



Group (    )	Sec (    )	اسم الطالب :
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**Answer the following questions:**

(a) Define each of the following

(6 marks)

(i) Internal energy

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(ii) Standard enthalpy of formation.

It is the enthalpy change when 1 mole of the compound is formed from its constituent element at standard condition.

(iii) P-V Work.

*Its work done by gas through expansion or work done to a gas through compression is called pressure- volume work or PV work.*

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(iv) Thermochemical Equation

*A balanced chemical equation together with its value of  $\Delta H$  is called a Thermochemical Equation*

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(b) Calculate the internal energy change for a piston is compressed from a volume of 8.30 L to 2.80 L against a constant pressure of 1.90 atm. In the process, there is 350 J of heat gains by the system. (3 Marks)

**Answer**

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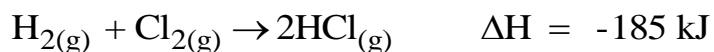
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(c) Consider the following thermo chemical equation:

(3 Marks)



Calculate  $\Delta H$  when:

(i) One mol of HCl is formed.

(ii) 1.0g of  $\text{Cl}_2$  reacts.

**Answer**

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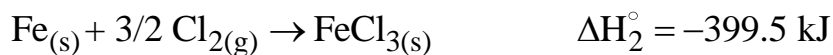
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(d) Calculate the standard molar enthalpy of formation of  $\text{FeCl}_{2(s)}$  using the following standard enthalpies of reaction:



(3 Marks)

**Answer**

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