

26	%
----	---

B25. (3 points)

(1) (2 points)

2.5	X	10^6
(2,500,000)		years

5×10^6 (5,000,000) years: 1 point

(2) (1 point)

A	B	C
		X

B26. (3 points)

(1) (1 point)

A	B	C	D
			X

(2) (1 point)

A	B	C	D
			X

(3) (1 point)

A	B	C	D
		X	

B27. (4 points)

(1) (2 points)

34	%
----	---

or 0.34

(2) (1 point)

I	II	III	IV
			X

(3) (1 point)

A	B	C	D
---	---	---	---

X			
---	--	--	--

B28. (1 points x 3 = 3 points)

A	B	C	D	E	F	G	H
	X			X	X		

B29. (3 points)

(1) (0.5 point x 2 = 1 points)

A	B	C	D	E	F	G
		X	X			

(Choosing more than 2 gives no point.)

(2) (1 point)

A	B	C	D	E	F	G
	X					

(3) (1 point)

A	B	C	D	E	F	G
X						

B30. (1 points x 3 = 3 points)

I	II	III
D	C	B

B31. (0.5 points x 5 = 2.5 points)

	A	B	C	D	E
TRUE	X	X		X	
FALSE			X		X

B32. (1 points x 3 = 3 points)

	A	B	C
TRUE			X
FALSE	X	X	

B33. (0.5 points x 6 = 3 points)

I	II	III	IV	V	VI
D	C	B	D	E	B

B34. (5 points)

(1) (1 point)

A	B	C	D	E	F	G	H
		X					

(2) (0.5 points x 6 = 3 points)

	Domain I	Domain II	Function
Older	3	1	4
Newer	1	4	1

(3) (1 point: if all are correct)

I	II	III
B	C	A

B35. (4 points)

(1) (2 points)

A	B	C
	X	

(2) (1 point)

2, 6

Since the number of correct choice is not stated in the question, the points are calculated by (number of the correct answer) x 0.5 – (number of the wrong answer) x 0.3.

(3) (1 point)

A	B	C	D	E	F	G	H	I
				X				

Since the answer of (3) is consequence of the question (1), the combination of the wrong answer (1) A and the answer of (3) B gives 0.5 point for (3), and that of (1) C and (3) H, gives 0.5 point for (3).