Complex Information Systems. Exam preparation. Notes

1. Components of Logical Data model:
- entities, or groups of data
- their relationship(s) with each other

Proof: [Joyce_Duncan,_Lesley_Rackley,_Alexandria_Walker_SSADM in Practice Version 4, page 31

2. The products of (Derive System) Functions
- Function Definitions
- Input/Output Structures
- User Roles Function Matrix

Proof: [Joyce_Duncan,_Lesley_Rackley,_Alexandria_Walker_SSADM in Practice Version 4, page 50

3. Properties of Platform as a Service
- it has parallels with web hosting
- Enables the complete application development life cycle within a cloud
- Tools for development and testing
- Resources are dynamically scaled

Proof: Complex Information Systems 08.pdf, page 21

4. Business Process Modelling - UML Activity Diagram components
- Actions
- Control flow
- Split and Join
- Decisions
- Swimlanes

Proof: Complex Information Systems 06.pdf, page 13

5. Components of Web Technology for Cloud Computing
- a key to building cloud systems - HTTP
- asks the server for information about resource - HEAD
- stores data in a resource - PUT
- sends data to a program to be processed on the server - POST
- deletes the specified resource - DELETE

Proof: Complex Information Systems 08.pdf, page 31

6. Advantages of modelling the business processes
- Basis for continued optimisation
- Basis for creating information systems that support the business processes
- Better understanding of existing business processes
- Basis for improving existing business processes
- Documents the business process
- Basis for experiencing and simulating new concepts and impact on the organisation
- It is known as Workflow Management Systems

Proof: Complex Information Systems 06.pdf, page 8

7. What is Cloud Computing?
- cloud computing is a means by which computational power
- storage
- collaboration
- infrastructure
- business processes
- applications

- can be delivered as a utility, that is a service or collection of services that meet your demands
- In the need of extra processing power, it is available in an instant

Proof: Pages from Guide to Cloud Computing, page 3

8. In which components of the asset management process is production involved?

- Request maintenance
- Authorise maintenance
- Perform maintenance

Proof: m5zn_1073d1de2c663d8_Integrated Business Processes with ERP Systems.pdf, page 12

9. A three-tier architecture includes which of the following components

- Presentation layer
- Application layer
- Data layer

Proof: m5zn_1073d1de2c663d8_Integrated Business Processes with ERP Systems.pdf, page 24

10. Why is there a Need for Integration?

- Hundreds or thousands of applications are custombuilt, third-party, part of legacy systems, etc.
- Business applications are complex →writing them are hard
- ERP vendors created large business applications, but perform a fraction of the business functions required

Proof: Complex Information Systems 07.pdf, page 14

11. What is Autonomic computing?

- Autonomic computing attempts to specify behaviors that enable the self-management of systems
- Self-configuration
- Self-healing
- Self-optimizing
- Self-protection

Proof: Complex Information Systems 08.pdf, page 13

12. What are the requirements for implementing WFM system?

- Well Established IT infrastructure
- SOA: Application called as services.
- Resources to model the business, to implement them to support and monitor the running instances
- The organization must be ready for change. People get new way of working.
- Skilled people.

  Proof: Complex Information Systems 06.pdf, page 27

- **13. Advantages of Work Flow Management**

- Higher productivity
- Moves knowledge from people to documented process
- Rapid adaptation to the market
- Location of bottlenecks and runtime changes of process
- Statistics about processes
- Continued optimization
- Reuse of services and processes
- All processes are implemented in same framework
- Proof: Complex Information Systems 06.pdf, page 26

14. Construction of the Effect correspondence Diagram

- For each event on the ELHs draw a box representing each entity affected by the event. Look through the ELH set and find all entities that have the same event occurring and include the entity on the ECD.

- Draw a separate box for simultaneous effects on the same entity, where each effect is performed in sequence. This is identified on the ELH where an event 'leaf has a different 'role' in an event for each of the effects.
- Include optional effects, where there is a selection of one effect only to be performed. This is when an event can affect an entity in two or more mutually exclusive ways.
- Add iterated effects as iterated boxes. This is established by checking the LDS; if a master to detail relationship of 'one to many' is shown then each detail will need updating. The detail node must be notated to show iteration, then a new node representing the set of details is constructed and linked to the iterative node.
- Add one-to-one correspondence between effects; to do this you need to examine the entities from the LDS that appear in the ECD that have a one-to-one relationship and ask the question
- Merge effects that are iterative. This occurs where an entity is affected in more than one iterative way during an event and where the iterations refer to the same relationship on the LDS. The effects should be merged to show either an iterated selection or a selection of iterations.
- Add non-updated entities for enquiry purposes . Having dealt with the entities that will be updated by the event, the diagram must now be checked to ensure that all data needed for the event is present. Examine the ECD and ask if all data is represented that is required for output from the event; also is it possible to access all entities on the ECD without using unaffected entities from the LDS? If the answer is no then add the entities in question to the ECD.
Proof: [Joyce_Duncan,_Lesley_Rackley,_Alexandria_Walker_SSADM in Practice Version 4.pdf, page 91

15. A plant can be used to represent which of the following?
- A factory
- An office
- A storage facility (warehouse, Distribution center C)
Proof: m5zn_1073d1de2c663d8_Integrated Business Processes with ERP Systems.pdf, page 31

16. Workflow is
- a model of the business process, but contains much more details about technical issues
- a program written in a declarative language, most often XML based
- executable by a runtime engine, which can interpret the workflow language
Proof: Complex Information Systems 06.pdf, page 18

17. Material master data are grouped based on:
- Process
- Material type
- Organizational Element
Proof: m5zn_1073d1de2c663d8_Integrated Business Processes with ERP Systems.pdf, page 289

18. THE UNIFIED PROCESS - The Most Important UP Ideas:
- Each iteration includes its own requirements analysis, design, implementation, and testing activities.
- The iterative lifecycle is based on the successive enlargement and refinement of a system through multiple iterations, with cyclic feedback and adaptation as core drivers to converge upon a suitable system.
Proof: 0130925691_Larman_ Applying_UML-Patterns_2nd.pdf, page 14

19. Possible Types of Virtualisation
- Desktop Virtualization
- Server Virtualization: Efficiency, Isolation, Mobility
- Storage Virtualization
Proof: Complex Information Systems 08.pdf, page 34

20. Producing the ELH: (Steps)
- it is usual to start with the entities at the lowest level of hierarchy in the LDS, i.e, the entities which are only details and are not masters of lower level entities.
- Having chosen an initial entity, we now look at the Function Definitions and identify the event(s) which create that entity.
- If there is more than one possible way of creating a particular entity, then this may be represented by a selection under the overall event responsible for triggering the creation process.

Proof: [Joyce_Duncan,_Lesley_Rackley,_Alexandria_Walker_SSADM in Practice Version 4.pdf, page 86

21. The Wide World of Integration - Fields and Methods of Various Solutions
- Information Portals
- Data Replication
- Shared Business Functions
- Service-Oriented Architectures
- Distributed Business Processes
- Business-to-Business Integration

Proof: Complex Information Systems 07.pdf, page 16

22. Advantages of modeling the business processes
- Better understanding of existing business processes
- Documents the business process
- Basis for improving existing business processes
- Basis for experiencing and simulating new concepts and impact on the organization
- Basis for continued optimization
- Basis for creating information systems that support the business processes
- One type is known as Workflow Management Systems

Proof: Complex Information Systems 06.pdf, page 8

23. Why Use Messaging?
- Remote Communication
- Platform/Language Integration
- Asynchronous Communication
- Variable Timing
- Throttling
- Reliable Communication
- Disconnected Operation
- Mediation
- Thread Management

Proof: Complex Information Systems 07.pdf, page 8

24. What is true about contemporary, market leader ERP System (e.g. SAP R/3)?
- Executes every process from start to finish
- Consolidates process data in a single database
- Enables users to view the status of a process in real time

Proof: https://quizlet.com/124757627/itss-4340-flash-cards/

25. Which of the following statements concerning Web services are true?
- Web services expose functionality to other applications.
- Web services are an essential component of enterprise systems.
- Web services can be used to create composite applications.

Proof: https://gradebuddy.com/doc/3066041/ch02-test-qu/

26. Which of the following are steps within a generic business process of an organisation? (1pts)
- Trigger
- Outcome

Not proven!!!

27. Which of the following statements about SAP ERP are true?
- Consolidates process data in a single database
- Can be used to execute all processes in an organization
- Enables users to view the status of a process in real time

Proof: https://quizlet.com/439848759/enterprise-systems-flash-cards/

28. What is Utility Computing?
- The nature of utilities such as water, natural gas and electricity in the way they are provided to create an understanding of the characteristics that computing would require if it was truly a utility

Proof: Complex Information Systems 08.pdf, page 7

29. FULFILLMENT-SELL - Process steps
- efficiently processing customer orders. It is triggered by a customer purchase order that is received by the sales department.
- Sales then validates the order and creates a sales order.
- The sales order communicates data related to the order to other parts of the organization, and it tracks the progress of the order.
- The warehouse prepares and sends the shipment to the customer.
- Once accounting is notified of the shipment, it creates an invoice and sends it to the customer. The customer then makes a payment, which accounting records.

30. Within the financial structure, typical functions or departments found in a modern organisation include which of the following
- purchasing
- operations
- finance
- marketing

31. Which of the following are components of the lifecycle data management process?
- Engineering
- Marketing
- Production

32. Which of the following statements regarding process level reporting are true?
- It provides information on the performance of a process across many occurrences (e.g., customer orders over time).
- It is based on data in the transactional system.
- It uses aggregated data.

Proof: https://quizlet.com/314278711/erp-chapter-2-ma-flash-cards/

32. Which of the following activities are related to the production process?
- Request materials
- Store materials
- Locate Materials
- Issue Materials

33. Which of the following statements concerning transaction data are true?
- Transaction data are a consequence of the execution of process steps.
- Transaction data are constantly changing.

https://quizlet.com/314278711/erp-chapter-2-ma-flash-cards/

34. What are System Sequence Diagrams
- a picture that shows, for a particular scenario of a use case
- the events that external actors generate, their order, and inter-system events.
- All systems are treated as a black box
- the emphasis of the diagram is events that cross the system boundary from actors to systems
Proof: 0130925691_Larman_ Applying_UML-Patterns_2nd.pdf, page 130

35. Properties of Software as a Service
- The software automatically scales to the number of users
- data is backed up
- useful if you are in the situation whereby a legacy application you own has been replicated by a SaaS provider
- offers a capability that you don't currently have but can see the business benefit of having it

36. Steps in Producing a Level DFD of the Current Physical System
- Identify the major data flows into and out of the system, together with their respective starting and finishing points (the source and recipient of the data). The source and recipient will normally become external entities on the DFD.
- Identify the processes which receive the incoming data and the stores used to hold such data.
- Identify the processes which generate outward flows together with the relevant data stores, for example Draw a DFD showing these external entities, processes, data flows and stores .
- Add any additional processes, flows and data stores needed to link the existing processes together or to cover other activities identified during the investigation.
- Review for accuracy, completeness, etc.
Proof: [Joyce_Duncan,_Lesley_Rackley,_Alexandria_Walker_SSADM in Practice Version 4.pdf, page 36

37. Attributes of a Use Case Description Table
1. Use case name
2. Scope
3. Level
4. Primary actor
5. Stakeholders and interests
6. Preconditions
7. Success guarantee
8. Main success scenario
9. Extensions
10. Special requirements

Proof: https://slideplayer.com/slide/9281822/

38. Which processes have an impact on an organization's finances?
- Project Management processes
- Material planning process
- Procurement process

39. What is design?
- Design emphasizes a conceptual solution that fulfills the requirements, rather than its implementation.
- E.g., a description of a database schema and software objects.
- Ultimately, designs can be implemented
Proof: https://www.informit.com/articles/article.aspx?p=360440&seqNum=3

40. What is silo effect?
- workers complete their tasks in their functional "silos" without regard to the consequences for the other components in the process.

- By focusing so narrowly on their specific tasks, they lose sight of the “big pic- ture” of the larger process, be it procurement, fulfillment, or any number of other common business processes.
- people in the different functional areas came to perform their steps in the process in isolation, without fully understanding which steps happen before and which steps happen next.

41. Workflow Management System consist of
- Language,
- Some kind of web service composition language, eg. BPEL, BPML.
- Often based on graphs
- Build time IDE to build the workflows. Gives a graphical user interface to the language Runtime engine to handle instances of the workflows
- Monitor to get overview of running and finished processes

Proof: Complex Information Systems 06.pdf, page 20

42. Which of the following are process steps of the generic business process
- Payment
- Shipment
- Validation

Not proven!!!

43. Advanced ERP human resource features
- tracking costs
- revenues for internal reporting
- to help management control costs and revenues
- assess the profitability of various products and market segments.

Not proven!!!

44. What part of the project management process is within the various functional areas?
- Settlement
- Planning
- Execution
- Budgeting

Proof: https://www.coursehero.com/file/p4nubvd/What-part-of-the-project-management-process-is-within-the-various-functional/

45. The procurement process includes
- Accounting then sends payment to the vendor, thereby completing the process.
- The warehouse then documents this need in the form of a purchase requisition, which it sends to the pur- chasing department.
- The vendor ships the materials, which are received in the warehouse.
- The vendor then sends an invoice, which is received by the accounting department.
- The process begins when the warehouse recognizes the need to procure materials, perhaps due to low levels of inventory.
- In turn, the purchasing department identifies a suitable vendor, creates a purchase order, and sends it to the vendor.

Proof: m5zn_1073d1de2c663d8_Integrated Business Processes with ERP Systems.pdf, page 26