Accounting Information Systems, 11e (Bodnar/Hopwood)
Chapter 2   Systems Techniques and Documentation

1) Tools used in the analysis, design, and documentation of system and subsystem relationships are known as system techniques.
Answer: TRUE
Diff: 2
Learning Obj.: 1

2) The interim audit requires some type of substantive testing.
Answer: FALSE
Diff: 1
Learning Obj.: 1

3) Substantive testing involves direct verification of financial statement figures.
Answer: TRUE
Diff: 2
Learning Obj.: 1

4) When evaluating internal controls, auditors are usually not concerned with the flow of processing and distribution of documents within an application system.
Answer: FALSE
Diff: 2
Learning Obj.: 1, 2

5) Auditors undertake compliance testing to determine the degree of reliance of existing internal controls.
Answer: TRUE
Diff: 2
Learning Obj.: 1

6) It is desirable for auditors to have a basic understanding of systems techniques.
Answer: TRUE
Diff: 1
Learning Obj.: 1

7) The usual focus of an audit is to review an existing system rather than design a new system.
Answer: TRUE
Diff: 2
Learning Obj.: 1

8) Analytic and system flowcharts are seldom found in the working papers of auditors.
Answer: FALSE
Diff: 1
Learning Obj.: 1

9) A systems development project generally consists of three main phases.
Answer: TRUE
Diff: 2
Learning Obj.: 1

10) Systems techniques assist the analyst in the collection and organization of facts.
Answer: TRUE
Diff: 2
Learning Obj.: 1

11) Systems analysis involves formulating a blueprint for a completed system.
Answer: FALSE
Diff: 2
Learning Obj.: 1

12) Auditors primarily use IPO and HIPO charts.
Answer: FALSE
Diff: 1
Learning Obj.: 1

13) Section 404 of the Sarbanes-Oxley Act requires that annual filings of publicly traded
companies include a statement of management's responsibility for establishing and maintaining
adequate internal control as well as an assessment of the effectiveness of that internal control.
Answer: TRUE
Diff: 1
Learning Obj.: 1

14) Section 404 of the Sarbanes-Oxley Act requires that monthly filings of publicly traded
companies include a statement of management's responsibility for establishing and maintaining
adequate internal control as well as an assessment of the effectiveness of that internal control.
Answer: FALSE
Diff: 1
Learning Obj.: 1

15) Manual input/output and connector symbols are among the basic flowchart symbols.
Answer: FALSE
Diff: 2
Learning Obj.: 2

16) In the United States, the AICPA is responsible for establishing standard flowchart symbols.
Answer: FALSE
Diff: 1
Learning Obj.: 2

17) The four basic symbols corresponding to basic data processing functions are the input/output symbol, the process symbol, the flowline symbol, and the annotation or comment symbol.
Answer: TRUE
Diff: 2
Learning Obj.: 2

18) If no special symbol exists to depict a function, verbal descriptions are used in the flowchart.
Answer: FALSE
Diff: 3
Learning Obj.: 2

19) The decision symbol represents a named procedure consisting of one or more operations or program steps that are not specified within the set of flowcharts.
Answer: FALSE
Diff: 3
Learning Obj.: 2

20) The decision symbol represents a decision or switching type of operation that determines which of a number of alternative paths is to be followed.
Answer: TRUE
Diff: 3
Learning Obj.: 2

21) The normal flow direction of a flowchart is from left to right and top to bottom.
Answer: TRUE
Diff: 1
Learning Obj.: 2

22) The triangle is a specialized symbol representing a decision process.
Answer: FALSE
Diff: 3
Learning Obj.: 2

23) When the flow is bidirectional, it can only be shown by double lines.
Answer: FALSE
Diff: 3
Learning Obj.: 2

24) An IPO chart provides a narrative description of the inputs needed to generate desired system outputs.
Answer: TRUE
Diff: 2
Learning Obj.: 4

25) A HIPO chart contains two segments: a hierarchy chart and one or more IPO charts.
Answer: TRUE
Diff: 1
Learning Obj.: 4

26) An IPO chart can provide much detail concerning the processing function.
Answer: FALSE
Diff: 1
Learning Obj.: 4

27) HIPO structures a "bottom-up" strategy in structured systems analysis and design.
Answer: FALSE
Diff: 2
Learning Obj.: 4

28) A program flowchart is also known as a block flowchart.
Answer: TRUE
Diff: 1
Learning Obj.: 2

29) A systems flowchart is more detailed concerning individual processing functions than a program flowchart.
Answer: FALSE
Diff: 1
Learning Obj.: 2

30) The intent of using DFDs is to clearly separate the logical process of systems analysis from the physical process of systems design.
Answer: TRUE
Diff: 2
Learning Obj.: 2

31) A DFD may consist of either DFD or ANSI flowchart symbols.
Answer: FALSE
Diff: 2
Learning Obj.: 2

32) A document flowchart is similar to a systems flowchart.
Answer: FALSE
Diff: 3
Learning Obj.: 2

33) The forms distribution chart is closely related to the document flowchart.
Answer: TRUE
Diff: 1
Learning Obj.: 2

34) The sandwich rule states that every process symbol should be placed between an input and output symbol.
Answer: TRUE
Diff: 2
Learning Obj.: 2

35) UML is a United States standard, not yet supported by the International Standards Organization.
Answer: FALSE
Diff: 1
Learning Obj.: 4

36) UML is a collection of modeling tools used to model the specifics of software development including functional equivalents of data flow diagrams, document flowcharting, and analytical flowcharting.
Answer: TRUE
Diff: 2
Learning Obj.: 4

37) In UML, use case diagrams model the flow of activities involved in a single process.
Answer: FALSE
Diff: 2
Learning Obj.: 4

38) The business process diagram focuses on the sequence of activities in a business process.
Answer: TRUE
Diff: 2
Learning Obj.: 4

39) BPMN basic symbols include the task, sequence flow, gateway, and event symbols.
Answer: TRUE
Diff: 2
Learning Obj.: 4

40) BPMN basic symbols include input/output, process, flowline, and annotation symbols.
Answer: FALSE
Diff: 2
Learning Obj.: 4

41) All BPDs contain at least two pools.
Answer: FALSE
Diff: 2
Learning Obj.: 4

42) Preparing flowcharts can be viewed as more _____ than _____.
Answer: art; science
Diff: 2
Learning Obj.: 3

43) _____ _____ are a fact-gathering technique where persons provide written answers to general, rather than specific, questions.
Answer: Open-ended questionnaires
Diff: 2
Learning Obj.: 4

44) _____ _____ is based on the premise that quantitative measurement is essential to the design of efficient procedures.
Answer: Work measurement
Diff: 2
Learning Obj.: 4

45) The formula for capacity utilization can be expressed as Total time _____ / Total _____ time.
Answer: available; task
Diff: 2
Learning Obj.: 4

46) After operational characteristics of a system have been identified and selected through some form of work measurement, a work _____ _____ must be undertaken to assign specific tasks to employees.
Answer: distribution analysis
Diff: 2
Learning Obj.: 4

47) The basic _____ symbol represents the making available of data for processing or the recording of processed information.
Answer: input/output
Diff: 1
Learning Obj.: 2

48) A(n) _____ flowchart identifies the overall flow of operations in a system, and focuses on storage media and processing functions.
Answer: systems
Diff: 1
Learning Obj.: 2

49) _____ flowcharts are organized into columns or groups representing processing functions performed by different entities.
Answer: Analytic
Document
Diff: 1
Learning Obj.: 3

50) When a flowchart covers more than one page, the continuation between pages is shown with a(n) _____ symbol.
Answer: connector
Diff: 1
Learning Obj.: 3

51) Terminator, process, data store, and data flow are the primary symbols used in the construction of _____ _____ _____ _____.
Answer: logical data flow diagrams
DFDs
Diff: 1
Learning Obj.: 4

52) The _____ is a specialized process symbol that represents a decision process in a flowchart.
Answer: diamond
Diff: 2
Learning Obj.: 3

53) A branching table depicts a decision function by means of a statement of the _____ to be made, a list of _____ that can occur, and the path to be followed for each condition.
Answer: decision; conditions
Diff: 2
Learning Obj.: 4

54) "Work" or "spread" sheets used in accounting systems are common examples of the _____ method.
Answer: matrix
Diff: 2
Learning Obj.: 4

55) _____ _____ might be used in lieu of program flowcharts to analyze and document the logic of an application system.
Answer: Decision tables
Diff: 2
Learning Obj.: 4

56) The _____ symbol is used when additional descriptions or explanations are needed to clarify a point on the flowchart.
Answer: annotation
Diff: 1
Learning Obj.: 3

57) Section _____ of the Sarbanes-Oxley Act states management's responsibility for establishing and maintaining adequate internal control and procedures for financial reporting.
Answer: 404
Diff: 1
Learning Obj.: 1

58) Unified _____ Language is an international standard supported by ISO that uses a variety of graphical techniques to depict the different aspects and views of software development projects at various levels of abstraction.
Answer: Modeling
Diff: 1
Learning Obj.: 4

59) The most basic symbols of BPMN are _____, _____, _____, and _____ symbols.
Answer: task, sequence flow, gateway, event
Diff: 3
Learning Obj.: 4

60) The acronym for the organization responsible for standardizing flowchart symbols is
A) FASB.
B) ANSI.
C) AICPA.
D) CMA.
Answer: B
Diff: 1
Learning Obj.: 2

61) Audit tests that follow compliance tests and rely on the interim audit's results are called
A) substantive tests.
B) follow-up tests.
C) internal control tests.
D) evaluation tests.
Answer: A
Diff: 1
Learning Obj.: 1

62) Which of the following is a procedure included in systems design?
A) Computer program documentation
B) Forms design
C) Training personnel
D) Document review
Answer: B
Diff: 2
Learning Obj.: 1

63) In an analytic flowchart, the symbol which could be used to indicate unclaimed payroll checks is the
A) connector symbol.
B) terminal symbol.
C) document symbol.
D) process symbol.
Answer: C
Diff: 2
Learning Obj.: 2

64) Which of the following symbols should **not** be used to specify an input/output operation?
A) Decision symbol
B) Document symbol
C) Off-line storage symbol
D) Communication link
Answer: A
Diff: 2
Learning Obj.: 2

65) In an analytic flowchart, the symbol which could be used to indicate the computation of gross pay is the
A) connector symbol.
B) terminal symbol.
C) input/output symbol.
D) process symbol.
Answer: D
Diff: 2
Learning Obj.: 3

66) In an analytic flowchart, the symbol which could be used to indicate unclaimed payroll checks is the
A) connector symbol.
B) terminal symbol.
C) document symbol.
D) process symbol.
Answer: C
Diff: 2
Learning Obj.: 3

67) In an analytic flowchart, the symbol which could be used to indicate the payroll data is the
A) connector symbol.
B) magnetic disk symbol.
C) terminator symbol.
D) decision symbol.
Answer: B
Diff: 2
Learning Obj.: 3

68) The manual input symbol could be used to represent
A) the entering of data at an on-line keyboard.
B) the entering of data using switch settings.
C) the entering of data using touch screens.
D) All of these answers are correct.
Answer: D
Diff: 2
Learning Obj.: 2

69) The off-line storage symbol could be used to represent data stored
A) on a USB thumb drive.
B) on a magnetic tape or disk.
C) in paper form.
D) on all of these named media.
Answer: D
Diff: 2
Learning Obj.: 2

70) The "hierarchy" aspect of HIPO charts refers to the fact that this technique factors a task into modules by
A) using the entity's organization chart.
B) utilizing a horizontal approach.
C) going from the general to the specific.
D) None of these answers are correct.
Answer: C
Diff: 2
Learning Obj.: 4

71) The charting technique which emphasizes a logical rather than a physical description of a system is a(n)
A) analytic flowchart.
B) forms distribution flowchart.
C) data flow diagram.
D) document flowchart.
Answer: C
Diff: 2
Learning Obj.: 2

72) In the preparation of a logical data flow diagram for a payroll system, which of the following symbols could be used to indicate the payroll data?
A) Magnetic disk symbol
B) Data store symbol
C) Terminator symbol
D) Input/output symbol
Answer: B
Diff: 2
Learning Obj.: 2

73) Instead of using the on-line storage symbol, a systems analyst wants to use an analytic flowcharting symbol that represents the medium that is used for the file. Which of the following would be the best symbol to use in place of the on-line analytic storage symbol?
A) The display symbol
B) The magnetic tape symbol
C) The document symbol
D) None of these answers are correct.
Answer: D
Diff: 3
Learning Obj.: 2

74) An internal auditor wants to flowchart a file of (hardcopy) purchase orders. Which of the following would be the best symbol to use for the file?
A) The on-line storage symbol
B) The off-line storage symbol
C) The terminal symbol
D) The auxiliary operation symbol
Answer: B
Diff: 3
Learning Obj.: 2

75) Which of the following analytic flowcharting symbols is most appropriate to represent the accounts receivable subsidiary records?
A) The basic input/output symbol
B) The basic manual operation symbol
C) The document symbol
D) None of these answers are correct.
Answer: A
Diff: 3
Learning Obj.: 2

76) In a HIPO chart of a payroll system, which of the following activities would appear higher in the chart than the other activities?
A) Calculate gross pay
B) Accumulate hours worked
C) Find correct pay rate
D) Look up authorized deductions
Answer: A
Diff: 3
Learning Obj.: 4

77) Which of the following would **not** appear in a HIPO chart of a payroll system?
A) Data preparation
B) Calculate gross pay
C) Payroll master file
D) Look up authorized deductions
Answer: C
Diff: 3
Learning Obj.: 4

78) In an IPO chart of a payroll system, the payroll master file would
A) appear as an input.
B) appear as an output.
C) Answers A and B are correct.
D) not be represented in the chart
Answer: C
Diff: 3
Learning Obj.: 4

79) In a logical data flow diagram for a payroll system, the employees would best be represented by which of the following symbols?
A) The process symbol
B) The terminator symbol
C) The data store symbol
D) The data flow symbol
Answer: B
Diff: 3
Learning Obj.: 4

80) In a logical data flow diagram for a payroll system, the employees' time cards would best be represented by which of the following symbols?
A) The terminator symbol
B) The process symbol
C) The data store symbol
D) The data flow symbol
Answer: A
Diff: 3
Learning Obj.: 4

81) Which of the following systems development activities may require the use of systems techniques?
A) Systems analysis
B) Systems design
C) Systems implementation
D) All of these answers are correct.
Answer: D
Diff: 1
Learning Obj.: 4

82) Which of the following is **not** one of the basic symbols used in analytic flowcharting?
A) Input/output
B) Manual input
C) Flowline
D) Annotation
Answer: B
Diff: 1
Learning Obj.: 3

83) The symbol which is used to link other symbols and indicate the sequence of information and operations is the
A) flowline symbol.
B) annotation symbol.
C) input/output symbol.
D) process symbol.
Answer: A
Diff: 1
Learning Obj.: 2

84) Which of the following is **not** a specialized input/output symbol that represents a particular medium?
A) The magnetic tape symbol
B) The magnetic disk symbol
C) The connector symbol
D) The document symbol
Answer: C
Diff: 1
Learning Obj.: 2

85) Which of the following is **not** a specialized process symbol?
A) The connector symbol
B) The manual operation symbol
C) The decision symbol
D) The preparation symbol
Answer: A
Diff: 1
Learning Obj.: 2

86) Which of the following flow directions is(are) assumed in a flowchart?
A) From top to bottom
B) From left to right
C) Neither answer A nor B is correct.
D) Answers A and B are both correct.
Answer: D
Diff: 1
Learning Obj.: 2

87) The technique that is characterized by a series of charts that represent the system at increasing levels of detail is called
A) analytic flowcharting.
B) HIPO.
C) IPO.
D) logical data flow diagram.
Answer: B
Diff: 1
Learning Obj.: 4

88) Which of the following is **not** a basic symbol used in logical data flow diagrams?
A) Terminator
B) Data store
C) Data flow
D) Manual input
Answer: D
Diff: 1
Learning Obj.: 4

89) Which of the following would **not** be appropriate to head a column in an analytic flowchart?
A) Remittance advice
B) Production department
C) Purchasing department
D) Cashier
Answer: A
Diff: 1
Learning Obj.: 3

90) Which of the following would generally **not** be appropriate in preparing a document flowchart?
A) Columnar headings
B) Flowlines
C) Process symbols
D) Connector symbols
Answer: C
Diff: 1
Learning Obj.: 2

91) A type of resource utilization technique which is used to rationally assign work activities to particular individuals, departments, or other entities is
A) work measurement.
B) work distribution analysis.
C) branching table.
D) decision table.
Answer: B
Diff: 1
Learning Obj.: 4

92) Which of the following is an example of narrative techniques?
A) In-depth interviews
B) Open-ended questionnaires
C) Document reviews
D) All of these answers are correct.
Answer: D
Diff: 1
Learning Obj.: 4

93) The decision analysis techniques that are similar because both are tabular representations of decision-making processes are
A) work measurement and work distribution analysis.
B) work distribution and decision tables.
C) branching and decision tables.
D) None of these answers are correct.
Answer: C
Diff: 1
Learning Obj.: 4

94) Systems techniques may be used to
A) assist in designing computer programs.
B) give an overall picture of transaction processing in the organization.
C) assist a systems analyst in organizing facts about a system.
D) All of these answers are correct.
Answer: D
Diff: 1
Learning Obj.: 4

95) Which of the following is **not** true with respect to the use of systems techniques by auditors?
A) Systems techniques assist the auditor in evaluating a client's internal control.
B) Systems techniques replace audit working papers.
C) Auditors rely on systems techniques to assist with compliance testing.
D) Auditors use systems techniques as part of their documentation for their audit working papers.
Answer: B
Diff: 2
Learning Obj.: 1

96) Systems techniques may be used by
A) internal auditors.
B) external auditors.
C) systems personnel.
D) All of these answers are correct.
Answer: D
Diff: 1
Learning Obj.: 1

97) The component of an audit whose objective is to establish the degree of reliance that can be placed on the organization's internal control structure is called
A) the interim audit.
B) the financial statement audit.
C) work paper verification.
D) the internal audit.
Answer: A
Diff: 1
Learning Obj.: 1

98) To confirm the existence and assess the effectiveness of an organization's internal controls, auditors
A) create systems techniques.
B) perform substantive testing.
C) perform compliance testing.
D) create HIPO and IPO charts.
Answer: C
Diff: 2
Learning Obj.: 1

99) The flowchart which is most similar to a document flowchart is the
A) IPO chart.
B) DFD.
C) analytic flowchart.
D) HIPO chart.
Answer: C
Diff: 2
Learning Obj.: 2

100) The first step in preparing a flowchart is to
A) select the symbols to be used.
B) analyze the system.
C) sketch a rough draft of the system.
D) consult the work papers from previous audits.
Answer: B
Diff: 2
Learning Obj.: 3

101) How many general guidelines should be followed when preparing a flowchart?
A) Three
B) Five
C) Seven
D) Four
Answer: B
Diff: 2
Learning Obj.: 3

102) The goal of work measurement is to create a benchmark or yardstick to use in measuring the efficiency of an operation. The first step taken in work measurement is to
A) identify the tasks.
B) analyze requirements.
C) examine IPO and HIPO documentation.
D) obtain time estimates for performing the tasks.
Answer: A
Diff: 2
Learning Obj.: 4

103) The formula used to compute total task time for work measurement purposes is
A) (average time / unit + idle time / unit) × average volume.
B) total time available / total task time.
C) (average volume / unit + average time / unit) × average volume.
D) total task time / total time available.
Answer: A
Diff: 2
Learning Obj.: 4

104) A branching table may be used to
A) validate the degree of reliance placed on an organization's internal controls.
B) document the decision logic in a computer program.
C) document work measurement analysis.
D) validate the computing speed of a program.
Answer: B
Diff: 2
Learning Obj.: 4

105) A decision table format generally uses a(n)
A) "OR" premise.
B) "SOME-MANY" premise.
C) "IF-THEN" premise.
D) "ALL-NONE" premise.
Answer: C
Diff: 2
Learning Obj.: 4

106) In an application control matrix, row entries are
A) controls.
B) processing actions.
C) either controls or processing actions.
D) neither controls nor processing actions.
Answer: A
Diff: 2
Learning Obj.: 4

107) A block flowchart is also known as a(n)
A) data flow diagram.
B) HIPO chart.
C) analytic flowchart.
D) program flowchart.
Answer: D
Diff: 1
Learning Obj.: 2

108) A tabular technique used to represent a decision function in a flowchart is known as a
A) block flowchart.
B) logical data flow diagram.
C) decision table.
D) branching table.
Answer: D
Diff: 2
Learning Obj.: 4

109) The display symbol in a flowchart represents information displayed for human use using a device such as a
A) video monitor.
B) plotter.
C) console printer.
D) All of these answers are correct.
Answer: D
Diff: 1
Learning Obj.: 2

110) Flowchart symbols that represent the I/O function and the medium upon which the information is recorded, and/or the manner of handling such information, are known as
A) basic input/output symbols.
B) specialized input/output symbols.
C) LDFD symbols.
D) HIPO hierarchy chart modules.
Answer: B
Diff: 1
Learning Obj.: 2

111) The principle behind the "sandwich rule" states that
A) flowcharts should leave as little white space as possible on each page to minimize waste.
B) annotations should be placed between each key input and output symbol.
C) every process symbol should be placed between an input and output symbol.
D) flowcharts should use as many different types of symbols as possible to thoroughly document basic I/O functions.
Answer: C
Diff: 1
Learning Obj.: 2

112) Connector symbols may be used in place of
A) comment symbols.
B) long flowlines.
C) data flow symbols.
D) communications links.
Answer: B
Diff: 1
Learning Obj.: 2

113) The on-line storage symbol would be used to represent
A) a deck of cards.
B) a magnetic tape.
C) an optical disk.
D) a punched tape.
Answer: C
Diff: 1
Learning Obj.: 2

114) An annotation or comment may be represented in a flowchart using a
A) brace.
B) flowline.
C) square.
D) diamond.
Answer: A
Diff: 1
Learning Obj.: 2

115) Which part of the Sarbanes-Oxley Act requires annual filings of publicly traded companies to include a statement of management's responsibility for establishing and maintaining an adequate internal control structure and procedures for financial reporting?
A) ISO 404
B) ANSI X3.5
C) Section 404
D) Section X3.5
Answer: C
Diff: 1
Learning Obj.: 1

116) UML is a(n) _____ standard.
A) United States
B) international
C) ANSI
D) AICPA
Answer: B
Diff: 1
Learning Obj.: 2

117) UML includes techniques that are the functional equivalents of
A) data flow diagrams.
B) document flowcharting.
C) analytical flowcharting.
D) All of the above are included in the UML standard.
Answer: D
Diff: 1
Learning Obj.: 2

118) UML version 2.4 defines _____ types of diagrams, divided into two categories.
A) two
B) five
C) ten
D) more than a dozen
Answer: D
Diff: 1
Learning Obj.: 2

119) The two categories of diagrams under the UML version 2.4 include _____ diagrams.
A) structure and iteration
B) behavior and iteration
C) structure and behavior
D) form and interaction
Answer: C
Diff: 2
Learning Obj.: 2

120) A graphical representation focusing on the sequence of activities in a business process is a(n)
A) analytical flowchart.
B) business process diagram.
C) process flowchart.
D) data flow diagram.
Answer: B
Diff: 2
Learning Obj.: 3

121) The basic symbols in a BPMN include
A) task, sequence flow, gateway, and event symbols.
B) process, flowline, input/output, and annotation.
C) task, flowline, event, and comments.
D) input/output, sequence flow, entities, and storage.
Answer: A
Diff: 2
Learning Obj.: 3

122) Presented below is a list of terms relating to accounting information systems, followed by definitions of those terms.

Required: Match the letter next to each definition with the appropriate term. Each answer will be used only once.

_____ 1. On-line storage symbol
_____ 2. Off-page connector symbol
_____ 3. Manual input symbol
_____ 4. Basic process symbol
_____ 5. Decision symbol
_____ 6. Off-line storage symbol
_____ 7. Terminal symbol
_____ 8. Basic input/output symbol
_____ 9. Connector symbol
_____ 10. Manual process symbol

A. To indicate that a factory employee uses a workstation on the factory floor to key in a code that means that the production run has been completed
B. To indicate that the treasurer will sign the payroll checks
C. To indicate that a check is being mailed outside the company
D. To indicate that a document is being sent to another department
E. To indicate that the bank loan officer approves or does not approve of an increase in the customer's line of credit
F. To indicate that computer software will calculate the employees' gross pay deductions, and net pay
G. To indicate a file of paper documents
H. To indicate files stored on the hard disk
I. To indicate the general ledger file
J. To indicate the beginning or the end of the flowchart
Answer: 1. H, 2. C, 3. A, 4. F, 5. E, 6. G, 7. J, 8. I, 9. D, 10. B
Diff: 2
Learning Obj.: 2

123) Presented below is a list of terms relating to accounting information systems, followed by definitions of those terms.

Required: Match the letter next to each definition with the appropriate term. Each answer will be used only once.

_____ 1. Systems techniques
_____ 2. Work measurement
_____ 3. Decision table
_____ 4. HIPO chart
_____ 5. Data flow diagram
_____ 6. Program flowchart
_____ 7. Systems development project
_____ 8. Compliance testing
_____ 9. Substantive testing
_____ 10. Sandwich rule
_____ 11. Business process diagram
_____ 12. Unified modeling language
_____ 13. Business process modeling notation
_____ 14. Computer-aided software engineering
_____ 15. Analytic flowchart

A. Consists of systems analysis, design, and implementation
B. Charting technique used to document the logical design of a system
C. Every process symbol should be placed between an input symbol and an output symbol
D. Techniques used to measure activities in a production framework
E. Tools used in the analysis, design, and documentation of systems
F. Confirms the existence and assesses the effectiveness of internal controls
G. Supplements or replaces flowcharts when there are a large number of alternative decision paths
H. Indicates detailed processing functions
I. International standard predominately a software systems development technology
J. Uses pools and lanes in swimlanes to organize activities
K. Process of using computer software that supports development and maintenance
L. Charts the flow of documents and processing between different entities, represented by columns
M. Graphical representation of the sequence of activities of business processes
N. A collection of IPO charts
O. The direct verification of financial statement figures
Answer: 1. E, 2. D, 3. G, 4. N, 5. B, 6. H, 7. A, 8. F, 9. O, 10. C, 11. M, 12. I, 13. J, 14. K, 15. L
Diff: 2
Learning Obj.: 4

124) The following data is related to the time required to post checks drawn by the Last National Bank's depositors:

Number of checks posted	795
Total elapsed minutes	520
Rest period minutes	12
Interruption minutes	15

Required:
a. Calculate the standard posting time per check.
b. Calculate the combined rest and interruption time as a percentage of the standard time per check.
Answer:
a. Standard time/check $= (520 + 12 + 15)/795$
$= 0.688$ min./check
b. Rest/interruption per check $= (12 + 15)/795$
$= 0.033962$ min./check (rounded)

Rest/interruption percentage $= 0.033962/0.688$
$= 0.049$ (rounded) $\times 100$
$= 4.9\%$
Diff: 3
Learning Obj.: 4

125) The following data is related to the time required to post Kriptonite Corporation's daily general ledger entries:

Number of GL entries posted	850
Total elapsed minutes	340
Rest period minutes	6
Interruption minutes	6.5

Required:
a. Calculate the standard posting time per GL entry.
b. Calculate the combined rest and interruption time as a percentage of the standard time per GL entry.
Answer:
a. Standard time/entry $= (340 + 6 + 6.5)/860$
$= 0.40988$ min./entry (rounded)
b. Rest/interruption per entry $= (6 + 6.5)/860$
$= 0.014535$ min./entry (rounded)

Rest/interruption percentage $= 0.014535/0.40988$
$= 0.035461$ (rounded) $\times 100$
$= 3.55\%$
Diff: 3
Learning Obj.: 4

126) Complete the limited-entry decision table below to document credit card purchase authorization procedures for The Whodunit Bookshop.

A purchase under $75 is approved automatically. Purchases between $75 and$500 (inclusive) are given an authorization number. For purchases over $500, a hold is placed on the customer's account as well as an authorization number being assigned.

	Rules:		
Condition/Action	1	2	3
Purchase less than $75			
Purchase between $75 and $500			
Purchase over $500			
Approve with no action			
Assign authorization number			
Place hold on account			

Answer:

	Rules:		
Condition/Action	1	2	3
Purchase less than $75	Y	N	N
Purchase between $75 and $500		Y	N
Purchase over $500			Y
Approve with no action	x		
Assign authorization number		x	
Place hold on account			x

Diff: 2
Learning Obj.: 4

127) The approval policies for sales on account at Barton Brothers Lumber Company are given below:

A sale under $1,000 is automatically approved for a builder or contractor. Sales between $1,000 and $5,000 (inclusive) require the approval of the credit department. Sales over $5,000 require the approval of the credit department and the vice president of the company.

Required: Create a limited-entry decision table to document the sales department approval policies for Barton Brothers Lumber Company.
Answer:

		Rules:	
Condition/Action	1	2	3
Sales less than $1,000	Y	N	N
Sales between $1,000 and $5,000		Y	N
Sales over $5,000			Y
Automatic approval	x		
Approval from credit dept.		x	
Approval from credit dept. & V.P.		x	x

Diff: 3
Learning Obj.: 4

128) Name the four basic symbols used in analytic flowcharting, and briefly define them.
Answer: Suggested answer:

Basic input/output symbol: Represents the making available of data for processing or the recording of processed information

Basic process symbol: Represents any kind of processing function

Flowline symbol: Used to link other symbols; indicates the sequence of available information and operation

Annotation symbol: Represents the addition of descriptive comments or explanations
Diff: 2
Learning Obj.: 2

129) Name the four basic symbols used in data flow diagrams, and briefly define them.
Answer: Suggested answer:

Terminator	Represents sources and destinations of data
Process	Represents the task or function being done
Data store	Represents a repository (store, source) of data
Data flow	Represents a communication channel

Diff: 2
Learning Obj.: 2

130) Discuss one major characteristic of logical data flow diagrams which may be an advantage over analytic flowcharts in some situations.
Answer: Suggested answer:

Logical data flow diagrams emphasize logical design rather than physical design. Some symbols used in analytic flowcharts emphasize data processing operations or physical media for inputs, storage, and outputs. Advocates of logical data flow design believe that such symbols confuse logical design with physical design.

Some logical data flow diagrams emphasize processes rather than physical characteristics and are more suited to structured systems analysis.
Diff: 2
Learning Obj.: 4

131) One broad type of resource utilization analysis is work measurement.

a. What fundamental assumption underlies work measurement?
b. What is an essential ingredient for an organization to be able to perform work measurement?
Answer: Suggested answer:

a. The fundamental assumption is that quantitative measurement is essential to designing efficient work procedures.

b. The essential ingredient is the existence of a standard, norm, or yardstick by which the procedure can be measured.
Diff: 2
Learning Obj.: 4

132) Describe the purpose and nature of the following types of flowcharts:
• Systems
• Program or block
• Analytic
• Document
• Forms distribution
Answer: Suggested answer:

A systems flowchart identifies an organization's overall data flows. It shows the origination of inputs, processing (manual or automated), and the disposition of outputs. It emphasizes storage media and general processing rather than a detailed view of individual processes.

A program flowchart is a more detailed version of a systems flowchart. Each process in the systems flowchart is further detailed in the program flowchart. Program flowcharts are also known as block flowcharts.

Analytic flowcharts highlight the flow of documents in significant processes, emphasizing processing tasks that apply controls. Symbols are connected with flowlines, as in the systems flowchart. The flowchart is separated into columns representing entities.

A document flowchart identifies the point of origination, distribution, and ultimate disposition of each document in the system. It does not emphasize processes, and is arranged in columns by entity as is the analytic flowchart. However, the primary (and many times only) symbol used is the document symbol.

The forms distribution chart emphasizes the distribution of multiple-copy forms in an organization, and it can be used to analyze unauthorized distribution, unnecessary copies, or unnecessary filing of copies. It is arranged in columns, with the form's originating department to the left and the departments receiving copies in columns to the right.
Diff: 2
Learning Obj.: 3

133) Discuss the main activities in each systems development phase: systems analysis, systems design, and systems implementation. Include two systems techniques in each phase.
Answer: Suggested answer:

Systems analysis includes activities to help formulate and evaluate solutions to systems problems. The systems analyst must first observe the system as it currently functions, and uses depth interviews, questionnaires, and documents reviews. The analyst organizes facts with work measurement analysis and work distribution analysis. To understand information flow, the analyst may prepare logical data flow diagrams and analytic flowcharts.

Systems design includes activities to evaluate the relative effectiveness and efficiency of design alternatives compared with the overall system requirements. Input/output analysis, systems flowcharting, and data flow diagrams help the designer understand and convey the completed system's concepts. This phase uses IPO and HIPO charts, program or block flowcharts, and branching and decision tables to document the design.

Systems implementation includes the activities to carry out the design plan and put it into operation. Systems techniques are used to document the completed system. The development team prepares program flowcharts and decision tables to help in training users and to assure that the systems design specifications are met.
Diff: 2
Learning Obj.: 4

134) How do systems techniques help in auditing?
Answer: Suggested answer:

Most auditing engagements are divided into two basic components: the interim audit and the financial statement audit. In an interim audit, auditors must first establish some degree of reliance on the organization's internal control structure. This is achieved through the use of compliance testing to confirm the existence, assess the effectiveness, and check the continuity of the operation of internal controls. The auditor must understand the internal controls that are selected for testing. Controls that are part of the organization's information system require an understanding of the technology employed in the system. To understand the technology and the basics of the information system, the auditor must make use of systems techniques used to document such a system.

Auditors must also document the results of the audit using working papers. Auditors document and analyze the content of working papers using various systems techniques. Internal control questionnaires, analytic flowcharts, and systems flowcharts help to provide excellent documentation for the evaluation of internal controls, and provide evidence of such audit evaluation in the working papers.

The financial statement audit of financial figures cannot be relied upon without the proper compliance testing and reliance upon the internal controls of the organization. Systems techniques form "building blocks" upon which the auditor can examine, assess, and place reliance upon controls used to ultimately prepare the financial statement audit.
Diff: 2
Learning Obj.: 1