

Country Code: \_\_\_\_\_

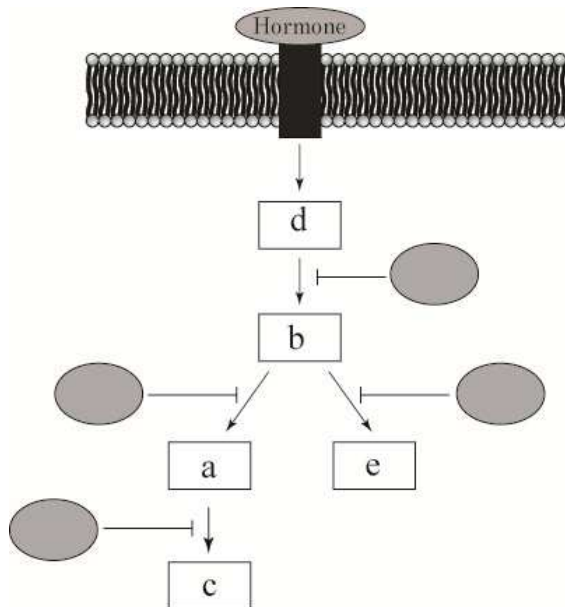
Student Code: \_\_\_\_\_

# Theoretical Test Part B

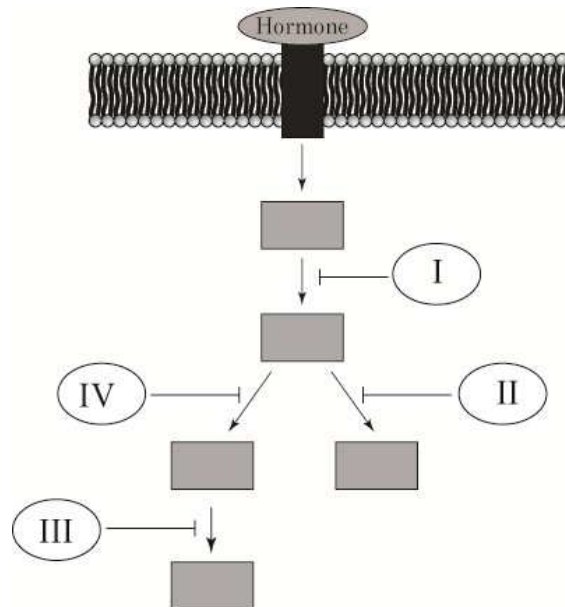
## Answer Key

**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 =  $0.5 \times 4$ )

Description	True	False
I		√
II	√	
III	√	
IV	√	

**B7.** (2 points)

**B7.1** (1 points =  $0.2 \times 5$ )

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

**B7.2** (1 point =  $0.2 \times 5$ )

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

**B8.** (1.5 points =  $0.5 \times 3$ )

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
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 kb

**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	<b>D</b>	<b>H</b>
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	<b>9</b>
C. Perception of gravity	6	10
D. Origin of lateral roots	4	<b>7</b>

**B18.** (1.5 points =  $0.5 \times 3$ )

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

**B19.** (1.8 points =  $0.3 \times 6$ )

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
a	✓		
b		✓	
e			✓
d		✓	

**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 =  $0.5 \times 3$ )

Explanation	True	False
A	√	
B		√
C	√	

**B24.** (1.8 points =  $0.3 \times 6$ )

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 =  $0.2 \times 5$ )

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

**B27.** (3 points)

**B27.1** (1 point)

<b>50</b>
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 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 =  $0.3 \times 6$ )

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



**B28.2** (0.9 point = 0.1 × 9)

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

**B29.** (3 points)

**B29.1** (1 point)

112
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**B29.2** (1 point =  $0.5 \times 2$ )

(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 =  $0.4 \times 4$ )

A	B	C	D
4	6	8	5

**B31.** (1.5 points =  $0.3 \times 5$ )

	True	False
I		√
II		√
III	√	
IV	√	

**B32.** (2 points =  $0.4 \times 5$ )

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

**B33.** (2.4 points =  $0.4 \times 6$ )

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

**B34.** (3 points)

**B34.1** (0.9 point =  $0.3 \times 3$ )

	True	False
I		√
II	√	
III	√	

**B34.2** (0.8 point)

4
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**B34.3** (1.3 points)

20	%
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**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 =  $0.4 \times 5$ )

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 =  $0.5 \times 4$ )

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

**B43.** (2 points =  $0.5 \times 4$ )

Description	True	False
I	√	
II	√	
III		√
IV	√	

**B44.** (2.2 points)

**B44.1** (1.2 points =  $0.3 \times 4$ )

	True	False
I	√	
II	√	
III		√
IV		√

**B44.2** (1 point)

2000
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 g C/m<sup>2</sup>

**B45.** (2.8 points)

**B45.1** (0.8 point =  $0.2 \times 4$ )

	True	False
I		√
II	√	
III		√

IV		√
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**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 =  $0.4 \times 5$ )

	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 <sub>2</sub>	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>
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**B52.** (2 points = 0.5 × 4)

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