*UV-VIS spectroscopy*

**Student name**_____ **Student ID**_____

**497 Chem, Section**_____ **Date**_____

1.  **Beer Lambert's law gives the relation between which of the following?**
    a)  Reflected radiation and concentration
    b)  Scattered radiation and concentration
    c)  Energy absorption and concentration
    d)  Energy absorption and reflected radiation

2.  **In which of the following ways, absorption is related to transmittance?**
    a)  Absorption is the logarithm of transmittance
    b)  Absorption is the reciprocal of transmittance
    c)  Absorption is the negative logarithm of transmittance
    d)  Absorption is a multiple of transmittance

3.  **Which of the following is not a limitation of Beer Lambert's law, which gives the relation between absorption, thickness, and concentration?**
    a)  Concentration must be lower
    b)  Radiation must have higher bandwidth
    c)  Radiation source must be monochromatic
    d)  Does not consider factors other than thickness and concentration that affect absorbance

4.  **Beer's law states that the intensity of light decreases with respect to _____**
    a)  Concentration
    b)  Distance
    c)  Composition
    d)  Volume

5.  **The representation of Beer Lambert's law is given as A = $\varepsilon$lc. If 'l' represents distance, 'c' represents concentration and 'A' represents absorption, what does '$\varepsilon$' represent?**
    a)  Intensity
    b)  Transmittance
    c)  Absorptivity
    d)  Admittance

6.  **Which of the following is not true about Absorption spectroscopy?**
    a)  It involves transmission
    b)  Scattering is kept minimum
    c)  Reflection is kept maximum
    d)  Intensity of radiation leaving the substance is an indication of concentration

7.  **Transmittance is given as T = It/Io. If Io is the power incident on the sample, what does It represent?**

    a)   Radiant power transmitted by the sample

    b)   Radiant power absorbed by the sample

    c)   Sum of powers absorbed and scattered

    d)   Sum of powers transmitted and reflected

8.  **What is the unit of absorbance which can be derived from Beer Lambert's law?**

    a)   $L\,mol^{-1}\,cm^{-1}$

    b)   $Lgm^{-1}\,cm^{-1}$

    c)   Cm

    d)   No unit

9.  **What is the unit of molar absorptivity or absorptivity which is used to determine absorbance A in Beer Lambert's formula?**

    a)   $L\,mol^{-1}\,cm^{-1}$

    b)   $Lgm^{-1}\,cm^{-1}$

    c)   Cm

    d)   No unit

10. **Which of the following spectroscopy techniques is associated with molecular emission?**

    a)   UV-Visible spectroscopy

    b)   IR spectroscopy

    c)   Fluorescence spectroscopy

    d)   X-ray diffraction

11. **Provide two applications of UV Spectroscopy?**

**12. Discuss the result of UV-VIS spectra shown below?**