

Name _____

Date _____

Net Neutrality

Use the text to answer each question below.

1. Everything on the internet, from videos to emojis to music, is made up of bits of data. Bits measure computer information. Eight bits make up one byte. A byte represents one unit of computer memory or computer storage capacity. Computer files are also measured in bytes. As more and more files are added to a computer's memory, the amount of available storage decreases. Larger units like kilobytes, megabytes, gigabytes and terabytes are used to measure large amounts of computer memory or large files. For reference, a smartphone's memory is measured in gigabytes, while the file size of one song would be measured in megabytes. All of the data we access on the internet is stored in servers all around the world. A server is a central computer in a network of computers that runs applications and programs the other computers in the network can connect to. When you stream a Flocabulary video, your computer is connecting to Flocabulary's servers using the internet. But that video's data doesn't just appear, it has to travel from one place to another. That's where internet service providers come in.

Which of the following best describes a byte?

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| A. a type of computer | B. a file type found online |
| C. a unit of computer memory | D. a cable that connects computers |
2. People use the internet for all kinds of things, from finding directions to sending an email to watching a movie to posting on social media. Some of these things use more bandwidth, or network capacity, than others. Streaming a movie requires a lot more capacity than sending a text-only email. But how do we access the internet? We do so through internet service providers, or ISPs. ISPs are companies that provide the infrastructure we need to use websites and apps. Individuals, schools, libraries and businesses pay ISPs to use their infrastructure to connect to the internet. Some of the largest ISPs are telecommunication and cable companies like Verizon, Comcast and Time Warner. Their infrastructure is a series of cables, towers and underground pipes that direct data where consumers want it to go. In other words, the ISPs build and manage the highway that information travels on, apps and websites are the cars on the highway and internet users are behind the wheel.

Which of the following best describes the relationship between ISPs and their customers?

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| A. ISPs build and manage the internet infrastructure that customers pay to use. | B. ISPs pay customers to create content to build out the internet on a shared infrastructure. |
| C. ISPs are paid by the government to offer free internet access to customers around the world. | D. ISPs create and manage internet content that is shared over customer-owned infrastructure. |

3. Net neutrality is the idea that all traffic on the internet should be treated equally. This means there should be no “fast lanes” or “slow lanes” on the internet highway that ISPs provide. With a neutral internet, ISPs cannot charge fees to websites or apps to access a faster connection. They also cannot charge consumers a fee to access certain websites or apps. With net neutrality in place, a byte of data from YouTube is treated exactly the same as a byte of data from a personal blog. No matter how much bandwidth a site uses, it can access the same connection. Not every country has net neutrality. Countries like Portugal, New Zealand, Guatemala and Morocco do not. In the United States, the Federal Communications Commission (FCC) put regulations in place to preserve a neutral internet in 2015. But in 2017, those regulations were rolled back. There are many arguments on each side of the net neutrality issue, with conflicting perspectives from ISPs, technology companies, government agencies and consumers.

Which of the following best describes a scenario that might happen in a country *without* net neutrality?

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| A. Facebook and Twitter always have access to the same connection. | B. Hulu has to pay ISPs a fee based on the amount of bandwidth it uses. |
| C. ISPs cannot charge customers additional fees to access music on Apple Music. | D. YouTube cannot offer money to an ISP to ensure its content streams at a higher quality. |
4. Supporters of net neutrality claim it helps competition and innovation. Let’s say ISPs were able to charge video streaming services high fees to access their fastest connection. Companies who pay will have their content delivered quickly and at the highest quality. Companies who do not pay will be stuck with a slow connection and lower-quality streaming. Supporters of net neutrality say that large companies like Netflix can easily pay the fees, while smaller companies might not be able to afford it—even if their product is exciting and different. Because of this, small companies might struggle to compete as large companies dominate the market. On the other hand, critics of net neutrality say these policies actually hurt competition and innovation. Without the opportunity to offset costs by charging for better services, ISPs have no incentive to invest in and build better infrastructure. Critics also say that, without net neutrality, consumers would have more choice. Instead of paying to access everything on the internet, they could pick and choose to pay only for the websites and apps they actually use.

Based on the passage, why might a smaller company struggle to compete without net neutrality in place?

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| A. Smaller companies might have no incentive to build better products without the ability to charge fees to customers. | B. Smaller companies might not be able to build a website, forcing them to sell products through newspapers. |
| C. Smaller companies might not be able to pay fees that give them access to higher quality connections. | D. Smaller companies might have to create their own infrastructure to avoid paying ISPs for a connection. |

5. Critics of net neutrality argue that the government isn't equipped to regulate the vast and changing internet. They cite antiquated laws used to regulate the internet as proof of this disconnect. They believe net neutrality gives the government the job of internet traffic cop instead of letting consumers make their own decisions. Critics also say that regulations place a burden on ISPs. This prevents broadband, or high-capacity data transmission, from expanding into new communities and leaves people with insufficient internet options. Supporters of net neutrality argue that ISPs should not be in control of traffic. They think ISPs will make decisions for their own financial gain, citing the inferior internet packages available in countries without net neutrality. Some of these packages favor certain sites over others — in some cases, sites the ISPs own. Some people fear this could lead to competitor content being blocked, allowing certain ISPs to create a monopoly. Supporters also believe it wouldn't just be tech companies paying more, but consumers too. Consumers might have to pay for content like social media, streaming and news separately, causing overall costs to rise.

Based on the passage, with which of the following statements would a critic of net neutrality most likely agree?

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| A. The government will help expand broadband to underserved communities. | B. ISPs want to block competitor sites to make more money and create a monopoly. |
| C. Consumers will end up paying more for internet services if content is priced separately. | D. The internet moves too fast and changes too often for government regulations to keep up with. |