1. The Internet is:

   ☐ one website

   ☐ a programming language

   ☐ a single computer

   ☐ a network of interconnected networks

2. A fault-tolerant system:

   ☐ runs only once

   ☐ never has any parts

   ☐ keeps working even if part of it fails

   ☐ stops at the first error

3. In sequential computing:

   ☐ steps run on many computers

   ☐ all steps happen at once

   ☐ there are no steps

   ☐ each step must finish before the next begins

4. An agreed set of rules for how systems exchange data is a _____.

   _____

5. Having more than one path or copy so a backup takes over is called _____.

   _____

6. A task takes 100 s on one processor and 40 s on several. What is the speedup?

   _____ times

7. Data is sent across the Internet as:

   ☐ one large block on one cable

   ☐ a single letter at a time

   ☐ nothing

   ☐ small packets that travel independently

8. A single point of failure is:

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   ☐ an extra route through the network

   ☐ a fast connection to the Internet

   ☐ one part whose failure stops the entire system

9. If 20 s of a 100 s task must run sequentially, what is the maximum possible speedup?

   _____ times

10. Redundancy means there is usually more than one path between two points, so a failed link can be bypassed.

    ☐ True ☐ False

1. **a network of interconnected networks**

   Millions of smaller networks joined into one global system.

2. **keeps working even if part of it fails**

   No single failure brings the whole system down.

3. **each step must finish before the next begins**

   One step at a time, in order.

4. **protocol**

   Protocols let different machines cooperate.

5. **redundancy**

   Redundancy is the main way to achieve fault tolerance.

6. **2.5 times**

   speedup = 100 / 40 = 2.5×.

7. **small packets that travel independently**

   Packets take possibly different routes and are reassembled in order.

8. **one part whose failure stops the entire system**

   A network with one central router has a single point of failure.

9. **5 times**

   Even with infinite processors, 20 s remains: 100 / 20 = 5×.

10. **True**

    Multiple paths are why the Internet keeps working when parts fail.

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