

# PHYSICAL SETTING CHEMISTRY

Thursday, January 26, 2012 — 1:15 to 4:15 p.m., only

## ANSWER BOOKLET

Student ..... Sex:  Male  
 Female

Teacher .....

School ..... Grade .....

Answer all questions in this examination. Record your answers in this booklet.

Part	Maximum Score	Student's Score
A	30	
B-1	20	
B-2	15	
C	20	
Total Written Test Score (Maximum Raw Score: 85)		<input type="text"/>
Final Score (from conversion chart)		<input type="text"/>
Raters' Initials:		
Rater 1 .....		Rater 2 .....

### Part A

- |          |          |          |
|----------|----------|----------|
| 1 .....  | 11 ..... | 21 ..... |
| 2 .....  | 12 ..... | 22 ..... |
| 3 .....  | 13 ..... | 23 ..... |
| 4 .....  | 14 ..... | 24 ..... |
| 5 .....  | 15 ..... | 25 ..... |
| 6 .....  | 16 ..... | 26 ..... |
| 7 .....  | 17 ..... | 27 ..... |
| 8 .....  | 18 ..... | 28 ..... |
| 9 .....  | 19 ..... | 29 ..... |
| 10 ..... | 20 ..... | 30 ..... |

Part A Score

### Part B-1

- |          |          |
|----------|----------|
| 31 ..... | 41 ..... |
| 32 ..... | 42 ..... |
| 33 ..... | 43 ..... |
| 34 ..... | 44 ..... |
| 35 ..... | 45 ..... |
| 36 ..... | 46 ..... |
| 37 ..... | 47 ..... |
| 38 ..... | 48 ..... |
| 39 ..... | 49 ..... |
| 40 ..... | 50 ..... |

Part B-1 Score

The declaration below must be signed when you have completed the examination.

I do hereby affirm, at the close of this examination, that I had no unlawful knowledge of the questions or answers prior to the examination and that I have neither given nor received assistance in answering any of the questions during the examination.

Signature

Part B-2

For Raters Only

51 \_\_\_\_\_ pm

51

52 \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

52

53 Particle: \_\_\_\_\_

53

Charge of particle: \_\_\_\_\_

54 \_\_\_\_\_  
\_\_\_\_\_

54

55 \_\_\_\_\_ °C

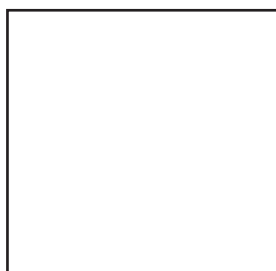
55

56 \_\_\_\_\_

56

57

Key
○ = particle of the substance



One phase of the sample at minute 4



A different phase of the sample at minute 4

57

**For Raters  
Only**

**58**

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**58**

**59**

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**59**

**60**

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**60**

**61**

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**61**

**62**

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**62**

**For Raters  
Only**

63 \_\_\_\_\_

63

64  $\text{HNO}_3(\text{aq}) + \text{NaOH}(\text{aq}) \rightarrow$  \_\_\_\_\_  $+$  \_\_\_\_\_

64

65

65

**Total Score  
for Part B-2**

Part C

For Raters Only

66 \_\_\_\_\_

66

67 \_\_\_\_\_ and \_\_\_\_\_

67

68 \_\_\_\_\_

68

69 \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

69

70 \_\_\_\_\_

70

71 \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

71

72 \_\_\_\_\_

72

73 \_\_\_\_\_

\_\_\_\_\_

73

74 \_\_\_\_\_ Fe(s) + \_\_\_\_\_ O<sub>2</sub>(g) + \_\_\_\_\_ H<sub>2</sub>O(l) → \_\_\_\_\_ Fe(OH)<sub>2</sub>(s)

74

**For Raters  
Only**

75 \_\_\_\_\_

75

76 \_\_\_\_\_ mol

76

77

77

78 \_\_\_\_\_

78

79 \_\_\_\_\_

\_\_\_\_\_

79

\_\_\_\_\_

80 \_\_\_\_\_ kJ

80

81 \_\_\_\_\_

\_\_\_\_\_

81

**For Raters  
Only**

82 \_\_\_\_\_  
\_\_\_\_\_

82

83 \_\_\_\_\_  
\_\_\_\_\_

83

84  ${}_{27}^{60}\text{Co} \rightarrow {}_{-1}^0\beta + \text{_____}$

84

85 \_\_\_\_\_ y

85

**Total Score  
for Part C**

