# 國立臺北科技大學102學年度碩士班招生考試

## 系所組別：3721 有機高分子研究所乙組

## 第二節　熱力學　試題（選考）



**注意事項：**

1. 本試題共四題，配分共100分。
2. 請標明大題、子題編號作答，不必抄題。
3. 全部答案均須在答案卷之答案欄內作答，否則不予計分。

1. Prove the following equation;

$$\left(\frac{\partial T}{\partial P}\right)_H = \frac{V}{C_P}(\alpha T - 1).$$

Where $\alpha$ is the thermal expansion coefficient of gas.(25%)

2.Explain the following problem with G=H-TS.
Why polyester(PET) can be dissolved in trifluoroacetic acid?
(25%)

3.Explain the following question?

(1) The second law of thermodynamics(5%)

(2) The third law of thermodynamics(5%)

(3) Partial molar quantity. (5%)

(4)fugacity. (5%)

(5)activity(5%)

4.When we stretching a polymer that is above its glass transition temperature,
Why entropy is more important than enthalpy.(25%)