King Saud University

Applied Medical Science

Clinical Laboratory Department / Exam (CLS332)

Student Name: Student No.

**Fill in the blanks: 5 marks**

1-     In double beam spectrometer, if the light hits the transparent section of the first rotating disc, it will go straight through and pass through the cell containing \_\_\_\_\_\_\_\_\_\_. (sample)

2-     Turbidimetry is the measurement of the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

(Is the measurement of the intensity of light transmitted through the sample, the unscattered light, is measured. )

3-     Nephlometry is differs from turbidimetery in the arrangement of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.( photometer)

4-     In double beam spectrophotometer the reference cell contains \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. (the pure solvent)

5-     In nephlometry and turbidimetery; the concentration of the reactants must be controlled by adding \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. ( pure solid barium chloride of definite grain size.)

**B.    Answer the following: 10 marks**

**1.   What is the meaning of osmosis?**

The passage of water from a region of high water concentration through a semi-permeable membrane to a region of low water concentration**.**

**2.    What is Lambda λ max.**

Is the wavelength at which the maximum fraction of light is absorbed by a solution

**3.   Mention the 4 measurements that depend on colligative properties.**

Freezing point.

 Vapor pressure.

 Osmotic pressure.

Boiling point

**4.  List the advantages of fluorometer.**

Very specific - Very sensitive.

- Wide Concentration Range- Simplicity and Speed- Low Cost

**5.  Define a compound's fluorescence signature or fingerprint.**

an excitation spectrum (the wavelength and amount of light absorbed) and an emission spectrum (the wavelength and amount of light emitted).