



UNIVERSITY OF COLOMBO, SRI LANKA

UNIVERSITY OF COLOMBO SCHOOL OF COMPUTING

DEGREE OF BACHELOR OF INFORMATION TECHNOLOGY (EXTERNAL)  
*Academic Year 2008/2009 – 1<sup>st</sup> Year Examination – Semester 2*

***IT2403: Systems Analysis and Design***  
***Multiple Choice Question Paper***

**09<sup>th</sup> August 2009**

**(TWO HOURS)**

**Important Instructions :**

- The duration of the paper is 2 (two) hours.
- The medium of instruction and questions is English.
- The paper has **50 questions** and **15 pages**.
- All questions are of the MCQ (Multiple Choice Questions) type.
- All questions should be answered.
- Each question will have 5 (five) choices with **one or more** correct answers.
- All questions will carry equal marks.
- There will be a penalty for incorrect responses to discourage guessing.
- The mark given for a question will vary from 0 (*All the incorrect choices are marked & no correct choices are marked*) to +1 (*All the correct choices are marked & no incorrect choices are marked*).
- Answers should be marked on the special answer sheet provided.
- Note that questions appear on both sides of the paper.  
If a page is not printed, please inform the supervisor immediately.
- Mark the correct choices on the question paper first and then transfer them to the given answer sheet which will be machine marked. **Please completely read and follow the instructions given on the other side of the answer sheet before you shade your correct choices.**

1) A systems development methodology is a process for the system development stage which defines a set of phases and activities. Which of the following is /are true regarding systems development methodologies?

- (a) The scope of phases and activities vary from business to business.
- (b) Once the phases are defined, they cannot be customized based on the deadline needs of a given project.
- (c) Maintaining documentation is a wastage and adds too little value to the process.
- (d) The analysts should cancel the project if they find out that the project is no longer feasible.
- (e) Various tools will support software development methodology and will replace systems analysts.

2) A feasibility study is carried out

- (a) only during the period when analyzing the requirements.
- (b) once the system design is done.
- (c) throughout the system development life cycle.
- (d) only when the top management is not sure about what they really want from the system.
- (e) to tell the organization's managers how the system will function.

3) Information Systems can be classified according to the functions they serve as given below.

- (a) Stand alone systems
- (b) Expert Systems
- (c) Decision Support systems
- (d) Transaction Processing Systems
- (e) Web based systems

4) The main objective of feasibility study is to assess

- (a) whether it is possible to meet the requirements specifications.
- (b) if it is possible to meet the requirements specified subject to constraints of budget, human resources and hardware.
- (c) the management capacity in implementing the desired system.
- (d) remove bottlenecks in implementing the desired system.
- (e) the performance of the development team.

5) Each of the blanks labelled A – E of the paragraph given below has to be filled with the most appropriate word selected from the phrases labelled (i) – (v).

- (i) Physical Models
- (ii) Logical Processes
- (iii) Physical Processes
- (iv) Logical Models
- (v) Physical Design
- (vi) Logical Design

....**A**..... are constructed to better understand business problem domains and business requirements. ....**B**.... is a technical pictorial representation that shows what a system is or does and how the system is implemented. ...**C**..... is the process of translating the business user requirements into a system model that shows the technical implementation of the users' business requirements. ....**D**..... show essential work to be performed by a system without showing how the processes will be implemented. . ....**E**..... are either *processors*, such as computers or persons, or a technical implementations of specific work to be performed, such as a computer programs or manual processes.

(a)	A – (i)	B – (iv)	C – (vi)	D – (iii)	E – (ii)
(b)	A – (iv)	B – (i)	C – (vi)	D – (iii)	E – (iii)
(c)	A – (i)	B – (iii)	C – (v)	D – (ii)	E – (iv)
(d)	A – (iv)	B – (iii)	C – (vi)	D – (ii)	E – (v)
(e)	A – (iv)	B – (i)	C – (v)	D – (ii)	E – (iii)

6) Which of the following is/are **not** traditional, basic system development phases?

(a) Project Management	(b) Systems Analysis	(c) System Implementation
(d) Process Management	(e) Systems Design	

7) Consider the following diagrams

- (i) Structure Chart
- (ii) Entity Relationship diagram
- (iii) Data flow diagram
- (iv) Gantt Chart

Which of the above is/are process modeling technique(s) ?

(a) (i) Only
(b) (ii) Only
(c) (i) and (iii) Only
(d) (ii) and (iv) Only
(e) All

**Questions 8-10 are based on the following description and the table.**

Suppose you are designing a Web based system where your regional officers can submit their sales reports online instead of filling them out by hand and mailing them in. Three candidate solutions were identified and the corresponding estimated lifetime benefits and costs are shown below.

	Estimated Lifetime Benefits	Estimated Lifetime Costs
Candidate Solution1	500,000	100,000
Candidate Solution2	500,000	250,000
Candidate Solution3	400,000	200,000

8) According to return on investment analysis, what is the Lifetime ROI value for the Candidate Solution 1?

(a) 100,000	(b) 400,000	(c) 4	(d) 0.8	(e) 80
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9) Which of the following candidate solution(s) give(s) the best alternative for the given problem?

(a) Candidate Solution 1	(b) Candidate Solution 2	(c) Candidate Solutions 1 and 2
(d) Candidate Solutions 2 and 3	(e) Candidate Solutions 1,2 and 3	

- 10) Suppose the organization sets a minimum lifetime ROI to 80 percent. Which of the following solution(s) is /are economically feasible?
- |                            |                     |                     |
|----------------------------|---------------------|---------------------|
| (a) Solution 1 Only        | (b) Solution 2 Only | (c) Solution 3 Only |
| (d) Only Solutions 1 and 2 | (e) All             |                     |
- 11) Which of the following is/are correct regarding Technical feasibility?
- |  |
|--|
| (a) It is a measure of the practicality of a technical solution and availability of technical resources and expertise.   |
| (b) It is the measure of how well a proposed system solves the problems and takes advantage of the opportunities identified during the problem definition and problem analysis phases. |
| (c) It looks at the financial aspects of the system.   |
| (d) It deals with how the end users feel about the proposed system.  |
| (e) It is a measure of the cost effectiveness of a project or solution.  |
- 12) Which of the following is/are identified as feasibility tests?
- |                           |
|---------------------------|
| (a) Project Feasibility   |
| (b) Schedule Feasibility  |
| (c) Political Feasibility |
| (d) Legal Feasibility     |
| (e) Economic Feasibility  |
- 13) Which of the following is/are correct regarding a Feasibility Analysis Matrix?
- |  |
|--|
| (a) The columns of the matrix correspond to the same candidate solutions as shown in the candidate systems matrix. |
| (b) Columns of the matrix correspond to the feasibility tests.   |
| (c) This matrix does not analyze candidate solutions.  |
| (d) After assigning a score for each criterion, a final ranking or score is recorded.                              |
| (e) It is a tool used to rank candidate systems.   |
- 14) Which of the following is/are correct regarding a Candidate System Matrix?
- |   |
|---|
| (a) It does not rank candidate systems.                                       |
| (b) Columns of the matrix represent candidate solutions.                      |
| (c) It documents similarities and differences between candidate systems.      |
| (d) It is useful for presenting candidates and recommendations to management. |
| (e) It is a tool used to analyze candidate systems.                           |
- 15) Which of the following is a/are fact finding technique(s)?
- |                             |                    |                  |
|-----------------------------|--------------------|------------------|
| (a) Data flow Modeling      | (b) ER Modeling    | (c) Interviewing |
| (d) Information Engineering | (e) Questionnaires |                  |
- 16) Which of the following is an/are advantage(s) of fact finding through 'observation of the work environment'?
- |   |
|---|
| (a) Allows the Systems Analyst to do work Measurements                                      |
| (b) Relatively expensive method compared with other techniques                              |
| (c) It does not require more employee release time and copying expenses.                    |
| (d) Data gathering may be highly reliable.  |
| (e) Work being observed may involve the level of difficulty or volume normally experienced. |

- 17) Given below are some statements associated with requirement discovery methods. Identify the correct statement(s) from among them.
- (a) Use of online Questionnaires provides a relatively expensive way of fact finding from a large number of individuals.
  - (b) A disadvantage of observation of the work environment is that the employees usually feel uncomfortable while being watched and they may unwittingly perform differently.
  - (c) When using online questionnaires, the responses from users can be tabulated and analyzed quickly.
  - (d) Questionnaires are used when the validity of data collected through other methods is in question.
  - (e) 'Observation of the work environment' is often used when the complexity of certain aspects of the system prevents a clear explanation by the end users.
- 18) Building a small working model of the users' requirements or a proposed design for an information system is known as prototyping. Which of the following statement(s) is / are true regarding this technique?
- (a) Through prototyping one will gain a better appreciation of how the final system will look and feel.
  - (b) Help to validate requirements with fewer errors
  - (c) It creates a culture where only the analyst and designer play the leading role.
  - (d) Allow analysts to create mock forms and tables to simulate the system
  - (e) Main role is to improve the requirement definition by involving potential system users.
- 19) Which of the following is/are correct regarding the requirements gathering technique 'Use of Questionnaires'?
- (a) Questionnaires allow the analysts to collect information and opinions from a large audience
  - (b) Mostly suited for open questions
  - (c) One disadvantage is that there is no opportunity for the system analyst to obtain voluntary information from individuals or to reword questions which may have been misinterpreted.
  - (d) Good questionnaires are difficult to prepare.
  - (e) There is no guarantee that an individual will answer or expand on all of the questions.
- 20) The statements given below are associated with requirements analysis. Identify the correct statement(s) from among them.
- (a) System requirements can be categorized as functional or nonfunctional requirements.
  - (b) In order to understand working of an organization for which a computer based system is being designed, an analyst must refer to the organizational chart.
  - (c) A disadvantage of using a questionnaire is that it is not possible for the systems analyst to observe and analyze the respondent's body language.
  - (d) The requirements-gathering methods may not depend on the kind of system being studied.
  - (e) Communication is one of the most important issues in eliciting requirements during analysis.

- 21) Column A contains Requirements Discovery Methods. A Phrase from Column A has to be matched with the most appropriate phrase from Column B.

	Column A		Column B
(i)	Joint Requirement planning	A	Most analysts start with this method to get a pretty good feel of the system.
(ii)	Interviews	B	Very time consuming, and therefore a costly, fact finding approach
(iii)	Sampling of existing documentation	C	It is being used as a substitute for numerous and separate interviews.
(iv)	Prototyping	D	A process whereby highly structured group meetings are conducted for the purpose of analyzing problems and defining requirements.
(v)	JRP	E	Serves as a training mechanism for users

The correct matching is

(a)	(i) & D	(ii) & C	(iii) & B	(iv) & E	(v) & A
(b)	(i) & C	(ii) & D	(iii) & A	(iv) & B	(v) & E
(c)	(i) & C	(ii) & B	(iii) & A	(iv) & D	(v) & E
(d)	(i) & D	(ii) & B	(iii) & C	(iv) & A	(v) & E
(e)	(i) & C	(ii) & B	(iii) & A	(iv) & E	(v) & D

The blanks in Questions 22 – 26 have to be filled by selecting the most appropriate words/phrases from the list labelled (i) – (v). Note that one word/phrase may be used in more than one instance.

- (i) Entity Relationship Diagram
- (ii) Data Flow Diagram
- (iii) Context Data Flow Diagram
- (iv) Functional Decomposition Diagram
- (v) Class diagram

What is the most appropriate way of filling the blanks?

- 22) The purpose of a .....is to analyze how the system interacts with the world around it and to specify in general terms the system inputs and outputs.

(a) (i)	(b) (ii)	(c) (iii)
(d) (iv)	(e) (v)	

- 23) ..... is an object oriented modeling method.

(a) (i)	(b) (ii)	(c) (iii)
(d) (iv)	(e) (v)	

- 24) ..... is a data modeling technique.

(a) (i)	(b) (ii)	(c) (iii)
(d) (iv)	(e) (v)	

- 25) ..... is constructed to establish initial project scope.

(a) (i)	(b) (ii)	(c) (iii)
(d) (iv)	(e) (v)	

- 26) ..... is drawn for large systems to partition the system into logical subsystems and/or functions.

(a) (i)	(b) (ii)	(c) (iii)
(d) (iv)	(e) (v)	

- 27) Each of the blanks labelled **A – E** of the paragraph given below has to be filled with the most appropriate word selected from the phrases labelled (i) – (v). Note that one word or phrase may be used more than once.
- (i) Entity
  - (ii) Attribute
  - (iii) Cardinality
  - (iv) degree
  - (v) domain

A/An ...**A**..... of an attribute defines what values the attribute can legitimately take on. A/An ...**B** is something about which the business needs to store data. A/An ...**C**.....(s) are specific pieces of data one wants to store about each instance of a given entity. The values for each attribute are defined in terms of data type, .....**D**..... and default. ....**E**..... defines the minimum and maximum number of occurrences of one entity that may be related to a single occurrence of the other entity.

(a)	<b>A – (v)</b>	<b>B – (i)</b>	<b>C – (v)</b>	<b>D – (iii)</b>	<b>E – (iv)</b>
(b)	<b>A – (ii)</b>	<b>B – (iii)</b>	<b>C – (iv)</b>	<b>D – (v)</b>	<b>E – (i)</b>
(c)	<b>A – (v)</b>	<b>B – (i)</b>	<b>C – (iv)</b>	<b>D – (ii)</b>	<b>E – (ii)</b>
(d)	<b>A – (ii)</b>	<b>B – (iv)</b>	<b>C – (v)</b>	<b>D – (v)</b>	<b>E – (iii)</b>
(e)	<b>A – (v)</b>	<b>B – (i)</b>	<b>C – (ii)</b>	<b>D – (v)</b>	<b>E – (iii)</b>

- 28) Which of the following phases should be carried out by a systems analyst?

(a) decision analysis phase
(b) requirements analysis phase
(c) design analysis phase
(d) problem analysis phase
(e) scope definition phase

**Questions 29 and 30 are based on the following description.**

Suppose you were asked to draw a document flow diagram for the following user description.  
 A company receives many items from several vendors each accompanied by a delivery note. A receiving office receives the item and checks the delivery note with corresponding order. Any discrepancy is reported to the purchase office. The items received along with items received note (with details of items) is sent to the inspection office.

- 29) Consider the following.
- (i) Delivery note
  - (ii) discrepancy note
  - (iii) Items received note

For the above scenario, identify the corresponding document(s) which will flow between the entities in the document flow diagram.

(a) Only (i)
(b) Only (ii)
(c) Only (i) and (iii)
(d) Only (i) and (ii)
(e) All

30) For the above scenario, Entity (ies) in the document flow diagram is / are

- (a) Vender.
- (b) Receiving Office.
- (c) Order.
- (d) Item.
- (e) Inspection Office.

31) Identify the symbols and connections used in Data flow diagrams.

- (a) Processes
- (b) Data flows
- (c) External Entities
- (d) Data stores
- (e) Use Cases

32) Data cannot flow between a store and .....

- (i) a store.
- (ii) a process.
- (iii) an external entity.

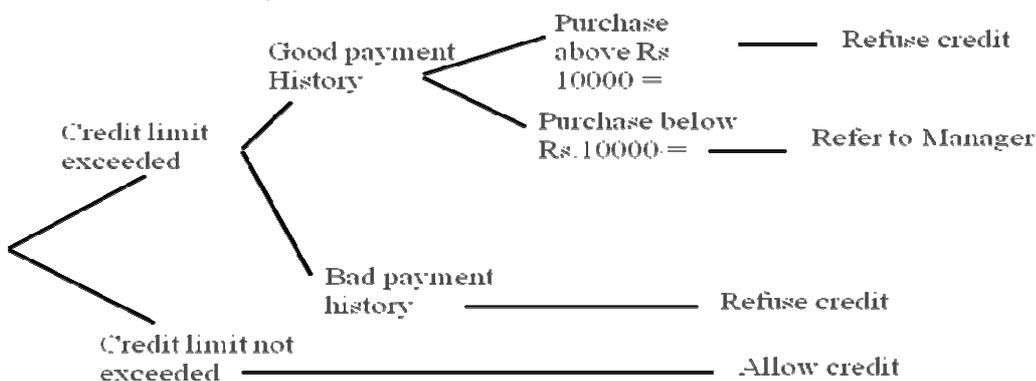
Which word/phrase is suitable to fill the above blank space?

- (a) Only (i)
- (b) Only (ii)
- (c) Only (i) and (ii)
- (d) Only (i) and (iii)
- (e) Only (ii) and (iii)

33) Which of the following is / are correct regarding a Gane and Sarson Data Flow Diagram (DFD)?

- (a) Data cannot flow from an external entity to an external entity because both are outside the context of the system.
- (b) A rectangle in a DFD represents a process.
- (c) A data store in a DFD represents a process.
- (d) Components of a Data flow diagram are data flows, data stores, data structures and data dictionaries.
- (e) Data flow diagrams are also known as Bubble charts.

34) Consider the following decision tree.



Which of the following Decision table(s) best represent the above decision tree?

(a)

Condition	Credit limit exceeded	Y	Y	Y	Y	N	N	N	N
	Good payment history	Y	Y	N	N	Y	Y	N	N
	Purchase above Rs.10000/=	Y	N	Y	N	Y	N	Y	N
Action	Allow credit					X	X	X	X
	Refuse credit	X		X	X				
	Refer to Manager		X						

(b)

Condition	Credit limit exceeded	Y	Y	Y	Y	N	N	N	N
	Good payment history	Y	N	Y	N	Y	N	Y	N
	Purchase above Rs.10000/=	Y	Y	N	N	Y	Y	N	N
Action	Allow credit					X	X	X	X
	Refuse credit	X		X	X				
	Refer to Manager		X						

(c)

Condition	Credit limit exceeded	Y	Y	Y	Y	N	N	N	N
	Good payment history	Y	N	Y	N	Y	N	Y	N
	Purchase above Rs.10000/=	Y	Y	N	N	Y	Y	N	N
Action	Allow credit					X	X	X	X
	Refuse credit	X	X		X				
	Refer to Manager			X					

(d)

Condition	Credit limit exceeded	Y	Y	Y	Y	N	N	N	N
	Good payment history	Y	N	Y	N	Y	N	Y	N
	Purchase above Rs.10000/=	Y	Y	N	N	Y	Y	N	N
Action	Allow credit								
	Refuse credit	X		X	X	X	X	X	X
	Refer to Manager		X						

(e)

Condition	Credit limit exceeded	Y	N	Y	N	Y	N	Y	N
	Good payment history	Y	Y	N	N	Y	Y	N	N
	Purchase above Rs.10000/=	Y	Y	Y	Y	N	N	N	N
Action	Allow Credit		X		X		X		X
	Refuse	X		X				X	
	Refer Manager					X			

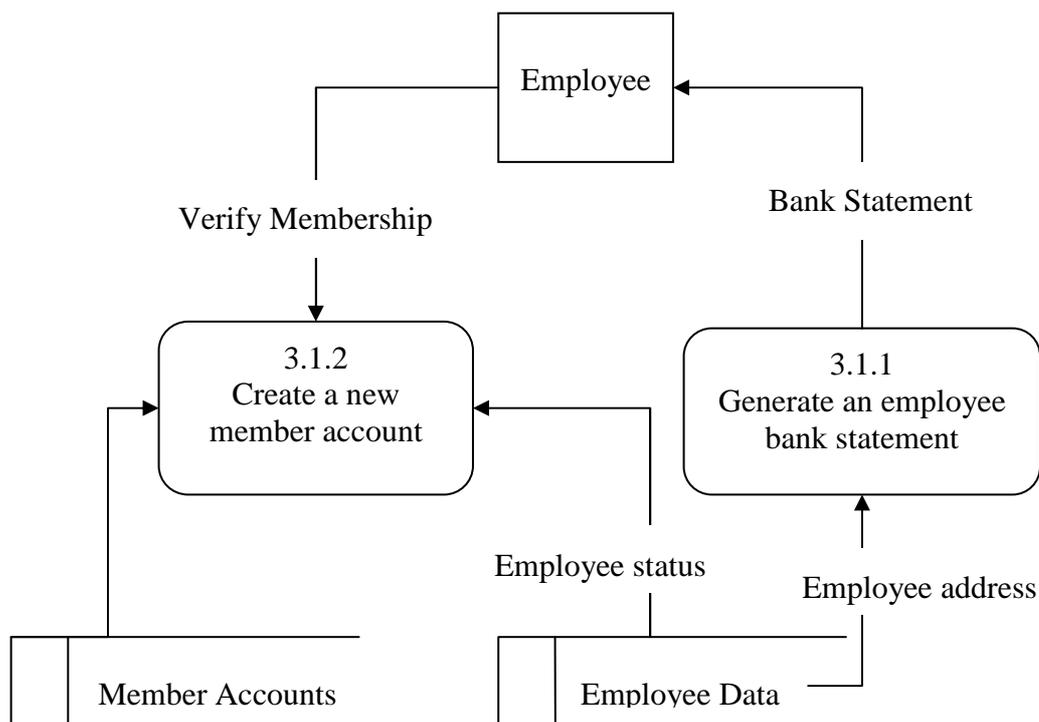
35) Consider the following rules.

- (i) All processes must have at least one data flow in and one data flow out.
- (ii) All processes should modify the incoming data, producing new forms of outgoing data.
- (iii) Each data store must be involved with at least one data flow.
- (iv) Each external entity must be involved with at least one data flow.
- (v) A data flow must be attached to at least one process.

Which of the above rule(s) should be considered while drawing a data flow diagram?

- (a) (i) , (ii) and (iv) Only
- (b) (i) , (iii), (iv) and (v) Only
- (c) (iv) and (v) Only
- (d) (i) , (ii) and (v) Only
- (e) All

Consider the following data flow diagram and answer the questions 36 – 38.



36) Identify the mistake(s) done while drawing the above data flow diagram.

- |  |
|--|
| (a) 'Create a new member account' has only inputs but no outputs.                            |
| (b) 'Employee Data' and 'Member Accounts' have only outputs but no inputs.                   |
| (c) In 'Generate an employee bank statement', inputs are insufficient to produce the output. |
| (d) Data flow between 'Member Accounts' and 'Create a new member account' is unnamed.        |
| (e) Symbol used for data stores is wrong.  |

37) Consider the following statements.

- (i) Data cannot flow from 'Employee' to 'Create a new member account'
- (ii) 'Generate an employee bank statement' is not a valid name for such an element
- (iii) 'Employee Data' represents a database.

Which of the following is / are correct regarding the above data flow diagram and the statements?

- |                       |                         |                |
|-----------------------|-------------------------|----------------|
| (a) Only (i)          | (b) Only (ii)           | (c) Only (iii) |
| (d) Only (i) and (ii) | (e) Only (ii) and (iii) |                |

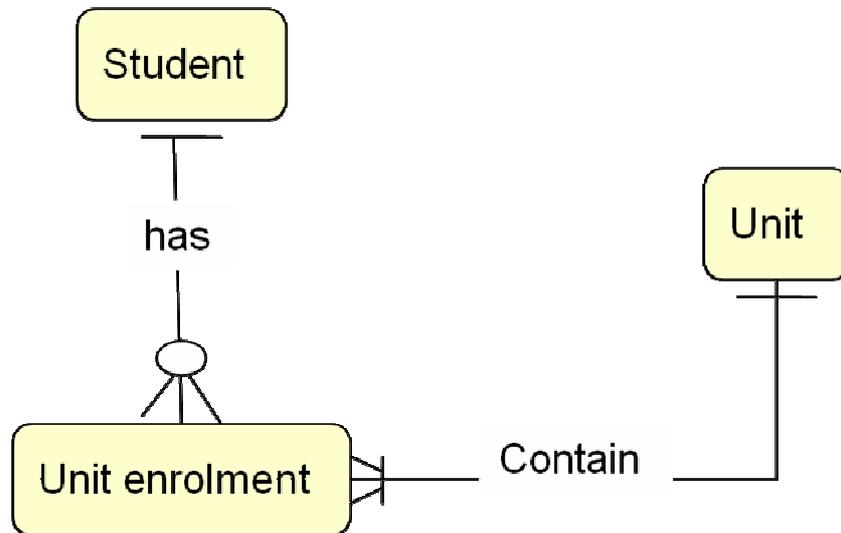
38) The blank space in the following sentence has to be filled. What is the best way of doing so?  
..... is / are example(s) for valid data flow names.

- |                       |                            |                     |
|-----------------------|----------------------------|---------------------|
| (a) Verify Membership | (b) Bank Statement         | (c) Employee Status |
| (d) Employee Address  | (e) Membership Application |                     |

39) Identify the correct statements related to Flow charts and Data Flow diagrams.

- |   |
|---|
| (a) Processes on a data flow diagram can operate in parallel while processes on flow charts can execute only one at a time.         |
| (b) A data flow diagram does not include any looping and branching.   |
| (c) A data flow diagram shows the sequence of processes in an algorithm while flow charts show the flow of data through the system. |
| (d) A flow chart shows the processes which have dramatically different timing.  |
| (e) A single DFD can include processes which happen on demand.  |

40) Consider the following diagram.



Which of the following statement(s) is / are true regarding the above Diagram?

- (a) Above is an example for an Entity relationship diagram
- (b) A student has more than one unit enrollments
- (c) A unit enrollment is for one and only one student
- (d) A unit contains one or more unit enrolments
- (e) There exists a recursive relationship between unit enrolment and Student

41) Least expensive time to deal with errors is / are

- (a) after the implementation phase.
- (b) during installation.
- (c) Early in design phase.
- (d) while the system is operating.
- (e) half way through the implementation phase.

42) A design specification document should contain

- (a) Physical and performance characteristics of all computer equipments needed.
- (b) PERT and Gantt Charts.
- (c) Entity Relationship diagrams.
- (d) Feasibility study report
- (e) Maintenance cost.

43) Which of the following is/are correct regarding stakeholders of an information system?

- (a) System Owners tend to be interested in details such as system cost, and benefits and set the vision and priorities for the system.
- (b) Each stakeholder group of a system will have different perspectives of the same system.
- (c) A Remote User of an information system is a user whose location is constantly changing but who requires access to information systems from any location.
- (d) System Analysts facilitate the development of information systems through interaction with the other stakeholders.
- (e) A System Builder is a technical specialist who constructs information systems and components based on the design specifications generated by the System Designers.

44) Each of the blanks labelled **A – E** of the sentences given below has to be filled with the most appropriate phrase selected from the following labelled (i) – (v).

- (i) Management Information Systems
- (ii) Executive Information Systems
- (iii) Transaction Processing Systems
- (iv) Decision Support Systems
- (v) Expert Systems

Information systems can be classified according to the functions they serve.

.....**A**..... process business transactions such as orders, time cards, payments and reservations.

.....**B**..... use the transaction data to produce information needed by managers to run the business.

.....**C**..... help various decision makers to identify and choose between options or decisions.

.....**D**..... are tailored to the unique information needs of executives who plan for the business and access performance against those plans.

.....**E**..... capture and reproduce the knowledge of an expert problem solver or decision maker and them simulate the “thinking” of that expert.

- (a) A – (iii) B – (iv) C – (i) D – (v) E – (ii)
- (b) A – (iv) B – (v) C – (ii) D – (i) E – (iii)
- (c) A – (ii) B – (v) C – (iii) D – (iv) E – (i)
- (d) A – (iii) B – (i) C – (iv) D – (ii) E – (v)
- (e) A – (iv) B – (v) C – (iii) D – (i) E – (ii)

45) What are the types of Distributed Systems Architecture?

- (a) File server architecture
- (b) Centralized architecture
- (c) Client/server architecture
- (d) Internet-based architecture
- (e) Terminal Emulation

46) Which of the following is/are correct regarding the Client/server architecture?

- (a) Client/server system is a distributed computing solution in which the presentation, presentation logic, application logic, data manipulation and data layers are distributed between client PCs and one or more servers.
- (b) Client/server system is a multi-tiered solution in which the presentation and presentation logic layers are implemented in client-side Web browsers using content downloaded from a Web Server.
- (c) Examples of client/server-capable operating systems include UNIX, Microsoft Windows and Linux.
- (d) An application server hosts application logic and services for an information system.
- (e) An application server must communicate on the front end with the clients (for presentation) and on the back end with database servers for data access and update.

47) Consider the following underlying principles for Systems Development.

- (i) Information Systems should never be considered as Capital Investments
- (ii) Cost-benefit analysis should be performed throughout the system development process.
- (iii) The Analyst should adjust the estimated cost and schedule if the project scope is going to be increased.
- (iv) It is better to cancel an unfeasible project than to continue with a project only because of the investment already made.

Which of the above statement(s) is/are correct?

- (a) Only (ii)
- (b) Only (iii)
- (c) Only (ii) and (iii)
- (d) Only (ii), (iii) and (iv)
- (e) All

48) Which of the following are the important qualities of an identified system requirement?

- (i) Consistent
- (ii) Complete
- (iii) Feasible
- (iv) Traceable
- (v) Verifiable

- (a) Only (ii) and (iii)
- (b) Only (ii), (iii) and (iv)
- (c) Only (i), (ii), (iii) and (iv)
- (d) Only (i), (ii), (iii) and (v)
- (e) All

49) Which of the following is/are correct regarding Systems Design?

- (a) Modern Structured Design is a process oriented technique for breaking up a large program into a hierarchy of modules.
- (b) Rapid Application Development is a merger of various structured techniques with Prototyping techniques and Joint Application Development techniques to accelerate systems development.
- (c) Physical Data Flow Diagrams are drawn during this phase to communicate the technical implementation characteristics of an information system.
- (d) Object Oriented Design is a design strategy that follows up Structured Systems Analysis Design to refine object requirement definitions and to define new design specific objects.
- (e) Systems design for solutions which involve acquiring a commercial off-the-shelf software product include a procurement and decision analysis phase that addresses software and services.

- 50) Each logical process must be implemented as one or more physical processes as some logical processes must be split into multiple physical processes for one or more of the following reasons.
- (i) To split the process into a portion to be performed by people and a portion to be performed by the computer
  - (ii) To split the process into a portion to be implemented with one technology and a portion to be implemented with a different technology
  - (iii) To show multiple but different implantations of the same logical process.
  - (iv) To add processes which are necessary to handle exceptions or to implement security requirements and audit trails

Which of the above reasons is/are correct?

- (a) Only (i) and (ii)
- (b) Only (i) and (iii)
- (c) Only (i) , (ii) and (iii)
- (d) Only (ii), (iii) and (iv)
- (e) All

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