

## Key to Lecture Quiz #1

1. Define:

**Abiogenesis** – Abiogenesis (a = without, bio = life, genesis = beginnings) was a belief commonly accepted prior to the 1800s, that living organisms could arise spontaneously from non-living materials. The validity of abiogenesis was shaken by the work of Francesco Redi, Lazzaro Spallanzani and others, but was conclusively disproven (at the microscopic level) by Louis Pasteur during the 1860s.

**Protoplasm** – Protoplasm is the living material all cells are made of. It is the chemical and physical basis for life (has a complex chemical composition and unique physical properties), and changes over time, i.e., it is dynamic.

**Triglyceride** – A triglyceride is a type of lipid composed of three fatty acid chains attached to a glycerol “backbone”. The fatty acids can vary significantly in composition (some saturated and some unsaturated), and this will influence the consistency of the triglyceride, i.e., whether it is more solid or liquid at room temperatures.

2. Antonie van Leeuwenhoek

3. Louis Pasteur/ vaccines

4. Koch's postulates provided a means for demonstrating the causal relationship between a specific type of bacteria and a specific disease. Prior to these, most people believed floods, earthquakes, cold weather, bad air, sinful activity, etc. caused diseases (often with help from the supernatural). Koch's postulates provided a means for determining the etiological agents human diseases caused by bacteria and viruses. They do not work well for cancer.

5. Paul Ehrlich

6. Grow by assimilating materials from the environment/ mutate

7. Water/ hydrolysis

8. Hexose monosaccharides/ polysaccharides

9. Amino acids/ quaternary

10. Phospholipid/ steroid or sterol

11. Nucleic acids/ Nucleotides can have extra phosphates added to form nucleoside triphosphate molecules (NTPs) that serve as high-energy molecules (e.g., ATP); nucleotides can be combined to form coenzymes, e.g., NAD, FAD, and NADP; and cyclic nucleotides serve as regulatory molecules (e.g., cyclic-AMP).

The etiological agents of human cholera are identified as *Vibrio cholerae*.