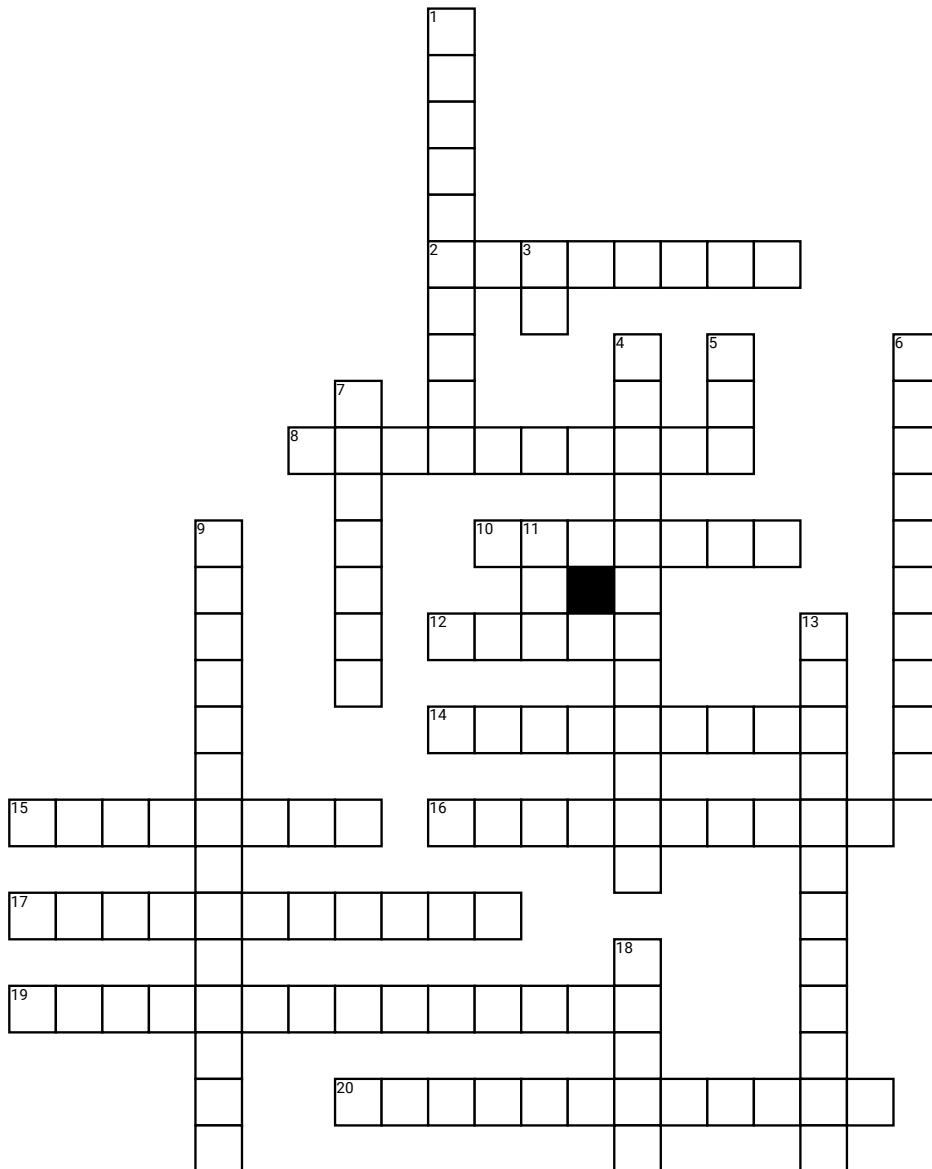


Biochemistry & Metabolic Processes



Across

2. Similar to a car tire, which is a necessity for the car to carry out its prescribed function of transportation.

8. In *E. coli* cells, about 95% of its produced ATP is used for protein synthesis (high E_s).

10. If O_2 consumption is faster than glucose metabolization, removed protons & electrons of glucose reattach to pyruvates (byproduct).

12. A theory that can be compared to the magnetic repulsion between "like" poles of magnets that move away from each other as far as possible.

14. Similar to using a key with a specific shape & size to unlock the locks on a door.

15. Hydrophilic (polar) group of atoms that can produce two different classes of organic molecules.

16. When applied to a triglyceride, breaks it down into glycerol & fatty acids.

17. $NH_3 + \text{water} \rightarrow NH_4^+ + OH^-$ or $HCl + \text{water} \rightarrow H_3O^+ + Cl^-$

19. Similar to a long metal chain with series of (100s to 1000s) connected links that would take a lot of effort & time to break apart individually.

20. Hydrophobic & hydrophilic components on opposite ends facing inward & outward.

Down

1. 2 ATP, 6 NADH, 2 $FADH_2$, & 4 CO_2 .

3. An energy that can be compared to the static friction force an object has to overcome at rest (0 velocity) in order to start moving.

4. When frying an egg, the clear liquid egg white turns to white & rubbery in texture.

5. Sequence of molecules that can be compared to using an energy source to pump water behind a dam at a high level, & dropping it down to the turbines to produce electricity (runs out soon).

6. Series of anaerobic reactions (exergonic overall) in a cell that initiates either an anaerobic or aerobic process based on O_2 presence.

7. _____ increases when fixed salt crystals split into Na & Cl ions that move freely with H_2O molecules in a cup.

9. Special linkage that increases the polymer in length upon bridging between the monomers' OH^- & PO_4^- group.

11. Like a partially-charged battery that can be recharged (recycled) again & again through a charger reversing electron flow.

13. Maintains equilibrium of the proton (H^+) concentration gradient inside a double-membrane-bounded organelle.

18. Simultaneously, ZnO gains an e^- whereas C loses an e^- , $ZnO + C \rightarrow Zn + CO$.