**Preexam 2 quiz1 NAME:……………………………………………..**

1. **You perform calibration for absorbance measurements at the wavelength 540nm with standard solutions: given are the following transmittances for these concentrations:**

**T (transmittance %) : Absorbance A(corrected) Concentration of analyte:**

**63.22**

**25.11**

**15.85**

**10.00**

**-Write down the values for corrected absorbances that will be used to obtain the calibration curve.**

**-Draw a simple figure with the calculated dots and draw a line connecting these dots ( the linear calibration curve).**

**- Estimate the slope and intercept values for that calibration function and FIND the molecular absorptivity at that wavelength, e560 , if the cell length is 1 cm.**

**2) A sample of a diluted dye solution (50 mL in 250 mL) has an absorbance of 0.752 at 540nm in a quartz cuvette ( sample cell ) with path-length 0.10 cm. Molar absorptivity is e426 = 8468 M-1cm-1.**

**The concentration of the original dye solution is ?**

……………………………………………..

**Preexam 2 quiz1 NAME:……………………………………………..**

**1) *Selectivity* of spectroscopic methods is defined as**

**…………………………………………………………**

1. Which method would you use for quantitative analysis of

T-shirt colors ………………………………………………..

Pb in polluted water ………………………………………………….

Fe(CN6)3+ ……………………………………………..

C6H6 ………………………………………………………………….

NO …………………………………………………………………….

Pt attached to proteins……………………………………………………..

Proteins…………………………………………………………………...

Mixture of kerosene fractions…………………………………………..

Metals in a tooth……………………………………………………………

Vitamin B…………………………………………..

**Preexam 2 quiz3 NAME:……………………………………………..**

1. Draw **FTIR instrument**
2. Draw absorption instrument with CCD detector
3. **Name types of interferences**
4. **How can you eliminate spectral interferents in spectroscopy**
5. **How can you eliminate noise from spectroscopic measurements?**

**……………………………. ……………………………..**

**……………………………. ………………………………**

**Preexam 2 quiz4 NAME:……………………………………………..**

Wavelength of light in your system is 810nm

1. Where in the spectrum is that?
2. What is the frequency?
3. What is the period?
4. How much energy is in 7 photons of that light?