**CÂU HỎI ÔN TẬP**

MÔN: TÍCH HỢP HỆ THỐNG- SE445

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**PART 1: TEST**

**The following algorithm is a symmetric encryption algorithm…………………………………………………………..**

a. Triple –DES, RC4, RC5, Blowfish

b**.** Triple –DES, RC4, RC5, IDEA

c. RC4, RC5, IDEA, Blowfish

d. IDEA, Blowfish, AES, Elliptic Cure

**2. Who will benefit from the integration system?**

a. Customer

b. Organizers of the enterprise

c. The people participate in the system

d. Everybody

**3. What contents are Information System included ?**

a. Historical data analysis, Process consistency, Exception reporting, security of data, Transparency to users

b. Data consistency, Data accessibility, Exception reporting, Historical data analysis, Process consistency

c. Data consistency, Data accessibility, Exception reporting, security of data, Transparency to users

d. Historical data analysis, Process consistency, Historical data analysis, Calculations on data

**4.Briefly describe 5 advantages for integrating legacy systems**

a. Business Process Automation/Streamlining, Cost Savings, e-Commerce Support, Information Management, Common Security Infrastructure

b. Business Process Automation/Streamlining, Cost Savings, e-Commerce Support, increasing data quality, may be cheaper to integrate existing legacy systems than build or acquire completely new system

c. may be cheaper to integrate existing legacy systems than build or acquire completely new system, can be integrated across organizational boundaries in order to provide e-commerce capability, can be achieved by elimination of manual information processing, Integration of systems can aid in encouraging data standardization, increasing data quality, and increasing data accessibility throughout the enterprise. Integration of legacy systems into common enterprise security infrastructure

d. Information Management, Common Security Infrastructure, may be cheaper to integrate existing legacy systems than build or acquire completely new system, can be integrated across organizational boundaries in order to provide e-commerce capability, Integration of legacy systems into common enterprise security infrastructure

**5. Describe the disadvantages of the Agile software development lifecycle**

a. The user may not have time to work with the developers, not suitable for systems that require a high degree of verification and validation

b. Not suitable for systems that require a high degree of verification and validation, Non-functional or system properties are difficult to plan

c. The user may not have time to work with the developers, Non-functional or system properties are difficult to plan

d. Not suitable for systems that require a high degree of verification and validation, Non-functional or system properties are difficult to plan, the user may not have time to work with the developers

**6. The technologies support for integration System are**

a. RPC, Middleware, Web, DTML, HTML

b. Middleware, Web, XML, Distributed Objects

c. ODBC. LDAP, XML, Distributed Objects

d. OLE, COM+, Web, XML, Distributed Objects

**7. The most important the values of Integration Heuristics**

a. Do not care about the most complete

b. Build and maintain options as long as possible in the design and implementation of complex systems

c. Choose the elements so that independent as possible

d.Simplify the components in the system if possible

**8. IPSec security protocols operate at layer**a. Only in the transport layer in the OSI model  
b. from 4 layer to 7 layer in OSI model  
c. Network Layer in OSI model  
d. All are uncorrect

**9. What’s the Software Development Life Cycle – SDLC?**

a. Is a process to improve software products

b. Is active in a specific project plan

c. Is the time from when the software starts to form until it is no longer used anymoreDictionary

1. verb
   1. làm cho đơn giản

d. All are correct

**10. What are the main difference of the life cycles?**

a. Number of stages implemented

b. Execution time of each s`tages

c.Emphasis, duration, and timing of each stages

d. All are correct

**11. Building and maintaining options is an important system engineering heuristic. Why must system engineers follow this heuristic?**

a. often complex with many unanticipated problems that can arise

b. flexibility to deal with these problems

c. a and b are correct

d. a and b are wrong

**12.Integrated Security includes**

a. Firewalls, Authentication, Integrity, Nonrepudiation, Confidentiality

b. Firewalls, Authentication, Integrity, Authorization, Confidentiality

c. Firewalls, Authentication, Integrity, Authorization, Confidentiality

d. Firewalls, Nonrepudiation, Integrity, Authorization, Confidentiality, Authentication

**13. Why are you integrating?**

a. Adaptable systems and processes, Integrated security, Management information, Reliable and recoverable systems, Economies of scale

b. Streamlined business processes, Replaceable components, Adaptable systems and processes, Integrated security, Economies of scale

c. Management information, Reliable and recoverable systems, Streamlined business processes, Replaceable components, Economies of scale

d. Adaptable systems and processes, Streamlined business processes, Management information, Support for electronic commerce, Integrated security, Replaceable components, Economies of scale

**14. How do you select a system development life cycle for a system integration project ?**

a. Suitability for small development team, Customizability/Flexibility of approach, Market adoption

b. Compatibility with distributed teams, Ability to handle rapidly changing (unstable) set of requirements, Emphasis on quality measurement

c. Size of product, Implementation cost, Built-in support for prototyping

d. All are correct

**15. What Integration System is the easiest to perform all models?**

a. Data Integration

b. Presentation Integration

c. Functional Integration

d. a,b,c false

**16. The order of the software life cycle phase**

a. Preliminary Investiation, Analysic, Design, Development/Construction, Testing, Implementation, Maintenance

b. Preliminary Investiation, Analysic, Design, Testing, Implementation, Maintenance, Development/Construction

c. Design, Development/Construction, Testing, Implementation, Maintenance, Development/Construction, Preliminary Investiation

d. Preliminary Investiation, Analysic, Design, Implementation, Maintenance,

**17. The integrated models include**

a. Presentation Integration, Security Integration, Functional Integration

b. Data Integration, Network Integration, Functional Integration

c. Functional Integration, Enviroment Integration, Presentation Integration

d. Presentation Integration, Data Integration, Functional Integration

**18. System integration life cycle differs from Software Development Life Cycle are**

a. Legacy system analysis, Testing and Dependencies

b**.** Legacy system analysis, Accessibility of legacy information constrains the design, Testing and Dependencies

c. integration, adaptation and Accessibility of legacy information constrains the design,

d. stages of operation, flexibility and resilience,

**19. Changes in underlying databases may affect GUI, Data may be inconsistent, API’s may not fully support information requirements, these are the disadvantages of the integrated model**

a. Data Integration

b. Presentation Integration

c. Functional Integration

d. all right

**20.The protocol for securing e-mail is**

a. GPG, S/MINE

b.SHA-1, S/MINE

c.CAST-128 / IDEA/3DES

d. Kerberos, X.509

**21.** **What are two architectures for Data Integration?**

a. data exchange is used with controlled data duplication, instead of on-line update.

b. Using a data conversion system on a unified format before using or in combination with database synchronization from the component database

c. Convert component databases into messages or use the database to extract data elements

d. No specific architecture for data integration

**22.** **Maintenance can be difficult and data may be inconsistent, these are the characteristics of the integrated model**

a. Data Integration and Functional Integration

b. Presentation Integration and Functional Integration

c. Data Integration and Presentation Integration

d. all right

**23. Security services includes:**

a. Authentication, Login, Data Confidentiality

b. Authentication, Data Integrity, Data Confidentiality

c.Authentication, Non-repudiation, Access control

d. Authentication, grant, Access control

**24.** **When is it Appropriate to use the Presentation Integration Model**

a. Presentation models are Executive dashboards or Operational status displays

b. Information presentation is through application API’s, Cannot access databases directly

**c.** Integrate with an application whose only useful and implementable integration base interface or dashboards, cannot access databases directly

d. Databases are independent – No coupling, Cannot access databases directly

**25. The systems following are RPC**

a. Sun RPC, DCE RPC, CORBA

b. Microsoft DCOM, Microsoft.NET Remoting

c. Java RMI, XML RPC, SOAP

d. All right

**26. The purpose of the network integration is**

a. These services must be configured to trust each other

b. Easy data exchange between services each other

c. Increase the linkages between the components in the network

d. All right

**27. Please provide the name of the main styles integration systems**

a. File Transfer, Shared Database, Remote Procedure Invocation, Integration Guidelines

b. File Transfer, Shared Database, Remote Procedure Invocation, Messaging

c. File integration, Shared Database, Remote Procedure Invocation, Messaging

d. Integration Guidelines, File integration, Shared Database, Remote Procedure Invocation

**28.** **Data Integration Common Mistakes**

a. Take more storage spaces for data integration

b. High cost

c. Difficult to apply in practice

d. Testing without a sufficient set of real data, Waiting for the data analyst to finish developing the perfect schema

**29.** .................................................**are the fundamentals of system security**

a. Authentication, access control, Login

b. Authentication, access control and Data Confidentiality

c. Authentication, access control, and auditing

d. Authentication, access control and Non-repudiation

**30. How many types middles do you have?**

a. Asynchronous communication, Subscribe Messaging, CORBA, ACID

b.Message Oriented Middleware, Object Architectures, Transaction Processing

c. Object Architectures, Transaction Processing. Subscribe Messaging

d. Message Oriented Middleware, Object Architectures, Transaction Process Monitors

**31.Yeu need to ensure use symmetric encryption is**  
**a.** Have good encryption algorithm, there is a secret key known by the recipient / posts and channels to distribute the secret key  
b. Have a suitable channel and a secret key known by the recipient / posts  
c. Have good encryption algorithm and a secret key known by the recipient / posts  
d. All right

**32.SSL security constraints operating on the layer**a. Network, Transport  
b. Network, Session  
c. Application, Session  
d. a, b and c ware wrong

**33. When were Architectural mismatches found ?**

a. integrated Story Systems

b. integrated analytical systems

c. integrated historical systems

d. integrated legacy systems

**34. When renting a VPN solution, the type of attack you need to consider?**a**.** Denial of Service (DoS) attacks, Internet Viruses ..  
b. Distributed Denial of Service (DDoS) attacks.  
c. Data confidentiality, IP Spoofing.  
d. Network mapping, Internet Viruses.

**35. Active Directory Services perform the following functions**  
a. Organization and construction of domain; authentication and authorization for the object  
b. Only the activities of security services for Windows Server and authentication, authorization for objects  
c. Only perform the authentication and grant the rights for users and groups  
d. Resource management and users; authentication and grant the rights for users and groups and supervise the activities of the user

**36.** **What is a naming service?**

a.is a software that converts a name into a physical address and reverse

b. is a software that converts a IP address into name of host

c. is a software that converts a name into a physical address

d. is a software that determine the resource on the network

**37.** **What port is the FTP used?**a. 21 b. 25 c. 23 d. 80   
**38. HTTPS port is used ……….**a. 443 b. 80 c. 53 d. 21

**39. When installing Windows 2000/2003 Server on NTFS system, but there were no display tables for the Security in Security?**  
a. Update Windows 2000 but not before installing remote  
b. Installing Windows Server 2000 multiple times on  
c. The Windows 2000 is not copyrighted  
d. All are correct

**40. 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 right

**PART 2: SHORT ANWSER**

Lecture 1

1. **Briefly describe 5 advantages for integrating legacy systems.**

Business Process Automation/Streamlining, Cost Savings, e-Commerce Support, increasing data quality, may be cheaper to integrate existing legacy systems than build or acquire completely new system

1. **Building and maintaining options is an important system engineering heuristic. Why must system engineers follow this heuristic?**

* System engineers must follow the heuristic of building and maintaining options to ensure flexibility, adaptability, and resilience in system design.

Lecture 2

1. **Recommend and briefly justify a System Development Life Cycle (SDLC) (or a hybrid SDLC) for integrating a small company’s financial and accounting system with a human resource system that must contain consistent information.**
2. I recommend the Agile-Waterfall hybrid SDLC for
3. integrating a small company's financial and accounting
4. system with its HR system. This hybrid model uses
5. Waterfall for thorough initial planning and design,
6. ensuring a solid foundation, and Agile for flexible, iterative
7. development and testing, allowing for continuous
8. feedback and adjustments, ensuring consistent and
9. accurate information across both systems

* I recommend the Agile-Waterfall hybrid SDLC. This hybrid model uses Waterfall for thorough initial planning and design, ensuring a solid foundation, and Agile for flexible, iterative development and testing, allowing for continuous feedback and adjustments, ensuring consistent and accurate information across both systems

1. **Describe 3 disadvantages of the Agile software development lifecycle?**

* scope creep, less predictability, need for highly skilled teams

Lecture 3

1. **Using a table, compare and contrast the 3 different integration styles – Presentation, Data, and Functional integration.**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Presentation** | **Data** | **Functional** |
| Integration  Focus | Improving user experience | Sharing authoritarian data and ensuring data integrity | Enforcing workflow and ensuring data integrity |
| Applicability | Front end user- application interactions | Backend data exchange | Frontend and middle to ensure business logics enforced |
| Technology | Web interface | Database links, JDBC, ODBC | Middleware, application logic |
| Standards | Usability | Data architecture | Application architecture |

1. **What does “Coupling” mean with respect to system integration?**

* Coupling defines the degree of integration. Loose coupling is where the integration is dependent on a few discrete interfaces. Strong coupling is usually where implementation dependencies occur

Lecture 5

1. **Briefly Describe 3 problems that can arise from integrating systems with different naming services.**

 Name Duplication & Conflicts

 Attribute & Protocol Mismatches

 Environment Assumptions

1. **Describe design technique for ensuring that systems are reliable.**

Use redundancy and failover mechanisms to ensure high availability, minimize downtime, and enhance resilience, while carefully managing cost and complexity.

Lecture 6

1. **Provide an example of what could go wrong if “Isolation” is not enforced in a system.**

**Example: Inventory System**  
Two users purchase the last item (stock: 1) at the same time.  
Result: Stock = -1.  
**Consequence:** Overselling.

Lecture 7

1. **Why does a system integrator have to be concerned about overlapping functionality in applications.(The students should be able to provide 2-3 reasons. Below are some examples of possible answers)**

* Redundancy and Inefficiency
* Data Consistency Issues
* Increased Maintenance Complexity

Lecture 8

1. **Why are the “Integration Guidelines” important when designing an integrated system?**
2. Because the system integrator does not have complete control over
3. the integrated system, so minimizing dependencies and changes in
4. each application.

* Because the system integrator does not have complete control over the integrated system, so minimizing dependencies and changes in each application.

1. **A system that integrated data that changes within minutes, such as stock prices or movement locations, may not want to store that information in a relational database. Why?**

Data that is does not need to be queried, merely displayed, does not need to be stored in a relational database. Databases are useful for data that must be summarized, queried, and searched The type of data that is described in the question, is usually stored fo reference, or replayed, but not necessarily queried.

1. **How many ways to integrate 2 applications with? Please tell me the advantages and disadvantages of each type?**

|  |  |  |
| --- | --- | --- |
| **Integration Method** | **Advantages** | **Disadvantages** |
| File-based | Simple, low cost, flexible | Manual, latency, data duplication |
| API-based | Real-time, flexible, scalable | Development effort, security concerns |
| Database | Direct access, consistency, real-time | Lock-in, complexity, performance risks |
| Message-based | Asynchronous, decoupled, reliable | Complex setup, latency, error handling |
| Middleware | Centralized control, scalable, reusable | Expensive, overhead, single point of failure |
| Webhooks | Real-time, lightweight, scalable | Limited, no retries, security concerns |

Lecture 10

1. **What are the advantages and disadvantages of 2nd and 3rd normalization**

**forms for databases.**

***Advantages and Disadvantages of 2NF and 3NF***

**2NF (Second Normal Form):**

* **Advantages:**
  + Eliminates partial dependencies, reducing redundancy.
  + Improves data integrity.
  + Easier to maintain.
* **Disadvantages:**
  + Increases the number of tables.
  + More complex queries (requires more JOINs).
  + Time-consuming design process.

**3NF (Third Normal Form):**

* **Advantages:**
  + Removes transitive dependencies, further reducing redundancy.
  + Enhances data consistency and maintainability.
  + Streamlined data structure.
* **Disadvantages:**
  + Adds even more tables.
  + Slower queries (with many JOINs).
  + More complex design process.

1. **What are the advantages and disadvantages of creating a separate database that contains redundant information from all the integrated applications?a**

*Advantages of separate Shared Databases:*- Simultaneous updates can be managed by a Transaction management process/system  
- When a family of integrated applications rely on the same database, the data is consistent  
- Shared database can store calculated or aggregated data not provided by interfacing apps  
*Disadvantages of separate Shared Database*  
- Shared database is one more update that must be kept in sync with other application  
- Updates, and code must be maintained in all affected application  
- Development and maintenance of a separate application may be required in order to manage Shared Database, as the interfacing applications , may not be able to change. Example - COTS applications joined by a Shared *Database*  
- If/When keeping only aggregated data, detail information is lost

Lecture 11

1. **What are some of the security risks in outsourcing software development (you should be able to come up with at least 3 risks specifically related to outsourcing software development).**

- Understanding of security requirements may differ between companies  
- Personnel at the other company may not meet or understand security requirements  
- Eunice must be taken to protes pertinent info. formulas, processes, and test data provided for, or exchanged during development  
- Company performung development service must be trustworthy  
- Cannat he sure that the other company is adequately protecting their system from compromise

Lecture 13

1. **Explain why selecting the middleware is a critical system integration decision.**

* Ensures seamless integration and data exchange (nếu là câu hỏi ngắn)

1. How many types middle ware do you have?

Message Oriented Middleware, Object Architectures, Transaction Process Monitors

Lecture 14

1. What is the purpose of network integration?

* Easy data exchange between services each other

Lecture 15

1. **You demonstrate in Enterprise Integrated Architecture.**

* Enterprise architecture is the process by which organizations standardize and organize IT infrastructure to align with business goals. These strategies support digital transformation, IT growth, and the modernization of IT.

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