Chapter 5
General Chemistry CH115
UMass Boston
Fall 2007

Name_____

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

1) Calculate the kinetic energy in J of an electron moving at 6.00×10^6 m/s. The mass of an electron is 9.11×10^{-28}g. 1) _____

A) 3.28×10^{-14}

B) 1.64×10^{-14}

C) 4.98×10^{-48}

D) 6.56×10^{-14}

E) 2.49×10^{-48}

2) Calculate the kinetic energy in joules of an automobile weighing 2135 lb and traveling at 55 mph. (1 mile = 1.6093 km, 1 lb = 453.59 g) 2) _____

A) 3.2×10^6 B) 1.2×10^4 C) 3.2×10^{-6} D) 2.9×10^5 E) 5.9×10^5

3) The kinetic energy of a 7.3 kg steel ball traveling at 18.0 m/s _____ J. 3) _____

A) 66 B) 2.4×10^3 C) 1.2×10^3 D) 1.3×10^2 E) 7.3

4) Calculate the kinetic energy in joules of a 150 lb jogger (68.1 kg) traveling at 12.0 mile/hr (5.36 m/s). 4) _____

A) 68.1 B) 365 C) 1.96×10^3 D) 183 E) 978

5) Calculate the kinetic energy in joules of an 80.0 g bullet traveling at 300.0 m/s. 5) _____

A) 80.0 B) 1.20×10^4 C) 3.60×10^6 D) 3.60×10^3 E) 12.0

6) The kinetic energy of a 23.2-g object moving at a speed of 81.9 m/s is _____ J. 6) _____

A) 77,800 B) 0.95 C) 145 D) 77.8 E) 1900

7) The kinetic energy of a 23.2-g object moving at a speed of 81.9 km/hr is _____ J. 7) _____

A) 1.43×10^{-3}

B) 77.8

C) 1900

D) 6.00

E) 145

8) The kinetic energy of a 23.2-g object moving at a speed of 81.9 km/hr is _____ kcal. 8) _____

A) 1.43×10^{-3}

B) 6.00

C) 454

D) 0.0251

E) 1900

9) A 100-watt electric incandescent light bulb consumes _____ J of energy in 24 hours. 9) _____

A) 4.17 B) 8.64×10^{6} C) 2.40×10^{3} D) 8.64×10^{3} E) 2.10×10^{3}

10) The ΔE of a system that releases 12.4 J of heat and does 4.2 J of work on the surroundings is _____ J. 10) _____

A) -16.6 B) 12.4 C) 16.6 D) 4.2 E) -8.2

11) The value of ΔE for a system that performs 213 kJ of work on its surroundings and loses 79 kJ of heat is _____ kJ. 11) _____

A) -292 B) -134 C) +134 D) -213 E) +292

12) Calculate the value of ΔE in joules for a system that loses 50 J of heat and has 150 J of work performed on it by the surroundings. 12) _____

A) -100 B) 100 C) +200 D) 50 E) -200

13) The change in the internal energy of a system that absorbs 2,500 J of heat and that does 7,655 J of work on the surroundings is _____ J. 13) _____

A) -10,155 B) 10,155 C) -5,155 D) 1.91×10^{7} E) 5,155

14) The change in the internal energy of a system that releases 2,500 J of heat and that does 7,655 J of work on the surroundings is _____ J. 14) _____

A) -10,155

B) -1.91×10^{7}

C) 5,155

D) 10,155

E) -5,155

15) The value of $\Delta H°$ for the reaction below is -72 kJ. _____ kJ of heat are released when 1.0 mol of HBr is formed in this reaction. 15) _____

$$H_2\,(g) + Br_2\,(g) \rightarrow 2HBr\,(g)$$

A) 0.44 B) 144 C) -72 D) 72 E) 36

16) The value of $\Delta H°$ for the reaction below is -126 kJ. _____kJ are released when 2.00 mol of NaOH is formed in the reaction? 16) _____

$$2Na_2O_2\ (s) + 2H_2O\ (l) \rightarrow 4NaOH\ (s) + O_2\ (g)$$

A) 252 B) 7.8 C) -126 D) 63 E) 3.9

17) The value of $\Delta H°$ for the reaction below is -126 kJ. The amount of heat that is released by the reaction of 25.0 g of Na_2O_2 with water is _____ kJ. 17) _____

$$2Na_2O_2\ (s) + 2H_2O\ (l) \rightarrow 4NaOH\ (s) + O_2\ (g)$$

A) 20.2 B) 40.4 C) 67.5 D) -126 E) 80.8

18) The value of $\Delta H°$ for the reaction below is -790 kJ. The enthalpy change accompanying the reaction of 0.95 g of S is _____ kJ. 18) _____

$$2S\ (s) + 3O_2\ (g) \rightarrow 2SO_3\ (g)$$

A) -12 B) -790 C) -23 D) 23 E) 12

19) The value of $\Delta H°$ for the reaction below is -6535 kJ. _____ kJ of heat are released in the combustion of 16.0 g of C_6H_6 (l)? 19) _____

$$2C_6H_6\ (l) + 15O_2\ (g) \rightarrow 12CO_2\ (g) + 6H_2O\ (l)$$

A) 5.23×10^4 B) 2.68×10^3 C) -6535 D) 673 E) 1.34×10^3

20) The value of $\Delta H°$ for the reaction below is -482 kJ. Calculate the heat (kJ) released to the surroundings when 12.0 g of CO (g) reacts completely. 20) _____

$$2CO\ (g) + O_2\ (g) \rightarrow 2CO_2\ (g)$$

A) 2.89×10^3 B) 207 C) -482 D) 103 E) 65.7

21) The value of $\Delta H°$ for the reaction below is -336 kJ. Calculate the heat (kJ) released to the surroundings when 23.0 g of HCl is formed. 21) _____

$$CH_4\ (g) + 3Cl_2\ (g) \rightarrow CHCl_3\ (l) + 3HCl\ (g)$$

A) 177 B) 70.7 C) 211 D) 2.57×10^3 E) -336

22) The value of $\Delta H°$ for the reaction below is -186 kJ. Calculate the heat (kJ) released from the reaction of 25 g of Cl_2. 22) _____

$$H_2\,(g) + Cl_2\,(g) \rightarrow 2HCl\,(g)$$

A) 66 B) 47 C) 33 D) 5.3×10^2 E) -186

23) The enthalpy change for the following reaction is -483.6 kJ: 23) _____

$$2H_2\,(g) + O_2\,(g) \rightarrow 2H_2O\,(g)$$

Therefore, the enthalpy change for the following reaction is _____ kJ:

$$4H_2\,(g) + 2O_2\,(g) \rightarrow 4H_2O\,(g)$$

A) -483.6 B) 2.34×10^5 C) 483.6 D) -967.2 E) 967.2

24) The value of $\Delta H°$ for the reaction below is +128.1 kJ: 24) _____

$$CH_3OH\,(l) \rightarrow CO\,(g) + 2H_2\,(g)$$

How many kJ of heat are consumed when 15.5 g of CH_3OH (l) decomposes as shown in the equation?

A) 0.48 B) 32 C) 8.3 D) 62.0 E) 1.3×10^2

25) The value of $\Delta H°$ for the reaction below is +128.1 kJ: 25) _____

$$CH_3OH\,(l) \rightarrow CO\,(g) + 2H_2\,(g)$$

How many kJ of heat are consumed when 5.10 g of H_2 (g) is formed as shown in the equation?

A) 62.0 B) 653 C) 326 D) 162 E) 128

26) The value of $\Delta H°$ for the reaction below is +128.1 kJ: 26) _____

$$CH_3OH\,(l) \rightarrow CO\,(g) + 2H_2\,(g)$$

How many kJ of heat are consumed when 5.10 g of CO (g) is formed as shown in the equation?

A) 0.182 B) 23.3 C) 62.0 D) 8.31 E) 162

27) The value of $\Delta H°$ for the reaction below is +128.1 kJ: 27) _____

$$CH_3OH\ (l) \rightarrow CO\ (g) + 2H_2\ (g)$$

How many kJ of heat are consumed when 5.75 g of CO (g) reacts completely with hydrogen to form CH_3OH (l)?

A) 162 B) 8.3 C) 62.0 D) 26.3 E) 23.3

28) The value of $\Delta H°$ for the reaction below is -1107 kJ: 28) _____

$$2Ba\ (s) + O_2\ (g) \rightarrow 2BaO\ (s)$$

How many kJ of heat are released when 5.75 g of Ba (s) reacts completely with oxygen to form BaO (s)?

A) 46.4 B) 23.2 C) 96.3 D) 26.3 E) 193

29) The value of $\Delta H°$ for the reaction below is -1107 kJ: 29) _____

$$2Ba\ (s) + O_2\ (g) \rightarrow 2BaO\ (s)$$

How many kJ of heat are released when 5.75 g of BaO (s) is produced?

A) 23.2 B) 193 C) 96.3 D) 20.8 E) 56.9

30) The value of $\Delta H°$ for the reaction below is -1107 kJ: 30) _____

$$2Ba\ (s) + O_2\ (g) \rightarrow 2BaO\ (s)$$

How many kJ of heat are released when 15.75 g of Ba (s) reacts completely with oxygen to form BaO (s)?

A) 35.1 B) 20.8 C) 63.5 D) 70.3 E) 114

31) The molar heat capacity of a compound with the formula C_2H_6SO is 88.0 J/mol-K. The specific heat of this substance is _____ J/g-K. 31) _____

A) 1.13 B) -88.0 C) 88.0 D) 6.88×10^3 E) 4.89

32) A sample of aluminum metal absorbs 9.86 J of heat, upon which the temperature of the sample increases from 23.2°C to 30.5°C. Since the specific heat capacity of aluminum is 0.90 J/g-K, the mass of the sample is _____ g. 32) _____

A) 65 B) 72 C) 6.6 D) 8.1 E) 1.5

33) The specific heat capacity of lead is 0.13 J/g-K. How much heat (in J) is required to raise the temperature of 15 g of lead from 22°C to 37°C? 33) _____

A) 2.0 B) 5.8×10^{-4} C) 29 D) -0.13 E) 0.13

34) The temperature of a 15-g sample of lead metal increases from 22°C to 37°C upon the addition of 29.0 J of heat. The specific heat capacity of the lead is _____ J/g-K. 34) _____

A) 1.9 B) 29 C) -29 D) 0.13 E) 7.8

35) The specific heat of bromine liquid is 0.226 J/g • K. The molar heat capacity (in J/mol-K) of bromine liquid is _____. 35) _____

A) 707 B) 0.226 C) 18.1 D) 9.05 E) 36.1

36) The specific heat of liquid bromine is 0.226 J/g-K. How much heat (J) is required to raise the temperature of 10.0 mL of bromine from 25.00°C to 27.30°C? The density of liquid bromine: 3.12 g/mL. 36) _____

A) 16.2 B) 5.20 C) 10.4 D) 300 E) 32.4

37) The ΔH for the solution process when solid sodium hydroxide dissolves in water is 44.4 kJ/mol. When a 13.9-g sample of NaOH dissolves in 250.0 g of water in a coffee-cup calorimeter, the temperature increases from 23.0°C to _____°C. Assume that the solution has the same specific heat as liquid water, i.e., 4.18 J/g-K. 37) _____

A) 37.8°C B) 37.0°C C) 40.2°C D) 24.0°C E) 35.2°C

38) ΔH for the reaction 38) _____

$$IF_5\ (g) \rightarrow IF_3\ (g) + F_2\ (g)$$

is _____ kJ, give the data below.

$$IF\ (g) + F_2\ (g) \rightarrow IF_3\ (g) \qquad \Delta H = -390\ kJ$$

$$IF\ (g) + 2\ F_2\ (g) \rightarrow IF_5\ (g) \qquad \Delta H = -745\ kJ$$

A) +35 B) +1135 C) -35 D) -1135 E) +355

39) Given the following reactions 39) _____

$$Fe_2O_3\ (s) + 3CO\ (s) \rightarrow 2Fe\ (s) + 3CO_2\ (g) \qquad \Delta H = -28.0\ kJ$$

$$3Fe\ (s) + 4CO_2\ (s) \rightarrow 4CO\ (g) + Fe_3O_4\ (s) \qquad \Delta H = +12.5\ kJ$$

the enthalpy of the reaction of Fe_2O_3 with CO

$$3Fe_2O_3\ (s) + CO\ (g) \rightarrow CO_2\ (g) + 2Fe_3O_4\ (s)$$

is _____ kJ.

A) -15.5 B) +109 C) -59.0 D) 40.5 E) -109

40) Given the following reactions 40) _____

$N_2\,(g) + 2O_2\,(g) \rightarrow 2NO_2\,(g)$ $\Delta H = 66.4$ kJ

$2NO\,(g) + O_2\,(g) \rightarrow 2NO_2\,(g)$ $\Delta H = -114.2$ kJ

the enthalpy of the reaction of the nitrogen to produce nitric oxide

$N_2\,(g) + O_2\,(g) \rightarrow 2NO\,(g)$

is _____ kJ.

A) 180.6 B) -180.6 C) 90.3 D) 47.8 E) -47.8

41) Given the following reactions 41) _____

(1) $2NO \rightarrow N_2 + O_2$ $\Delta H = -180$ kJ
(2) $2NO + O_2 \rightarrow 2NO_2$ $\Delta H = -112$ kJ

the enthalpy of the reaction of nitrogen with oxygen to produce nitrogen dioxide

$N_2 + 2O_2 \rightarrow 2NO_2$

is _____ kJ.

A) -292 B) -146 C) -68 D) 292 E) 68

42) Calculate $\Delta H°$ (in kJ) for reaction 3. 42) _____

$2S\,(s) + 3O_2\,(g) \rightarrow 2SO_3\,(g)$ $\Delta H = -790$ kJ
$S\,(s) + O_2\,(g) \rightarrow SO_2\,(g)$ $\Delta H = -297$ kJ

the enthalpy of the reaction in which sulfur dioxide is oxidized to sulfur trioxide

$2SO_2\,(g) + O_2\,(g) \rightarrow 2SO_3\,(g)$

is _____ kJ.

A) -1384 B) 1087 C) 196 D) -196 E) -543

43) Given the following reactions 43) _____

$CaCO_3\ (s) \rightarrow CaO\ (s) + CO_2\ (g)$ $\Delta H = 178.1$ kJ

$C\ (s, graphite) + O_2\ (g) \rightarrow CO_2\ (g)$ $\Delta H = -393.5$ kJ

the enthalpy of the reaction

$CaCO_3\ (s) \rightarrow CaO\ (s) + C\ (s, graphite) + O_2\ (g)$

is _____ kJ.

A) -571.6 B) 571.6 C) 7.01×10^4 D) 215.4 E) -215.4

44) Given the following reactions 44) _____

$H_2O\ (l) \rightarrow H_2O\ (g)$ $\Delta H = 44.01$ kJ

$2H_2\ (g) + O_2\ (g) \rightarrow 2H_2O\ (g)$ $\Delta H = -483.64$ kJ

the enthalpy for the decomposition of liquid water into gaseous hydrogen and oxygen

$2H_2O\ (l) \rightarrow 2H_2\ (g) + O_2\ (g)$

is _____ kJ.

A) 571.66 B) 527.65 C) -527.65 D) 439.63 E) -395.62

45) Given the following reactions 45) _____

$N_2\ (g) + O_2\ (g) \rightarrow 2NO\ (g)$ $\Delta H = +180.7$ kJ

$2NO(\ g) + O_2\ (g) \rightarrow 2NO_2\ (g)$ $\Delta H = -113.1$ kJ

the enthalpy for the decomposition of nitrogen dioxide into molecular nitrogen and oxygen

$2NO_2\ (g) \rightarrow N_2\ (g) + 2O_2\ (g)$

is _____ kJ.

A) 67.6 B) -67.6 C) -293.8 D) 45.5 E) 293.8

46) Given the following reactions 46) _____

$N_2\,(g) + O_2\,(g) \rightarrow 2NO\,(g)$ $\Delta H = +180.7$ kJ

$2NO\,(g) + O_2\,(g) \rightarrow 2NO_2\,(g)$ $\Delta H = -113.1$ kJ

the enthalpy of reaction for

$4NO\,(g) \rightarrow 2NO_2\,(g) + N_2\,(g)$

is _____ kJ.

A) 45.5 B) -293.8 C) -45.5 D) 293.8 E) 67.6

47) Given the following reactions 47) _____

$N_2\,(g) + O_2\,(g) \rightarrow 2NO\,(g)$ $\Delta H = +180.7$ kJ

$2N_2O\,(g) \rightarrow O_2\,(g) + 2N_2\,(g)$ $\Delta H = -163.2$ kJ

the enthalpy of reaction for

$2N_2O\,(g) \rightarrow 2NO\,(g) + N_2\,(g)$

is _____ kJ.

A) -343.9 B) 145.7 C) 343.9 D) 17.5 E) -145.7

48) The value of $\Delta H°$ for the reaction below is -186 kJ. 48) _____

$H_2\,(g) + Cl_2\,(g) \rightarrow 2HCl\,(g)$

The value of $\Delta H_f°$ for HCl (g) is _____ kJ/mol.

A) +186

B) -3.72×10^2

C) -93.0

D) -1.27×10^2

E) -186

49) The value of $\Delta H°$ for the following reaction is -3351 kJ: 49) _____

$2Al\,(s) + 3O_2\,(g) \rightarrow 2Al_2O_3\,(s)$

The value of $\Delta H_f°$ for Al_2O_3 (s) is _____ kJ.

A) -16.43 B) -1676 C) -32.86 D) -3351 E) +3351

50) Given the data in the table below, $\Delta H°_{rxn}$ for the reaction 50) _____

$$Ca(OH)_2 + 2H_3AsO_4 \rightarrow Ca(H_2AsO_4)_2 + 2H_2O$$

is _____ kJ.

Substance	$\Delta H_f°$ (kJ/mol)
$Ca(OH)_2$	-986.6
H_3AsO_4	-900.4
$Ca(H_2AsO_4)_2$	-2346.0
H_2O	-285.9

A) -744.9 B) -130.4 C) -4219 D) -76.4 E) -4519

51) Given the data in the table below, $\Delta H°_{rxn}$ for the reaction 51) _____

$$4NH_3\,(g) + 5O_2\,(g) \rightarrow 4NO\,(g) + 6H_2O\,(l)$$

is _____ kJ.

Substance	$\Delta H_f°$ (kJ/mol)
H_2O (l)	-286
NO (g)	90
NO_2 (g)	34
HNO_3 (aq)	-207
NH_3 (g)	-46

A) -1540

B) -1892

C) -150

D) -1172

E) The $\Delta H_f°$ of O_2 (g) is needed for the calculation.

52) Given the data in the table below, $\Delta H°_{rxn}$ for the reaction 52) _____

$$C_2H_5OH\ (l) + O_2\ (g) \rightarrow CH_3CO_2H\ (l) + H_2O\ (l)$$

is _____ kJ.

Substance	$\Delta H_f°$ (kJ/mol)
C_2H_4 (g)	52.3
C_2H_5OH (l)	-277.7
CH_3CO_2H (l)	-484.5
H_2O (l)	-285.8

A) -492.6

B) -1048.0

C) -79.0

D) -476.4

E) The value of $\Delta H_f°$ of O_2 (g) is required for the calculation.

53) Given the data in the table below, $\Delta H°_{rxn}$ for the reaction 53) _____

$$3NO_2\ (g) + H_2O\ (l) \rightarrow 2HNO_3\ (aq) + NO\ (g)$$

is _____ kJ.

Substance	$\Delta H_f°$ (kJ/mol)
H_2O (l)	-286
NO (g)	90
NO_2 (g)	34
HNO_3 (aq)	-207
NH_3 (g)	-46

A) 64 B) -508 C) 140 D) -140 E) -64

54) Given the data in the table below, $\Delta H°_{rxn}$ for the reaction 54) _____

$$IF_5\ (g) + F_2\ (g) \rightarrow IF_7\ (g)$$

is _____ kJ.

Substance	$\Delta H_f°$ (kJ/mol)
IF (g)	-95
IF_5 (g)	-840
IF_7 (g)	-941

A) 1801 B) 121 C) -1801 D) -121 E) -101

55) Given the data in the table below, $\Delta H°$ for the reaction 55) _____

$$2CO\ (g) + O_2\ (g) \rightarrow 2CO_2\ (g)$$

is _____ kJ.

Substance	$\Delta H_f°$ (kJ/mol)
CO (g)	-110.5
CO_2 (g)	-393.7
$CaCO_3$ (s)	-1207.0

A) -283.3

B) -566.4

C) -677.0

D) 283.3

E) The $\Delta H°_f$ of O_2 (g) is needed for the calculation.

56) The value of $\Delta H°$ for the following reaction is 177.8 kJ. The value of $\Delta H°_f$ for CaO(s) is _____ kJ/mol. 56) _____

$$CaCO_3\ (s) \rightarrow CaO\ (s) + CO_2\ (g)$$

Substance	$\Delta H_f°$ (kJ/mol)
CO (g)	-110.5
CO_2 (g)	-393.7
$CaCO_3$ (s)	-1207.0

A) 813.4 B) -813.4 C) 177.8 D) -1600 E) -635.5

57) Given the data in the table below, $\Delta H°_{rxn}$ for the reaction 57) _____

$$2Ag_2S\,(s) + O_2\,(g) \rightarrow 2Ag_2O\,(s) + 2S\,(s)$$

is _____ kJ.

Substance	$\Delta H_f°$ (kJ/mol)
Ag_2O (s)	-31.0
Ag_2S (s)	-32.6
H_2S (g)	-20.6
H_2O (l)	-286

A) +1.6

B) -1.6

C) -3.2

D) +3.2

E) THe $\Delta H°_f$ of S (s) and of O_2 (g) are needed for the calculation.

58) Given the data in the table below, $\Delta H°_{rxn}$ for the reaction 58) _____

$$Ag_2O\,(s) + H_2S\,(g) \rightarrow Ag_2S\,(s) + H_2O\,(l)$$

is _____ kJ.

Substance	$\Delta H_f°$ (kJ/mol)
Ag_2O (s)	-31.0
Ag_2S (s)	-32.6
H_2S (g)	-20.6
H_2O (l)	-286

A) -308

B) -370

C) -202

D) -267

E) More data are needed to complete the calculation.

59) Given the data in the table below, $\Delta H°_{rxn}$ for the reaction 59) _____

$$2SO_2\,(g) + O_2\,(g) \rightarrow 2SO_3\,(g)$$

is _____ kJ.

Substance	$\Delta H_f°$ (kJ/mol)
SO_2 (g)	-297
SO_3 (g)	-396
SO_2Cl_2 (g)	-364
H_2SO_4 (l)	-814
H_2O (l)	-286

A) 198

B) -198

C) 99

D) -99

E) The $\Delta H°_f$ of O_2 (g) is needed for the calculation.

60) Given the data in the table below, $\Delta H°_{rxn}$ for the reaction 60) _____

$$SO_3\,(g) + H_2O\,(l) \rightarrow H_2SO_4\,(l)$$

is _____ kJ.

Substance	$\Delta H_f°$ (kJ/mol)
SO_2 (g)	-297
SO_3 (g)	-396
SO_2Cl_2 (g)	-364
H_2SO_4 (l)	-814
H_2O (l)	-286

A) -132

B) -704

C) 1496

D) 704

E) -2.16×10^3

61) Given the data in the table below, $\Delta H°_{rxn}$ for the reaction 61) _____

$$3\ Cl_2\ (g) + PH_3\ (g) \rightarrow PCl_3\ (g) + 3\ HCl\ (g)$$

is _____ kJ.

Compound	$\Delta H_f°$ (kJ/mol)
PCl_3 (g)	-288.07
HCl (g)	-92.30
PH_3 (g)	5.4

A) -570.37

B) 385.77

C) 570.37

D) -385.77

E) The $\Delta H°_f$ of Cl_2 (g) is needed for the calculation.

62) Given the data in the table below, $\Delta H°_{rxn}$ for the reaction 62) _____

$$PCl_3\ (g) + 3\ HCl\ (g) \rightarrow 3\ Cl_2\ (g) + PH_3\ (g)$$

is _____ kJ.

Compound	$\Delta H_f°$ (kJ/mol)
PCl_3 (g)	-288.07
HCl (g)	-92.30
PH_3 (g)	5.4

A) 570.37

B) -570.37

C) 385.77

D) -385.77

E) The $\Delta H°_f$ of Cl_2 (g) is needed for the calculation.

63) Given the data in the table below and $\Delta H°_{rxn}$ for the reaction 63) _____

$$SO_2Cl_2\ (g) + 2H_2O\ (l) \rightarrow H_2SO_4\ (l) + 2HCl\ (g) \qquad \Delta H° = -62\ kJ$$

$\Delta H°_f$ of HCl (g) is _____ kJ/mol.

Substance	$\Delta H_f°$ (kJ/mol)
SO_2 (g)	-297
SO_3 (g)	-396
SO_2Cl_2 (g)	-364
H_2SO_4 (l)	-814
H_2O (l)	-286

A) -184

B) 30

C) -92

D) 60

E) Insufficient data are given.

Answer Key
Testname: SAMPLE QUESTIONS CHAPTER 5

1) B
2) D
3) C
4) E
5) D
6) D
7) D
8) A
9) B
10) A
11) A
12) B
13) C
14) A
15) E
16) D
17) A
18) A
19) D
20) D
21) B
22) A
23) D
24) D
25) D
26) B
27) D
28) B
29) D
30) C
31) A
32) E
33) C
34) D
35) E
36) A
37) B
38) E
39) C
40) A
41) E
42) D
43) B
44) A
45) B
46) B
47) D
48) C
49) B
50) B

51) D
52) A
53) D
54) E
55) B
56) E
57) D
58) D
59) B
60) A
61) A
62) A
63) C