

AP Computer Science Principles - Big Idea 4 Computer Systems and Networks Practice Test

Question 1

Which of the following best explains what happens when a new device is connected to the Internet?

- A. A device driver is assigned to the device.
- B. An Internet Protocol (IP) address is assigned to the device.
- C. A packet number is assigned to the device.
- D. A Web site is assigned to the device.

Question 2

A user enters a Web address in a browser, and a request for a file is sent to a Web server. Which of the following best describes how the file is sent to the user?

- A. The file is broken into packets for transmission. The packets must be reassembled upon receipt.
- B. The file is broken into packets for transmission. The user's browser must request each packet in order until all packets are received.
- C. The server attempts to connect directly to the user's computer. If the connection is successful, the entire file is sent. If the connection is unsuccessful, an error message is sent to the user.
- D. The server repeatedly attempts to connect directly to the user's computer until a connection is made. Once the connection is made, the entire file is sent.

Question 3

An Internet service provider (ISP) is considering an update to its servers that would save copies of the Web pages most frequently visited by each user. Which of the following is LEAST likely to occur as a result of the update?

- A. Average response time for user requests might decrease.
- B. Privacy of users might be negatively affected.
- C. Storage requirements for the servers might increase.
- D. Web sites that are not visited frequently might no longer be accessible to users.

Question 4

Which of the following is a characteristic of the fault-tolerant nature of routing on the Internet?

- A. The ability to use a hierarchical naming system to avoid naming conflicts
- B. The ability to provide data transmission even when some connections have failed
- C. The ability to resolve errors in domain name system (DNS) lookups

- D. The ability to use multiple protocols such as hypertext transfer protocol (HTTP), Internet protocol (IP), and simple mail transfer protocol (SMTP) to transfer data

Question 5

Two computers are built by different manufacturers. One is running a Web server and the other is running a Web browser. Which of the following best describes the ability of the two computers to communicate with each other across the Internet?

- A. The computers cannot communicate because different manufacturers use different communication protocols.
- B. The computers can communicate, but additional hardware is needed to convert data packets from one computer's protocol to the other computer's protocol.
- C. The computers can communicate directly because Internet communication uses standard protocols.
- D. The computers can communicate directly only if the messages consist of text; other formats cannot be interpreted across computers.

Question 6

A city government is attempting to reduce the digital divide between groups with differing access to computing and the Internet. Which of the following activities is LEAST likely to be effective in this purpose?

- A. Holding basic computer classes at community centers
- B. Providing free wireless Internet connections at locations in low-income neighborhoods
- C. Putting all government forms on the city Web site
- D. Requiring that every city school has computers that meet a minimum hardware and software standard.

Question 7

A user clicks on a website, and it begins to load immediately, but it takes a long time to load completely and pictures appear slowly, one by one. Which of the following is demonstrated through this situation?

- A. High bandwidth, high latency
- B. Low bandwidth, high latency
- C. High bandwidth, low latency
- D. Low bandwidth, low latency

Question 8

Which of the following BEST describes how protocols on the Internet (e.g. IP, TCP, HTTP) make use of abstraction to accomplish their respective purposes?

- A. Low level protocols can provide functionality to high level protocols without revealing the details of how this is accomplished.

- B. High level protocols take into account specific implementation details of lower level protocols to ensure they are compatible.
- C. Low level protocols are written in binary while high level protocols are written hexadecimal
- D. High level protocols can take on the role of a low level protocol in the event of failure in the system.

Question 9

Which of the following is NOT true about TCP/IP packets?

- A. Packets are numbered so if they arrive out of order the message can be reassembled.
- B. TCP guarantees that no packets are ever dropped
- C. Packets can be routed on different paths from sender to receiver.
- D. Messages are broken into packets to improve reliability of the internet.

Question 10

How does a computer resolve a domain name into an IP address?

- A. It asks a DNS server for the corresponding IP address
- B. It scans addresses until it finds the one it's looking for
- C. It uses a Border Gateway Protocol to get the address from a nearby computer.
- D. It creates an IP address for the domain, and shares it with the closest DNS.

Question 11

Transmission capacity measure by bit rate is the _____.

- A. Bandwidth
- B. Latency
- C. Binary message
- D. Protocol

Question 12

Small chunks of information that have been carefully formed from larger chunks of information

- A. Protocols
- B. IP Addresses
- C. Packets
- D. Routers

Question 13

Which statement is true about routing on the Internet?

- A. Information travelling between two computers over the Internet will always take the same path.
- B. A packet travelling between two computers on the Internet may be rerouted many times along the way
- C. There is one router which receives and redirects all the traffic of the Internet.
- D. A packet contains addressing information to allow routers to decide how best to forward along that packet towards its destination.

Question 14

_____ provides reliable, ordered, and error-checked delivery of a stream of packets on the internet.

- A. Internet Task Force
- B. Transmission Control Protocol
- C. The Internet Service Provider
- D. World Wide Web

Question 15

Which of the following best describes the basic idea of fault tolerance?

- A. A system that never fails
- B. If part of the system fails, the operation continues without interruption
- C. A program that does not allow inputs out of a range given by a programmer
- D. A program that does not allow loss of precision

Question 16

What does protocol mean?

- A. Rules
- B. Security
- C. Orders
- D. Services

Question 17

It is the inclusion of extra components that can be used to mitigate failure of a system if other components fail.

- A. Redundancy
- B. Fault-tolerant
- C. Data stream
- D. Parallel Computing

Question 18

_____ is a computational model in which operations are performed in order one at a time.

- A. Sequential Computing
- B. Parallel Computing
- C. Distributed Computing
- D. Efficiency

Question 19

_____ is a computational model in which multiple devices are used to run a program.

- A. Sequential Computing
- B. Parallel Computing
- C. Distributed Computing
- D. Efficiency

Answer Key

- 1. B
- 2. A
- 3. D

- 4. B
- 5. C
- 6. C
- 7. D
- 8. A
- 9. B
- 10.A
- 11.A
- 12.C
- 13.D
- 14.B
- 15.B
- 16.A
- 17.A
- 18.A
- 19.C