

## Quiz #2 Key – 6:30 lab

### 1. Define:

**Osmosis** – Osmosis can be defined as the movement of solvent (usually water) from an area of low solute concentration to an area of higher solute concentration across a semi-permeable membrane (one permeable to the solvent but not to the solute). Unlike diffusion, osmosis requires a membrane.

**Positive phototaxis** - Positive phototaxis is the directed movement of cells toward light in their environment. Microorganisms capable of photophosphorylation (making ATP using light energy) will often swim toward light.

**Peroxisomes** – Peroxisomes are membranous organelles containing enzymes involved in hydrogen peroxide metabolism (among other things). Organic compounds catabolized within peroxisomes yield hydrogen peroxide as a by-product, and since this is toxic, it must also be broken down. Catalase enzymes are used to break down the potentially toxic hydrogen peroxide.

2. Nucleotides/ Nucleotides can have additional phosphate groups bound to them, and will form high-energy compounds called nucleoside triphosphates (r-NTPs or d-NTPs). Nucleotides can be used to form coenzymes including NAD, FAD and NADP, and cyclic nucleotides can be used as regulatory molecules (c-AMP, c-GMP, etc.).

3. Amphipathic or amphiphilic/ hydrophobic

4. Integral proteins or intrinsic proteins/ facilitated diffusion

5. Water will flow into the cell.

6. Opposite

7. Pinocytosis

8. Quorum sensing

9. Smooth endoplasmic reticulum/ ribosomes

10. Lysosomes/ contractile vacuoles

11. Mitochondria/ chloroplasts/ both contain ccc-DNA molecules and 70S ribosomes.

The most common etiological agents of pneumonia are identified as *Streptococcus pneumoniae*.