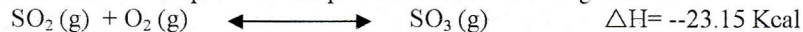
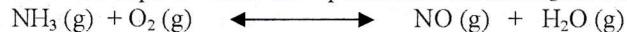


**Term Test**  
**Biochemistry and Molecular Biology Department**  
**Shahjalal University of Science and Technology**  
**Course title: Biophysical Chemistry (BMB 122)**

- ~~1.~~ What are conjugate acid–base pairs? Give two examples. 1
2. What are the factors which influence the strength of acid and base? 1
3. Derive Henderson's equation to calculate the  $p^H$  of buffer solution. 1
- ~~4.~~ What is an indicator? Which indicator would you use in the titration strong base against weak acid-explain it with curve? 2
- ~~5.~~ Give reasons of the following 1 + 1
  - a) Buffer solution resists change in  $p^H$ .
  - b) Methyl orange is a suitable indicator for the titration of strong acid and weak base.
- ~~6.~~ Why chemical equilibrium is called dynamic process? 1
- ~~7.~~ Predict the effect of temperature and pressure on the following reaction 1



- ~~8.~~ Write down the expression for the equilibrium constant  $K_C$  for the reaction 1



What is the unit of this constant?

~~2NH3~~