|  |  |
| --- | --- |
| Question 1 of 77  Why is testing in system integration more complex than in system development?   |  | | --- | |  |  * A. Because design tests that are within system integrator’s control. * B. Data adhere to specifications. * C. Have to test all scenarios. * D. All are correct. |
| Question 2 of 77  Is process the most important choice system integration projects? Why?   |  | | --- | |  |  * A. Yes. Easy to control and monitor the result of project. * B. No. The engineers who give the solutions for the problems are the most important. * C. Yes. Following the process will get the right solutions. * D. No. Both the engineers, who give the solutions for the problems, and process, are needed. |
| Question 3 of 77  What is the problem when integrated system has naming services?   |  | | --- | |  |  * A. Entities don’t have name. * B. Entities can’t be found * C. Resolving duplicate names. * D. User doesn’t know how to find other system entities. |
| Question 4 of 77  The simplest way to achieve load balancing is to:   |  | | --- | |  |  * A. maintain a list of available servers and pass incoming requests to those servers * B. distribute the load of data transfer to a single server with high capacity * C. buy the latest load balancing software * D. institute single tier architecture |
| Question 5 of 77  Nowadays, System integration involve a complete system, that are:   |  | | --- | |  |  * A. Business processes * B. Organizational structural alignments * C. Knowledge management * D. All are correct |
| Question 6 of 77  Which of the following is not an area of tangible benefit in regard to integration of systems?   |  | | --- | |  |  * A. Reduction of IT costs * B . Reduction of cycle times * C. Reduction of inventory costs * D. Reduction of shipping costs |
| Question 7 of 77  Which of the following is not considered an intangible benefit to enterprise integration?   |  | | --- | |  |  * A. Improved availability of information * B. Increase in customer responsiveness * C. Creation of standards for information resources * D. Increased customer service |
| Question 8 of 77  What can we do to have a security service?   |  | | --- | |  |  * A. Load balancing and data redundancy (1). * B. Authenticated, access control and logging activities (2). * C. None is correct. * D. Both (1) and (2) are correct. |
| Question 9 of 77  A project team member who has a strong understanding of the data in an information system that is being replaced by a new enterprise system is a:   |  | | --- | |  |  * A. Business process expert. * B. technical expert. * C. Geographic business process expert. * D. Change management expert. |
| Question 10 of 77  Which are common mistakes in data integration?   |  | | --- | |  |  * A. Creating a big new database. * B. integrate data at all sites. * C. Analyzing legacy database to finish developing a new database * D. Testing without a sufficient set of real data. |
| Question 11 of 77  The CIO tells you she is looking for a middleware suite. Which type of middleware would you recommend?   |  | | --- | |  |  * A. Data integration * B. Enterprise application integration * C. Message-oriented middleware * D. Transaction processor |
| Question 12 of 77  Which statement accurately describes a characteristic of security services within a system?   |  | | --- | |  |  * A. All users have unlimited access to resources. * B. Activities are logged solely for performance monitoring. * C. Entities are authenticated, and access control is not implemented. * D. Resources are managed based on defined policies, and accountability is ensured through logging. |
| Question 13 of 77  What is a common approach to managing access control in organizations?   |  | | --- | |  |  * A. Assigning users to multiple groups simultaneously * B. Granting access to data without considering application access * C. Resolving conflicts between user roles to prevent unauthorized data access * D. Providing unrestricted access to all users regardless of their roles |
| Question 14 of 77  When is the Data Integration Model appropriate?   |  | | --- | |  |  * A. When data from multiple sources needs to be separated for analysis. * B. When a single application requires exclusive access to data sources. * C. When combining data from multiple sources for analysis and decision-making is needed. * D. When data needs to be extracted from one source without any update |
| Question 15 of 77  Which term refers to the prevention of a principal from denying participation?   |  | | --- | |  |  * A. Authentication * B. Authorization * C. Non-repudiation * D. Security Protocols |
| Question 16 of 77  Why do the legacy systems need to remain in place until new systems are completely integrated?   |  | | --- | |  |  * A. To minimize changing. * B. To reduce cost. * C. For system integrated be tested in planned. * D. To operating easier. |
| Question 17 of 77  How many types of integration model are there? And what are they?   |  | | --- | |  |  * A. 4? Waterfall, Rapid Application Development, Spiral, Agile (1). * B. 3? Waterfall, Spiral, Agile (2). * C. 3 - Presentation, Functional and Data Integration (3). * D. (1) and (3) are correct. |
| Question 18 of 77  Which of the following is a generic solution to the challenge of performance?   |  | | --- | |  |  * A. scalable solutions * B. reliable solutions * C. transparent solutions * D. server solutions |
| Question 19 of 77  The integration styles are   |  | | --- | |  |  * A. File Transfer; Shared Database; Presentation Integration * B. Remote Procedure Invocation; Messaging; Functional Integration * C. Presentation Integration; Functional Integration * D. File Transfer; Shared Database; Remote Procedure Invocation; Messaging. |
| Question 20 of 77  What integration styles does file data sharing belong to?   |  | | --- | |  |  * A. File Transfer * B. Shared Database * C. Remote Procedure Invocation * D. Messaging |
| Question 21 of 77  Before start thinking about integration, we must to:   |  | | --- | |  |  * A. Research legacy system and make vision document * B. Make sure that the purpose is clear and feasible * C. Meeting customer * D. Make requirement specification document |
| Question 22 of 77  In MegaMoney Bancorp Case Study: What are the two key services discussed in the passage that MegaMoney Bancorp aims to support?   |  | | --- | |  |  * A. Opening new accounts and closing existing ones * B. Address changes and fund transfers between accounts * C. Credit card applications and loan approvals * D. Account inquiries and balance transfers |
| Question 23 of 77  What is MegaMoney Bancorp's goal for EAI (Enterprise Application Integration)?   |  | | --- | |  |  * A. To maintain the complexity of its IT architecture * B. To offer integrated information and transactional services on its website * C. To minimize the number of legacy systems * D. To maximize the number of legacy systems |
| Question 24 of 77  Which architecture choice involves computing the aggregate each time data is retrieved?   |  | | --- | |  |  * A. Aggregate field in a special top-level record, application making changes update the field * B. System updates the aggregate field in system business logic * C. Get all the records and aggregate manually * D. The new application computes the aggregate on retrieval |
| Question 25 of 77  What components comprise the system security architecture?   |  | | --- | |  |  * A. Risk management techniques * B. Security engineering principles * C. Quantitative risk-management methods * D. Policies, procedures, and technologies |
| Question 26 of 77  What does System Integration mean?   |  | | --- | |  |  * A. It means many separate systems need to become one * B. More than one application, module or component that can’t use anymore, so they have to replace by another new one * C. More than one application, module or component that can share data and present the user with consistent information * D. More than one application, module or component that can connect to the same databases |
| Question 27 of 77  What is Naming?   |  | | --- | |  |  * A. The name of the object reference. * B. The name of the binding activity of the object. * C. Names of objects on the network activities * D. All are correct |
| Question 28 of 77  What Integration System is the easiest to perform all models?   |  | | --- | |  |  * A. Data Integration * B. Presentation Integration * C. Functional Integration * D. System Integration |
| Question 29 of 77  What are Challenges in system integration?   |  | | --- | |  |  * A. Technical &amp; Management challenges * B. Programming Language * C. Tools Support * D. Methods |
| Question 30 of 77  What are the benefits of data integration?   |  | | --- | |  |  * A. Data usage &amp; Cost Effective * B. Allows timely and reliable reporting, as data quality is the prime technology for business challenges * C. Allows timely and reliable reporting, as data quality is the prime technology for business challenges, Data usage &amp; Cost Effective * D. Allows timely and reliable reporting, as data quality is the prime technology for business challenges, Data usage. |
| Question 31 of 77  The integration style should be selected based on:   |  | | --- | |  |  * A. User requirements and constraints. * B. Advantages and disadvantages of team * C. Maintenance * D. All are correct |
| Question 32 of 77  What are possible solution for data transmission issue?   |  | | --- | |  |  * A. Data translators or create message service. * B. Develop synchronous/ asynchronous mechanisms to match requirement. * C. Maintain different formats continuously. * D. a and b are correct. |
| Question 33 of 77  What are Data Integration Common Mistakes?   |  | | --- | |  |  * A. Creating yet another database * B. Implementing the perfectly normalized schema * C. Waiting for the data analyst to finish developing the perfect schema * D. All are correct |
| Question 34 of 77  System should be defensed in?   |  | | --- | |  |  * A. Depth better than breadth * B. Breadth better than depth * C. Depth * D. Depth and breadth. |
| Question 35 of 77  What is the main difference in the life cycles?   |  | | --- | |  |  * A. Number of stages implemented * B. Execution time of each stage * C. Emphasis, duration, and timing of each stage * D. Emphasis, duration, number of stages and timing of each stage |
| Question 36 of 77  What are advantages of Asymmetric key cryptography?   |  | | --- | |  |  * A. Key is hard to distribute. * B. Key does not have to be replaced as often and distribution is easy. * C. Key is short * D. Key need to replace often. |
| Question 37 of 77  Important Security Terms include:   |  | | --- | |  |  * A. Authentication, Authorization, Firewall, Defense in breadth and depth. * B. Anticipation, Prevention, Completeness and Simplicity. * C. Authentication, Authorization, Trust, Security Protocols and Non-repudiation. * D. Authentication, Authorization, Encryption, Data Integrity and Non-repudiation. |
| Question 38 of 77  Enterprise information integration is BEST characterized by:   |  | | --- | |  |  * A. The ability to access data from any source, regardless of format or system * B. The ability to store data in one source without it being accessible to other systems * C. The ability to manipulate data remotely * D. The ability to access data without proper authorization |
| Question 39 of 77  When is the Functional Model Appropriate?   |  | | --- | |  |  * A. Multi-step processes must be coordinated * B. Data consistency is important. * C. Plug-and-play components * D. All are correct |
| Question 40 of 77  Nowadays, System integration involve a complete system, that are:   |  | | --- | |  |  * A. Business processes * B. Organizational structural alignments * C. Knowledge management * D. All are correct |
| Question 41 of 77  Which order is preferred (ưu tiên) to ensure the system defensed in depth?   |  | | --- | |  |  * A. Protect? Detect- Recover * B. Detect? Protect? Recover * C. Detect? Recover? Protect * D. Protect? Recover? Detect |
| Question 42 of 77  What are advantages of symmetric key cryptography?   |  | | --- | |  |  * A. Key are relative long. * B. Key must be replaced often * C. The encryption and decryption algorithms can be fast in both hardware and software. * D. Key distribution is easy, |
| Question 43 of 77  What are disadvantages of symmetric key cryptography?   |  | | --- | |  |  * A. Key are relatively short. * B. Key distribution is a problem (1) * C. Key must be replaced often (2) * D. (1) and (2) are correct. |
| Question 44 of 77  What are disadvantages of asymmetric key cryptography?   |  | | --- | |  |  * A. Encryption algorithms are normally slower than symmetric? Key cipher * B. Key much longer than 1000 bits. * C. Security is based on the difficulty of factoring large numbers. * D. All are correct. |
| Question 45 of 77  Integration of security service is   |  | | --- | |  |  * A. Easy. * B. An option decision. * C. Difficult and more risk than security of each component. * D. More risk than the risk of each component. |
| Question 46 of 77  What events are being logged?   |  | | --- | |  |  * A. Read or write data (1) * B. Authentication events (2) * C. (1) and (2) are correct * D. None is correct |
| Question 47 of 77  What are some kind of access control?   |  | | --- | |  |  * A. Mandatory access control, Discretionary access control, role-based access control. * B. Mandatory access control, Role-based access control. * C. Multilevel access control. * D. None is correct. |
| Question 48 of 77  How many architectures are there for data integration?   |  | | --- | |  |  * A. 4 * B. 3 * C. 2 * D. 1 |
| Question 49 of 77  What is the main goal of database normalization?   |  | | --- | |  |  * A. Restructure the logical data model of a database to eliminate redundancy. * B. Reduce the potential for data anomalies. * C. Not is correct. * D. Both a and b are correct. |
| Question 50 of 77  What is some of important security terms?   |  | | --- | |  |  * A. Authentication, authorization, Audit. * B. Authentication, access control, logging activity. * C. Load balance, data redundancy. * D. None is correct. |

Question 51 of 77  
What are some examples of middleware technologies commonly used in system integration?

* Web Technologies
* Middleware Technologies
* XML
* Distributed Objects

Question 52 of 77  
How does XML contribute to system integration?

Question 53 of 77  
What are the fundamental activities involved in a software development process?

* Software design and implementation
* Software evolution
* Software specification
* Software validation

Question 54 of 77  
How are databases typically treated in Presentation Integration models?

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**Question 55 of 77**  
What is ACID stand for?

* Atomicity\_Consistency\_Isolation\_Durability

Question 56 of 77  
How does the data integration model typically access the databases or data structures of an application?

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**Question 57 of 77**  
Compare 3 different integration models - **presentation, data** and **functional** **integration** in terms of impact on legacy systems?

* *Presentation Integration – information is integrated through the user interface component*
* *Data Integration – information is integrated through a middleware layer that has business intelligence*
* *Functional Integration – information is integrated among databases or data sources*

Question 58 of 77

How many types of types synchronous communication? What are they?

Remote Procedure Calls (RPC)

SOAP (Simple Object Access Protocol)

WebSockets

Message Queuing

RESTful APIs

Question 59 of 77

What are some examples of tools and middleware used in the data integration model?

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Question 60 of 77  
At what level does the functional integration model operate?  
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**Question 61 of 77**  
What is one of disadvantages of shared database integration? (Chọn 1)

• Semantic Dissonance hard to resolve

• Finding a workable schema difficult

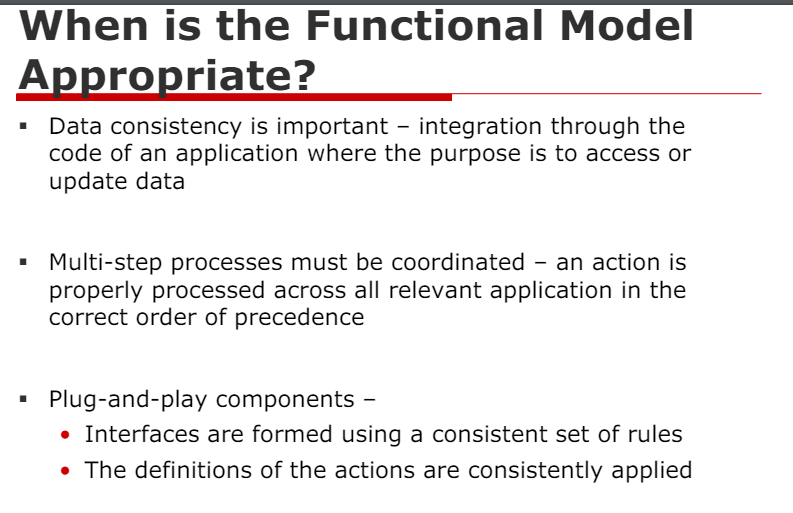
• Changed schemas break COTS applications

• Database may become performance bottleneck

• Database changes impact performance

• Not-so-standard SQL

• Ripple effect of changes  
  
Question 62 of 77  
What factors influence the decision to use the Functional Model for integration?



* Data consistency
* Multi-step processes must be coordinated
* Plug-and-play components

**Question 63 of 77** (slide 200) (chọn 1)  
What is **one** of criteria used for user authentication?

**Authentication Criteria**

* What you know - Passwords
* What you have – Physical keys, ATM cards
* What you are - Biometrics
* Who you know – Chain of authentication
* Where you are – Workstations
* Login throught username, password, PIN, or answers to security questions

**Question 64 of 77 (**slide 88)  
What is an example of a conflict in policies regarding data access?

* Users who have different roles in the organization can access data that should not be accessed
* Users with different roles accessing data they should not have access to

**Question 65 of 77**  
What is the purpose of a Message Queue in a messaging system?

* Enable asynchronous communication

**Question 66 of 77 (**Chọn 2/3)  
What are **two** type of access control?

* Mandatory access control
* Discretionary access control
* role-based access control.

**Question 67 of 77**  
How many kinds of the **main styles of integration systems**? What are they?  
There are 4 main styles of integration systems:

* File Transfer
* Shared Databases
* Remote Procedure Invocation
* Messaging Systems

**Question 68 of 77** (slide 75)  
What is a naming service?

* Software that converts a name into a physical address   
  (địa chỉ thực )

Question 69 of 77

What is the integration model?

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Question 70 of 77

What are the requirements of system integration?

Requirements Analysis (slide 25)

**Question 71 of 77**

What are some examples of middleware technologies commonly used in system integration?

* **Message Oriented Middleware**
* **Distributed Object Technology**
* **TP Monitor (**transaction-processing monitors)
* Batch File Transfer
* Database Gateway
* ODBC (Open Database Connectivity)
* OLAP (Online Analytical Processing)
* Data Transformation

Question 72 of 77

How does **XML** contribute (Đóng góp) to system integration?

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Question 73 of 77

What is the purpose of a software process model?

A software process model provides an abstract representation of the software development process from a specific perspective, aiding in planning, executing, and managing software projects.

**Question 74 of 77** (slide 46)

What are some examples of Presentation Integration models?

* Executive dashboards
* Operational status displays

**Question 75 of 77**

How does the data integration model impact legacy applications?

The data integration model typically accesses the databases or data structures directly within an application.

**Question 76 of 77**

What does “Coupling” mean for system integration?

Coupling – defines the degree of integration

Question 77 of 77 (slide 35-36)

How do you choose the best SDLC model for your project?

1 Project scope and complexity

2 Project team and communication

3 Project timeline and budget

4 Project quality and customer satisfaction

- PART III - ESSAY

ABC company has two separate systems(riêng biệt) for managing our Human Resources Department and Payroll department.

Every time the CEO asks for information about employees, it takes both departments a significant amount of time(mất một khoảng thời gian đáng kể) to gather CEO needs. CEO would like your team to develop a dashboard that can be used by senior managers to show summary information about their employees and their payroll and benefits information. The dashboards allowed the company to make informed decisions about human resource and payroll issues.

On the other hand, when the human resource staff enters an employee into the system, payroll also has a lot of information that they have to enter into their system.

Then CEO thinks data should only be entered once into either system. Once entered, the other system should be updated automatically. Any update in one system should result in an update in the other system, if applicable. The databases should be consistent within a few seconds once an update has taken place in one of the databases.

1. **Assumption that senior management would like an application that shows the total earnings by part-time and full-time employees. Design an UI page to meet the user's needs. A graph paper with writing on it

   Description automatically generated**
2. **The proposal should list 5 security risks that the system needs to address.**

Data Breach: Unauthorized access to sensitive employee and payroll information.

Data Integrity: Ensuring data consistency between the HR and Payroll systems.

Insider Threats: Malicious actions by employees with access to sensitive data.

Phishing Attacks: Employees falling victim to phishing, leading to compromised credentials.

Data Transmission Security: Ensuring data is securely transmitted between systems.

**C. The propose solutions for addressing the 5 security risks mentioned above.**

Data Breach:

Implement role-based access control (RBAC).

Encrypt data at rest and in transit.

Data Integrity:

Use database triggers and replication.

Conduct regular data audits.

Insider Threats:

Provide regular security training.

Monitor and log user activities.

Phishing Attacks:

Use multi-factor authentication (MFA).

Conduct phishing simulations and training.

Data Transmission Security:

Use HTTPS and TLS protocols.

Implement VPNs or private networks for internal data transfer.

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