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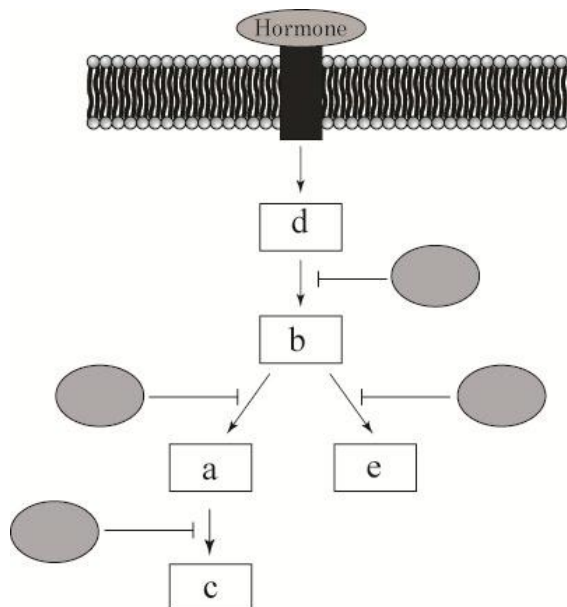
Student Code: _____

Theoretical Test Part B

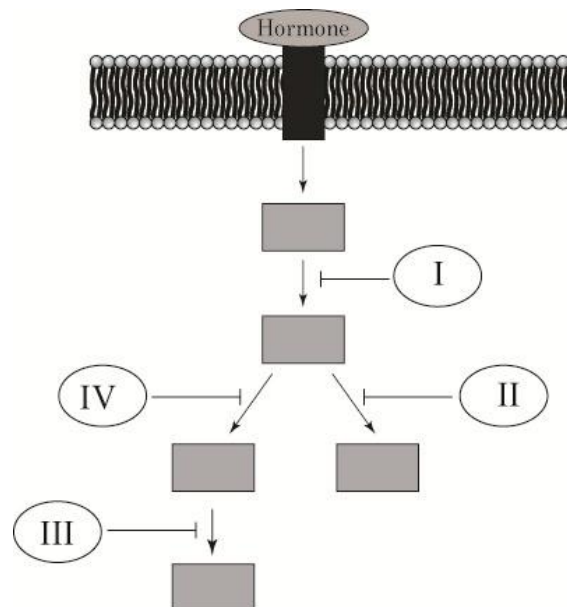
Answer Key

B1 (2.7 points)

B1.1 (1.5 points = 0.3×5)



B1.2 (1.2 points = 0.3×4)



B2. (2.7 points = 0.3 × 9)

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>
A				√	√	
B		√				√
C	√				√	
D		√	√			√

B3. (1.5 points = 0.3 × 5)

Organ and tissue	Choose from <i>a~e</i>
Brain	<i>b</i>
Liver	<i>c</i>
Heart muscle	<i>e</i>
Skeletal muscle	<i>a</i>
Adipose tissue	<i>d</i>

B4. (2.2 points)

B4.1 (1 point)

A	B	C	D	E
			√	

B4.2 (1.2 points = 0.3×4)

Mutant	Able to show pattern	Unable to show pattern
I		√
II	√	
III		√
IV	√	

B5. (1.5 points = 0.5×3)

Description	True	false
I	√	
II	√	
III		√

B6. (2 points = 0.5×4)

Description	True	False
I		√
II	√	
III	√	
IV	√	

B7. (2 points)

B7.1 (1 points = 0.2×5)

Explanation	True	false
I	√	
II	√	
III		√
IV	√	
V	√	

B7.2 (1 point = 0.2×5)

Description	True	False
I	√	
II	√	
III	√	
IV		√
V	√	

B8. (1.5 points = 0.5×3)

Explanation	True	False
A		√
B	√	
C		√

B9. (2 points)

A	B	C	D	E
	√			

B10. (1.5 points = 0.5 × 3)

	True	False
A	√	
B		√
C	√	

B11. (2 points)

1.0, 3.5	kb
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B12. (1.5 points = 0.5 × 3)

Cellular activity and response	Graphs			
	A	B	C	D
I	√			
II		√		
III			√	

B13. (2 points = 0.5×4)

Description	True	False
I		√
II	√	
III		√
IV	√	

B14. (1.5 points = 0.5×3)

Description	True	False
I	√	
II		√
III		√

B15. (3 points)

B15.1 (1.2 points = 0.3×4)

Property	Prokaryote	Eukaryote
I	√	
II		√
III	√	
IV	√	

B15.2 (1.8 points = 0.3×6)

Recombinant gene	Cellular location of expressed proteins	Observed polypeptides
I-II-III	D	H
I-III	B	H
II-III	A	G
III	A	H

B16. (1.5 points = 0.5 × 3)

Gene mutation	Callus phenotype			
	A	B	C	D
I	√			
II		√		
III				√

B17. (2.4 points = 0.4 × 6)

Characterization	Cell type (1-6)	Initials for this cell type (7-11)
A. Origin of root hairs	1	11
B. Storage parenchyma	2	9
C. Perception of gravity	6	10
D. Origin of lateral roots	4	7

B18. (1.5 points = 0.5×3)

	True	False
I	√	
II	√	
III		√
IV	√	
V		√

B19. (1.8 points = 0.3×6)

Function	<i>a</i>	<i>b</i>	<i>c</i>
I		√	
II	√		
III	√		
IV			√
V	√		
VI	√		

B20. (2.2 points)

B20.1 (1.2 points = 0.3×4)

Labels in the Figure	Types of joint		
	A	B	C
<i>a</i>	✓		
<i>b</i>		✓	
<i>c</i>			✓
<i>d</i>		✓	

B20.2 (1 point = 0.5×2)

Function	true	False
I		✓
H		✓

B21. (2.4 points = 0.3×8)

B21.1 (1.2 points = 0.3×4) **B21.2** (1.2 points = 0.3×4)

Morphological character (1~9)	Character in figure (<i>a~g</i>)
3	<i>c</i>
5	<i>a</i>
7	<i>h</i>
9	<i>g</i>

B22. (2 points = 0.5×4)

Number in the Graph	Heart
①	E
②	C
③	A
④	D

B23. (1.5 points = 0.5×3)

Explanation	True	False
A	√	
B		√
C	√	

B24. (1.8 points = 0.3×6)

Symptom	Expected	Unexpected
A	√	
B		√
C	√	
D	√	
E		√
F	√	

B25. (1.5 points = 0.5 × 3)

Description	Blood vessel		
	A	B	C
I	√		
II	√		
III		√	

B26. (3 points)

B26.1 (1 point)

A	B	C	D	E
			√	

B26.2 (1 point)

A	B	C	D	E
√				

B26.3 (1 point = 0.2×5)

Description	True	False
I	√	
II	√	
III	√	
IV		√
V	√	

B27. (3 points)

B27.1 (1 point)

50 m/sec

B27.2 (1 point)

A	B	C	D	E
√				

B27.3 (0.5 point)

d

B27.4 (0.5 point)

a

B28. (2.7 points)

B28.1 (1.8 points = 0.3×6)

	True	False
I	√	
II		√
III	√	
IV	√	
V		√
VI	√	

B28.2 (0.9 point = 0.1×9)

	Adaptation for flight	No adaptation for flight
(a)		√
(b)		√
(c)	√	
(d)		√
(e)		√
(f)	√	
(g)		√
(h)	√	
(i)		√

B29. (3 points)

B29.1 (1 point)

112

B29.2 (1 point = 0.5×2)

(i)	20
(ii)	12.4

B29.3 (1 point)

A	B	C	D	E
			√	

B30. (2.6 points)

B30.1 (1 point)

A	B	C	D	E
			√	

B30.2 (1.6 points = 0.4×4)

A	B	C	D
4	6	8	5

B31. (1.5 points = 0.3×5)

	True	False
I		√
II		√
III	√	
IV	√	

B32. (2 points = 0.4×5)

Mutant	Male	Female
A	√	
B		√
C		√
D		√
E	√	

B33. (2.4 points = 0.4×6)

	True	False
I		√
II		√
III	√	
IV		√
V	√	
VI	√	

B34. (3 points)

B34.1 (0.9 point = 0.3×3)

	True	False
I		√
II	√	
III	√	

B34.2 (0.8 point)

4

B34.3 (1.3 points)

20

 %

B35. (2 points)

B35.1 (1 point)

A	B	C	D
	√		

B35.2 (1 point)

	A	B	C	D
Possible	√		√	
Impossible		√		√

B36. (2 points)

B36.1 (1 point)

A	B	C	D	E
√				

B36.2 (1 point)

A	B	C	D	E
	√			

B37. (2 points)

22	%
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B.38 (2 points = 0.4×5)

Description	True	False
A		√
B	√	
C	√	
D		√
E		√

B39. (3 points)

B39.1 (1 point = 0.2 × 5)

	Required	Not required
A	√	
B	√	
C	√	
D	√	
E	√	

B39.2 (1 point)

A	B	C	D	E
				√

B39.3 (1 point)

A	B	C	D	E
	√			

B40. (2 points)

B40.1 (1 point)

A	B	C	D	E
		√		

B40.2 (1 point)

A	B	C	D	E
			√	

B41. (2 points)

B41.1 (1 point)

<i>B</i>	0.25
<i>b</i>	0.75

B41.2 (1 point)

<i>B</i>	0.125
<i>b</i>	0.875

B42. (2 points = 0.5×4)

	Small island	Large island
Island near mainland	S3	S4
Island far from mainland	S1	S2

B43. (2 points = 0.5×4)

Description	True	False
I	√	
II	√	
III		√
IV	√	

B44. (2.2 points)

B44.1 (1.2 points = 0.3×4)

	True	False
I	√	
II	√	
III		√
IV		√

B44.2 (1 point)

2000

 g C/m²

B45. (2.8 points)

B45.1 (0.8 point = 0.2×4)

	True	False
I		√
II	√	
III		√
IV		√

B45.2 (2 points = 0.4×5)

Description	Gas (a~f)
I	c
II	a
III	e
IV	d
V	b

B46. (2 points)

49	%
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B47. (2 points)

A	B	C	D
√			

B48. (2 points)

B48.1 (1 point)

	A	B	C	D	E
(1)		√			
(2)				√	

B48.2 (1 point)

A	B	C	D	E
	√			

B49. (2 points = 0.4×5)

	True	False
I		√
II	√	
III	√	
IV	√	

B50. (1.5 points = 0.3×5)

	A	B	C	D	E
+	√		√		√
-		√		√	

B51. (2.4 points)

B51.1 (1.2 points = 0.3×4)

Energy source \ Carbon source	Oxidation of inorganic molecules	Light
CO ₂	II	I
Organic molecules	IV	III

B51.2 (1.2 points = 0.3×4)

Nutrition mode	Organisms	
I	<i>a</i>	<i>f</i>
II	<i>e</i>	<i>h</i>
III	<i>b</i>	<i>c</i>
IV	<i>d</i>	<i>g</i>

B52. (2 points = 0.5×4)

(1)	B
(2)	D
(3)	A
(4)	C