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True / False

1. Most firms give their IT budgets a low priority in good economic times.
   a. True
   b. False

   ANSWER: False

2. A mission-critical system is one that is unimportant to a company's operations.
   a. True
   b. False

   ANSWER: False

3. In an information system, data is information that has been transformed into input that is valuable to users.
   a. True
   b. False

   ANSWER: False

4. Transaction processing (TP) systems are inefficient because they process a set of transaction-related commands individually rather than as a group.
   a. True
   b. False

   ANSWER: False

5. In a knowledge management system, a knowledge base consists of logical rules that identify data patterns and relationships.
   a. True
   b. False

   ANSWER: False

6. Most large companies require systems that combine transaction processing, business support, knowledge management, and user productivity features.
   a. True
   b. False

   ANSWER: True

7. Since middle managers focus on a longer time frame, they need less detailed information than top managers, but somewhat more than supervisors who oversee day-to-day operations.
   a. True
   b. False

   ANSWER: False

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8. Many companies find that a trend called empowerment, which gives employees more responsibility and accountability, improves employee motivation and increases customer satisfaction.
   a. True
   b. False

   ANSWER: True

9. Network administration includes hardware and software maintenance, support, and security.
   a. True
   b. False

   ANSWER: True

10. The responsibilities of a systems analyst at a small firm are exactly the same as those at a large corporation.
    a. True
    b. False

    ANSWER: False

Modified True / False

11. System software consists of programs that support day-to-day business functions and provide users with the information they require.

    ANSWER: False - Application

12. Joint application development (JAD) is like a compressed version of the entire development process.

    ANSWER: False - Rapid application development, Rapid application development (RAD), RAD, RAD (Rapid application development)

13. User support provides users with technical information, training, and productivity support.

    ANSWER: True

Multiple Choice

14. _____ refers to the combination of hardware, software, and services that people use to manage, communicate, and share information.
    a. Instructional technology
    b. Information technology
    c. Assistive technology
    d. Medical technology

    ANSWER: b

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15. A large concentration of servers working together is called a _____.
    a. server window
    b. server application
    c. server ranch
    d. server farm

    ANSWER: d

16. _____ controls the flow of data, provides data security, and manages network operations.
    a. Enterprise software
    b. System software
    c. Application software
    d. Legacy software

    ANSWER: b

17. Examples of company-wide applications, called _____, include order processing systems, payroll systems, and company communications networks.
    a. enterprise applications
    b. network operating systems (NOS)
    c. operating applications
    d. legacy systems

    ANSWER: a

18. When planning an information system, a company must consider how a new system will interface with older systems, which are called _____.
    a. enterprise applications
    b. network operating systems (NOS)
    c. operating applications
    d. legacy systems

    ANSWER: d

19. Internet-based commerce is called _____ and includes two main sectors: B2C (business-to-consumer) and B2B (business-to-business).
    a. electronic commerce
    b. network-oriented commerce
    c. virtual trading
    d. online trading

    ANSWER: a

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20. Which of the following is one of the main sectors of ecommerce?
    a. C2C (consumer-to-consumer)
    b. B2C (business-to-consumer)
    c. C2B (consumer-to-business)
    d. BPM (business process model)

    ANSWER: b

21. _____ enabled computer-to-computer transfer of data between companies, usually over private telecommunications networks.
    a. Electronic data interchange (EDI)
    b. Radio frequency identification (RFID)
    c. Enterprise resource planning (ERP)
    d. Object-oriented (O-O) analysis

    ANSWER: a

22. A _____ is an overview that describes a company's overall functions, processes, organization, products, services, customers, suppliers, competitors, constraints, and future direction.
    a. business matrix
    b. business profile
    c. business index
    d. business glossary

    ANSWER: b

23. A _____ graphically displays one or more business processes, such as handling an airline reservation, filling a product order, or updating a customer account.
    a. business matrix model (BMM)
    b. business process model (BPM)
    c. business indexing model (BIM)
    d. business strategic model (BSM)

    ANSWER: b

24. For complex models, analysts can choose computer-based modeling tools that use _____, which includes standard shapes and symbols to represent events, processes, workflows, and more.
    a. electronic data interchange (EDI)
    b. joint application development (JAD)
    c. business process modeling notation (BPMN)
    d. rapid application development (RAD)

    ANSWER: c

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25. Transaction processing (TP) systems _____.
    a. provide job-related information to users at all levels of a company
    b. simulate human reasoning by combining a knowledge base and inference rules that determine how the knowledge is applied
    c. process data generated by day-to-day business operations
    d. include email, voice mail, fax, video conferencing, word processing, automated calendars, database management, spreadsheets, and integrated mobile computing systems

   ANSWER: c

26. Business support systems _____.
    a. provide job-related information support to users at all levels of a company
    b. simulate human reasoning by combining a knowledge base and inference rules that determine how the knowledge is applied
    c. process data generated by day-to-day business operations
    d. include email, voice mail, fax, video conferencing, word processing, automated calendars, database management, spreadsheets, and integrated mobile computing systems

   ANSWER: a

27. _____ technology uses high-frequency radio waves to track physical objects.
    a. Redundant array of independent disks (RAID)
    b. Radio frequency identification (RFID)
    c. Enterprise resource planning (ERP)
    d. Management information system (MIS)

   ANSWER: b

28. Knowledge management systems use a large database called a(n) _____ that allows users to find information by entering keywords or questions in normal English phrases.
    a. inference engine
    b. knowledge base
    c. knowledge database management system
    d. inference manager

   ANSWER: b

29. User productivity systems _____.
    a. provide job-related information to users at all levels of a company
    b. simulate human reasoning by combining a knowledge base and inference rules that determine how the knowledge is applied
    c. process data generated by day-to-day business operations
    d. include groupware programs that enable users to share data, collaborate on projects, and work in teams

   ANSWER: d

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30. In a typical organizational model, top managers _____.
    a. develop long-range plans, called strategic plans, which define a company's overall mission and goals
    b. provide direction, necessary resources, and performance feedback to supervisors and team leaders
    c. oversee operation employees and carry out day-to-day functions, coordinating operational tasks and people
    d. include users who rely on transaction processing (TP) systems to enter and receive the data they need to perform their jobs

    ANSWER: a

31. In a typical company organizational model, middle managers _____.
    a. develop long-range plans, called strategic plans, which define the company's overall mission and goals
    b. provide direction, necessary resources, and performance feedback to supervisors and team leaders
    c. oversee operation employees and carry out day-to-day functions, coordinating operational tasks and people
    d. include users who rely on transaction processing (TP) systems to enter and receive the data they need to perform their jobs

    ANSWER: b

32. _____ is a systems development technique that produces a graphical representation of a concept or process that systems developers can analyze, test, and modify.
    a. Prototyping
    b. Rapid application development
    c. Scrum
    d. Modeling

    ANSWER: d

33. A _____ describes the information that a system must provide.
    a. process model
    b. data model
    c. business model
    d. network model

    ANSWER: c

34. _____ is a systems development technique that tests system concepts and provides an opportunity to examine input, output, and user interfaces before final decisions are made.
    a. Scrum
    b. Prototyping
    c. Modeling
    d. Rapid application development

    ANSWER: b

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35. Identify a method of developing systems that is well-suited to traditional project management tools and techniques.
    a. Object-oriented analysis
    b. Adaptive method
    c. Structured analysis
    d. Rapid application development

    ANSWER: c

36. The _____ method of developing systems produces code that is modular and reusable.
    a. object-oriented analysis
    b. adaptive
    c. structured analysis
    d. rapid application development

    ANSWER: a

37. Which of the following methods of system development stresses intense team-based effort and reflects a set of community-based values?
    a. Object-oriented analysis
    b. Agile method
    c. Structured analysis
    d. Rapid application development

    ANSWER: b

38. One of the disadvantages of _____ methods of system development is that the overall project might be subject to scope change as user requirements change.
    a. object-oriented analysis
    b. agile
    c. structured analysis
    d. rapid application development

    ANSWER: b

39. Structured analysis is a traditional systems development technique that uses a series of phases, called the _____, to plan, analyze, design, implement, and support an information system.
    a. object-oriented (O-O) analysis
    b. systems development life cycle (SDLC)
    c. transaction processing (TP) system
    d. enterprise resource planning system (ERP)

    ANSWER: b

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40. Structured analysis is called a(n) _____ technique because it focuses on processes that transform data into useful information.
    a. iterative
    b. process-centered
    c. inferred
    d. model-specific

    ANSWER: b

41. A(n) _____ shows the data that flows in and out of system processes.
    a. process model
    b. object model
    c. business model
    d. network model

    ANSWER: a

42. A(n) _____ uses various symbols and shapes to represent data flow, processing, and storage.
    a. process flow diagram
    b. object model
    c. data flow diagram
    d. network model

    ANSWER: c

43. In a(n) _____ model, the result of each phase is called a deliverable, which flows into the next phase.
    a. interactive
    b. iterative
    c. waterfall
    d. spiral

    ANSWER: c

44. The _____ usually begins with a formal request to the IT department, called a systems request, which describes problems or desired changes in an information system or a business process.
    a. systems design phase
    b. systems planning phase
    c. systems support and security phase
    d. systems analysis phase

    ANSWER: b

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45. In a systems development life cycle (SDLC) model, the purpose of the _____ is to build a logical model of the new system.
    a. systems analysis phase
    b. systems implementation phase
    c. systems design phase
    d. systems support and security phase

    ANSWER: a

46. In a systems development life cycle (SDLC) model, the purpose of the _____ is to create a physical model that will satisfy all documented requirements for the system.
    a. systems implementation phase
    b. systems planning phase
    c. systems analysis phase
    d. systems design phase

    ANSWER: d

47. During the _____ of the systems development life cycle (SDLC), a new system is constructed.
    a. systems planning phase
    b. systems support and security phase
    c. systems design phase
    d. systems implementation phase

    ANSWER: d

48. The systems implementation phase of the systems development life cycle (SDLC) includes an assessment, called a _____, to determine whether the system operates properly and if costs and benefits are within expectation.
    a. systems estimation
    b. systems verification
    c. systems validation
    d. systems evaluation

    ANSWER: d

49. During the _____ of the systems development life cycle (SDLC), the IT staff maintains, enhances, and protects the system.
    a. systems support and security phase
    b. systems implementation phase
    c. systems analysis phase
    d. systems planning phase

    ANSWER: a

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50. In object-oriented analysis, objects possess characteristics called _____.
    a. properties
    b. orientations
    c. classes
    d. inheritances

    ANSWER: d

51. In object-oriented analysis, an object is a member of a(n) _____, which is a collection of similar objects.
    a. property
    b. class
    c. message
    d. instance

    ANSWER: b

52. In object-oriented design, built-in processes called _____ can change an object's properties.
    a. methods
    b. functions
    c. attributes
    d. features

    ANSWER: a

53. Agile methods typically use a(n) _____ , which represents a series of iterations based on user feedback.
    a. incremental model
    b. extreme model
    c. spiral model
    d. evaluative model

    ANSWER: c

54. The _____ group typically provides leadership and overall guidance, but the systems themselves are developed by teams consisting of users, managers, and IT staff members.
    a. web support
    b. application development
    c. systems support
    d. database administration

    ANSWER: b

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55. _____ provides vital protection and maintenance services for system hardware and software, including enterprise computing systems, networks, transaction processing systems, and corporate IT infrastructure.
    a. User support
    b. Database administration
    c. Systems support and security
    d. Network administration

    ANSWER: c

56. A _____ answers questions, troubleshoots problems, and serves as a clearinghouse for user problems and solutions.
    a. user support specialist
    b. database administrator
    c. web support specialist
    d. network administrator

    ANSWER: a

57. _____ design and construct webpages, monitor traffic, manage hardware and software, and link web-based applications to a company's information systems.
    a. User support specialists
    b. Database administrators
    c. Web support specialists
    d. Network administrators

    ANSWER: c

58. Many large IT departments use a(n) _____ team that reviews and tests all applications and systems changes to verify specifications and software quality standards.
    a. beta testing
    b. quality assurance
    c. alpha testing
    d. acceptance verifier

    ANSWER: b

59. A(n) _____ investigates, analyzes, designs, develops, installs, evaluates, and maintains a company's information systems.
    a. application developer
    b. database administrator
    c. network administrator
    d. systems analyst

    ANSWER: d

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60. Many hardware and software companies offer _____ for IT professionals, which verifies that an individual demonstrated a certain level of knowledge and skill on a standardized test.
    a. spot identification
    b. certification
    c. education
    d. accreditation

    ANSWER: b

61. A(n) _____ is the set of beliefs, rules, traditions, values, and attitudes that define a company and influence its way of doing business.
    a. corporate culture
    b. team guideline
    c. mission statement
    d. ongoing rule-set

    ANSWER: a

Critical Thinking Questions
Case 1-1

Roark has just joined a company and in his role as a lead analyst, he will be responsible for determining which systems development method the team uses to create a new application for a major medical supplier.

62. After Roark has spent a week getting to know the members of the team, including their strengths and weaknesses, and what has worked well (and not so well) for this particular team in the past, one theme keeps recurring: the team has particularly weak communications skills. Which of the following methods is Roark *least* likely to use, given that he knows about the disadvantages of each method?
    a. Structured analysis
    b. Agile/adaptive methods
    c. Object-oriented analysis
    d. Rapid application development

    ANSWER: b

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63. It is a new day at the firm. Roark has been in place for a few weeks, strengthening the communications skills of his employees, getting them to work much better together. Now, the challenge that he faces is not an internal one; it lies with the client, which is increasingly incapable of sticking with decisions. Roark, based on his past experience with other clients like this, is afraid that the client will throw them a curveball and want to make changes late in the game —but that they also will be unwilling to absorb the costs of those changes. For this reason, which of the following methods of development will Roark eliminate?

   a. Structured analysis

   b. Agile/adaptive methods

   c. Object-oriented analysis

   d. Rapid application development

   ANSWER: a

   Critical Thinking Questions
   Case 1-2

   Maddy has been performing at a very high level at a firm, and so when two of her colleagues who are currently leading other development efforts get sick or leave the company, she is asked to step in and help manage these two other efforts.

64. When Maddy sits down at the first meeting at which the first group is gathering, she hears them discussing the feasibility study in which they are currently engaged. She knows, then, in which phase of the systems development life cycle (SDLC) this team currently is. Which phase is it?

   a. Systems analysis

   b. Systems design

   c. Systems planning

   d. Systems implementation

   ANSWER: c

65. After leaving the first meeting, Maddy goes down the hall to meet with the outgoing manager of the second team. In that meeting, he shares with her the latest draft of the systems requirement document, which is nearly complete. In which phase is the second team currently?

   a. Systems analysis

   b. Systems design

   c. Systems planning

   d. Systems implementation

   ANSWER: a

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Multiple Response

66. An example of a vertical system is a(n) _____.
    a. inventory application
    b. medical practice application
    c. payroll application
    d. database for an auto dealership

    ANSWER: b, d

67. A business process describes a specific set of _____.
    a. transactions
    b. employees
    c. events
    d. results

    ANSWER: a, c, d

68. Product-oriented firms manufacture _____.
    a. retail services
    b. routers
    c. computers
    d. microchips

    ANSWER: b, c, d

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Matching

Identify the letter of the choice that best matches the phrase or definition.

a. Management information system (MIS)

b. Modeling

c. Message

d. Spiral model

e. Enterprise resource planning (ERP)

f. Team leaders

g. Operational employees

h. Supply chain

i. Scalable design

j. Prototype

69. In many large companies, these kinds of systems provide cost-effective support for users and managers throughout the company.

   ANSWER: e

70. The name for new business support systems that produced valuable information, in addition to performing manual tasks; their primary users were managers.

   ANSWER: a

71. All companies that provide materials, services, and functions needed to provide a product to a customer.

   ANSWER: h

72. An approach that proponents believe reduces risks and speeds up software development

   ANSWER: d

73. People who oversee operational employees and carry out day-to-day functions

   ANSWER: f

74. People who rely on transaction processing (TP) systems to enter and receive data they need to perform their jobs

   ANSWER: g

75. Produces a graphical representation of a concept or process that systems developers can analyze, test, and modify

   ANSWER: b

76. Requests specific behavior or information from another object

   ANSWER: c

77. Can expand to meet new business requirements and volumes

   ANSWER: i

78. An early working version of an information system

   ANSWER: j

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Essay

79. Who is a knowledge worker, and why this kind of worker is required by successful companies?

    ANSWER: Knowledge workers include systems analysts, programmers, accountants, researchers, trainers, human resource specialists, and other professionals. Knowledge workers also use business support systems, knowledge management systems, and user productivity systems. Knowledge workers provide support for an organization's basic functions. Just as a military unit requires logistical support, a successful company needs knowledge workers to carry out its mission.

80. Discuss the pros and cons of agile methods.

    ANSWER: Pros:
    Stresses team interaction and reflects a set of community-based values.
    Frequent deliverables constantly validate the project and reduce risk.
    Cons:
    Team members need a high level of technical and communications skills. Lack of structure and documentation can introduce risk factors.
    Overall project might be subject to scope change as user requirements change.