1. An enzyme is a biological catalyst, which means it:

   ☐ slows reactions down

   ☐ is used up in the reaction

   ☐ is a type of sugar

   ☐ speeds up a reaction without being used up

2. The temperature at which an enzyme works fastest is its:

   ☐ boiling point

   ☐ freezing point

   ☐ optimum temperature

   ☐ denaturing point

3. Enzymes are made of:

   ☐ protein

   ☐ glucose

   ☐ starch

   ☐ fat

4. If an enzyme gets too hot, it:

   ☐ speeds up forever

   ☐ denatures and stops working

   ☐ turns into a sugar

   ☐ works at the same rate

5. The part of an enzyme where the substrate binds is the:

   ☐ product

   ☐ membrane

   ☐ active site

   ☐ nucleus

6. An enzyme is tested at 20, 30, 40 and 50 °C. Its measured rates are 2, 5, 8 and 1 arbitrary units respectively. Which tested temperature gives the highest rate, in °C?

   _____

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☐ True ☐ False

8. A denatured enzyme can recover its shape once it cools down.

   ☐ True ☐ False

9. The model where only a matching substrate fits an enzyme is the _____-and-key model.

   _____

10. Moving the pH far from an enzyme's optimum will:

    ☐ slow or stop the enzyme

    ☐ turn it into a substrate

    ☐ always speed it up

    ☐ have no effect

1. **speeds up a reaction without being used up**

   Catalysts speed up reactions and are reusable.

2. **optimum temperature**

   The optimum is where the rate is highest.

3. **protein**

   Enzymes are proteins.

4. **denatures and stops working**

   Excessive heating can change the active-site shape, so the substrate no longer fits effectively.

5. **active site**

   The substrate fits into the active site.

6. **40**

   The largest measured rate is 8 at 40 °C. This is the best tested temperature; the exact optimum could lie between tested temperatures.

7. **False**

   False. Each enzyme is specific: only a substrate with a complementary shape fits its active site.

8. **False**

   Denaturing is permanent; cooling does not restore the active site.

9. **lock**

   Lock-and-key explains enzyme specificity.

10. **slow or stop the enzyme**

    The wrong pH changes the active site shape.

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