Review the following scenario, which describes codecs developed by a company, then follow the subsequent instructions.

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DigiVoice is a company that develops, manufactures and sells codecs for converting analog audio signals into digital audio signals for transmission over a digital circuit. DigiVoice develops two new models of codecs, denoted as DV1 and DV2. To obtain a digital audio signal, DV1 samples each analog audio signal 16,000 times per second and encodes each sample with 12 bits. On the other hand, DV2 samples each analog audio signal 24,000 times per second and encodes each sample with 16 bits. R1 and R2 denote the bitrates of the digital audio signals obtained by DV1 and DV2 respectively.  
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From the following statements, select all that correctly determine R1 and R2.

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| --- | --- | --- |
|  | a. | R2 is equal to 384Kbps. |
|  | b. | R1 is equal to 256Kbps. |
|  | c. | R1 is equal to 192Kbps. |
|  | d. | R1 is equal to 1.33Kbps. |
|  | e. | R2 is equal to 1.5Kbps. |

Select all statements below that correctly describe circuit configuration and data flow.

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|  | a. | A point-to-point circuit is a circuit configuration that is exclusively used by two network devices connected to that circuit in order to transfer data between each other. |
|  | b. | One disadvantage of a circuit with full-duplex transmission is that full-duplex transmission is characterized by a non-zero turnaround time. |
|  | c. | Two computers connected by a multipoint circuit can simultaneously send data to each other over that multipoint circuit. |
|  | d. | Using a multipoint circuit to interconnect a set of computers reduces the amount of cable required when compared to interconnecting the same set of computers with point-to-point circuits where every computer is connected to every other computer. |
|  | e. | A network device connected to a circuit with half-duplex transmission can send data in one time interval and receive data in another time interval, but can never send and receive data simultaneously. |

From the following statements, select all that correctly describe the client-based application architecture.

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|  |  | The significant advantages of the Client-based application architecture fueled the explosion of the use of personal computers. |
|  |  | The reason why most applications today use the client-based architecture is that client-based applications can be easily purchased. |
|  |  | One fundamental problem with the client-based architecture is that it possible that far more data is transferred from the server to the client than is actually needed by the client. |
|  |  | Most applications today use the client-based architecture. |
|  |  | In a client-based architecture, the presentation, application and data access logic all reside on the client computers. |

From the following statements, select all that correctly describe client-based architectures.

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| --- | --- | --- |
|  | a. | The client computer in a client-based architecture is responsible for executing only the application logic and presentation logic. |
|  | b. | The server computer in a client-based architecture is responsible for the executing the data storage logic and data access logic. |
|  | c. | The server computer in a client-based architecture is responsible for executing the data storage logic. |
|  | d. | One disadvantage of client-based architectures is that data stored on the server that needs processing must be transmitted from the server to the client. |
|  | e. | A client computer in a client-based architecture is responsible for executing the application logic, data access logic and presentation logic. |

From the following statements, select all that correctly describe cloud computing architectures.

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|  |  | A customer of an Infrastructure as a Server (IaaS) cloud provider is responsible for managing the application logic, data storage logic and data access logic of its application as well as the operating systems and virtualization software that the customer may need to install on the cloud provider's hardware infrastructure. |
|  |  | Platform as a Service (PaaS) is a cloud computing architecture in which the PaaS cloud provider rents hardware and software infrastructure to its customers, but any customer of the PaaS cloud provider is responsible for creating its own application logic and managing the application data. |
|  |  | Any customer of a Software as a Service (SaaS) cloud provider is responsible for performing manual application upgrades to the application that the customer receives by the SaaS cloud provider. |
|  |  | One disadvantage of hosting an application on a Software as a Service (SaaS) cloud provider is that any customizations to the application affect all customers; each customer cannot customize the application to their own liking. |
|  |  | Infrastructure as a Service (IaaS) is a cloud architecture in which the IaaS cloud provider rents to its customers only hardware infrastructure that may include servers, storage or networking components. |