MULTIPLE CHOICE

1. In launching a new information system, the greatest risk occurs when a company ____.
   a. begins by outlining its business models and identifying possible IT solutions
   b. tries to decide how the system will be implemented before determining what the system is
      supposed to do
   c. considers implementation options after having a clear set of objectives
   d. all of the above
   ANS: B       PTS: 1       REF: 7

2. ____ software controls the flow of data, provides data security, and manages network operations.
   a. Enterprise
   b. System
   c. Application
   d. Legacy
   ANS: B       PTS: 1       REF: 8

3. 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
   ANS: A       PTS: 1       REF: 8

4. Over 40 years ago, a concept called Moore's Law accurately predicted that computer processing power
   would double about every ____.
   a. 2 months
   b. 12 months
   c. 24 months
   d. 48 months
   ANS: C       PTS: 1       REF: 8

5. 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
   ANS: D       PTS: 1       REF: 9

6. For complex operations, analysts apply computer-based modeling tools that use a standard language
   called ____.
   a. electronic data interchange (EDI)
   b. joint application development (JAD)
   c. business process modeling notation (BPMN)
   d. rapid application development (RAD)
   ANS: C       PTS: 1       REF: 10

7. Systems analysts use a process called ____ to represent company operations and information needs.
   a. JAD
   b. Scrum
   c. RAD
   d. business process modeling
   ANS: D       PTS: 1       REF: 10
8. A business ____ is an overview that describes a company’s overall functions, processes, organization, products, services, customers, suppliers, competitors, constraints, and future direction.
   a. matrix  
   b. profile  
   c. index  
   d. glossary  
   
   ANS: B  
   PTS: 1  
   REF: 10

9. Which of the following is one of the main sectors of e-commerce?
   a. C2C  
   b. B2C  
   c. C2B  
   d. BBC  
   
   ANS: B  
   PTS: 1  
   REF: 13

10. ____ enabled computer-to-computer transfer of data between companies, usually over private telecommunications networks.
    a. EDI  
    b. ACH  
    c. TCH  
    d. O-O  
    
    ANS: A  
    PTS: 1  
    REF: 14

11. 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 e-mail, voice mail, fax, video conferencing, word processing, automated calendars, database management, spreadsheets, and high-speed Internet access  
    
    ANS: C  
    PTS: 1  
    REF: 15

12. 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 e-mail, voice mail, fax, video and Web conferencing, word processing, automated calendars, database management, spreadsheets, and high-speed Internet access  
    
    ANS: A  
    PTS: 1  
    REF: 16

13. Knowledge management systems are called expert systems because they ____.
    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 e-mail, voice mail, fax, video conferencing, word processing, automated calendars, database management, spreadsheets, and high-speed Internet access  
    
    ANS: B  
    PTS: 1  
    REF: 16

14. 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 e-mail, voice mail, fax, video and Web conferencing, word processing, automated
calendars, database management, spreadsheets, desktop publishing, presentation graphics, company intranets, and high-speed Internet access.

ANS: D   PTS: 1   REF: 17

15. In a typical company organizational model, top 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 TP systems to enter and receive the data they need to perform their jobs

ANS: A   PTS: 1   REF: 18

16. 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 TP systems to enter and receive the data they need to perform their jobs

ANS: B   PTS: 1   REF: 18

17. A ____ , or requirements model, describes the information that a system must provide.
   a. process model
   b. data model
   c. business model
   d. network model

ANS: C   PTS: 1   REF: 19

18. A(n) ____ describes the logic that programmers use to write code modules.
   a. process model
   b. object model
   c. business model
   d. network model

ANS: A   PTS: 1   REF: 19

19. ____ 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

ANS: D   PTS: 1   REF: 19

20. ____ 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

ANS: B   PTS: 1   REF: 20

21. ____ methods include the latest trends in software development.
22. The ___ method of developing systems is well-suited to project management tools and techniques.
   a. object-oriented analysis  
   b. adaptive
   c. structured analysis  
   d. rapid application development
   ANS: C  
   PTS: 1  
   REF: 21

23. 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
   ANS: A  
   PTS: 1  
   REF: 21

24. The ___ method of developing systems stresses team interaction and reflects a set of community-based values.
   a. object-oriented analysis  
   b. agile/adaptive
   c. structured analysis  
   d. rapid application development
   ANS: B  
   PTS: 1  
   REF: 21

25. 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. O-O  
   b. SDLC
   c. MSF  
   d. RUP
   ANS: B  
   PTS: 1  
   REF: 22

26. Because it focuses on processes that transform data into useful information, structured analysis is called a(n) ___ technique.
   a. iterative  
   b. process-centered
   c. inferred  
   d. empowered
   ANS: B  
   PTS: 1  
   REF: 22
27. In the ____ , like that shown in the accompanying figure, the result of each phase, which is called a deliverable or end product, flows sequentially into the next phase in the SDLC.
   a. interactive model  
   b. requirements model  
   c. waterfall model  
   d. object model  
   ANS: C  
   PTS: 1  
   REF: 22

28. In the model of the SDLC shown in the accompanying figure, 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  
   ANS: B  
   PTS: 1  
   REF: 23

29. In the model of the SDLC shown in the accompanying figure, 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  
   ANS: A  
   PTS: 1  
   REF: 23

30. In the model of the SDLC shown in the accompanying figure, 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  
   ANS: D  
   PTS: 1  
   REF: 24

31. In the model of the SDLC shown in the accompanying figure, during ____ , the new system is constructed.
32. In the model of the SDLC shown in the accompanying figure, during ____, the IT staff maintains, enhances, and protects the system.
   a. systems support and security
   b. systems implementation
   c. systems analysis
   d. systems planning

   ANS: A  PTS: 1  REF: 24

33. Whereas structured analysis treats processes and data as separate components, ____ combines data and the processes that act on the data into things called objects.
   a. the MSF
   b. the SDLC
   c. RUP
   d. O-O

   ANS: D  PTS: 1  REF: 24

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

   ANS: B  PTS: 1  REF: 24

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

   ANS: A  PTS: 1  REF: 25

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

   ANS: C  PTS: 1  REF: 26

37. When building an information system, all of the following basic guidelines should be considered except ____.
   a. stick to an overall development plan
   b. identify major milestones for project review and assessment
   c. provide accurate and reliable cost and benefit information
   d. ensure that users are not involved in the development process

   ANS: D  PTS: 1  REF: 27

38. 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

   ANS: B  PTS: 1  REF: 28
39. ____ provides vital protection and maintenance services for system software and hardware, including enterprise computing systems, networks, transaction processing systems, and corporate IT infrastructure.
   a. User support                     c. Systems support and security
   b. Database administration          d. Network administration

ANS: C                PTS: 1                REF: 29

40. A systems analyst needs ____.
   a. solid technical knowledge and good analytical ability
   b. strong oral and written communication skills
   c. an understanding of business operations and processes
   d. all of the above

ANS: D                PTS: 1                REF: 30

MULTIPLE RESPONSE

Modified Multiple Choice

1. An example of a vertical system is a(n) ____.
   a. inventory application           c. payroll application
   b. medical practice application    d. database for a video chain

ANS: B, D                PTS: 1                REF: 8

2. An example of a horizontal system is a(n) ____.
   a. inventory application           c. payroll application
   b. application for a Web-based retailer d. medical practice application

ANS: A, C                PTS: 1                REF: 8

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

ANS: A, C, D                PTS: 1                REF: 10

4. Product-oriented firms produced ____.
   a. retail services                c. computers
   b. routers                        d. microchips

ANS: B, C, D                PTS: 1                REF: 11

5. Database administration involves ____.
   a. network administration         c. data design
   b. user access                    d. backup

ANS: B, C, D                PTS: 1                REF: 29

MODIFIED TRUE/FALSE

1. System software consists of programs that support day-to-day business functions and provide users with the information they require. _________________________
ANS: F, Application
PTS: 1        REF: 8

2. Value-added services such as consulting, financing, and technical support can be more profitable than hardware. _________________
ANS: T       PTS: 1       REF: 11

3. Rational Unified Process documents the experience of Microsoft’s own software development teams. _________________
ANS: F
Microsoft Solutions Framework
MSF
PTS: 1       REF: 27

4. Rapid application development focuses on team-based fact-finding. _________________
ANS: F
Joint application development
Joint application development (JAD)
JAD
JAD (joint application development)
PTS: 1       REF: 27

5. User support provides users with technical information, training, and productivity support. _________________
ANS: T       PTS: 1       REF: 29

TRUE/FALSE

1. Most firms give their IT budgets a low priority in bad economic times.
ANS: F       PTS: 1       REF: 4

2. A mission-critical system is one that is unimportant to a company’s operations.
ANS: F       PTS: 1       REF: 7

3. In an information system, data is information that has been transformed into output that is valuable to users.
ANS: F       PTS: 1       REF: 7

4. In an information system, information consists of basic facts that are the system’s raw material.
ANS: F       PTS: 1       REF: 7
5. The success or failure of an information system usually is unrelated to whether users are satisfied with the system’s output and operations.

ANS: F  PTS: 1  REF: 10

6. Although the business-to-business (B2B) sector is more familiar to retail customers, the volume of business-to-consumer (B2C) transactions is many times greater.

ANS: F  PTS: 1  REF: 14

7. TP systems are inefficient because they process a set of transaction-related commands individually rather than as a group.

ANS: F  PTS: 1  REF: 16

8. In a knowledge management system, a knowledge base consists of logical rules that identify data patterns and relationships.

ANS: F  PTS: 1  REF: 17

9. A knowledge management system uses inference rules, which consist of a large database that allows users to find information by entering keywords or questions in normal English phrases.

ANS: F  PTS: 1  REF: 17

10. Most large companies require systems that combine transaction processing, business support, knowledge management, and user productivity features.

ANS: T  PTS: 1  REF: 17

11. Because they focus on a longer time frame, middle managers need less detailed information than top managers, but somewhat more than supervisors who oversee day-to-day operations.

ANS: F  PTS: 1  REF: 18-19

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

ANS: T  PTS: 1  REF: 19

13. CASE tools provide an overall framework for systems development and support a wide variety of design methodologies, including structured analysis and object-oriented analysis.

ANS: T  PTS: 1  REF: 20

14. It is unusual for system developers to mix and match system development methods to gain a better perspective.

ANS: F  PTS: 1  REF: 22

15. In the systems planning phase, a key part of the preliminary investigation is a feasibility study that reviews anticipated costs and benefits and recommends a course of action based on operational, technical, economic, and time factors.
In the systems analysis phase, the first step is requirements modeling, where business processes are investigated and what the new system must do to satisfy users is documented.

In object-oriented design, objects possess characteristics called properties, which the object inherits from its class or possesses on its own.

A scalable design can expand to meet new business requirements and volumes.

In object-oriented design, a message requests specific behavior or information from another object.

Microsoft offers a development approach called Microsoft Solutions Framework (MSF), which documents the experience of its own software development teams.

An IT group provides technical support, which includes application development, systems support and security, user support, database administration, network administration, and Web support.

Network administration includes hardware and software maintenance, support, and security.

Companies typically require that systems analysts have a college degree in information systems, computer science, business, or a closely related field, and some IT experience usually is required.

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

A corporate culture is the set of beliefs, rules, traditions, values, and attitudes that define a company and influence its way of doing business.

COMPLETION

1. __________ refers to the combination of hardware, software, and services that companies use to manage, communicate, and share information.
2. ______________________ is a step-by-step process for developing high-quality information systems.

ANS: Systems analysis and design

3. A(n) ______________________ combines information technology, people, and data to support business requirements.

ANS: information system

4. An IT department team includes ______________________ who plan, develop, and maintain information systems.

ANS: systems analysts

5. A(n) ______________________ is a set of related components that produces specific results, such as routing Internet traffic, manufacturing microchips, and controlling complex entities like the Mars Rover.

ANS: system

6. In the accompanying figure showing the components of an information system, ______________________ consist(s) of everything in the physical layer of the information system.

ANS: hardware
7. In the accompanying figure showing the components of an information system, ___________________________ refer(s) to the programs that control the hardware and produce the desired information or results.

ANS: software
PTS: 1 REF: 8

8. In the accompanying figure showing the components of an information system, ___________________________ is/are the raw material that an information system transforms into useful information.

ANS: data
PTS: 1 REF: 9

9. In the accompanying figure showing the components of an information system, ___________________________ describe(s) the tasks and business functions that users, managers, and IT staff members perform to achieve specific results.

ANS: processes
PTS: 1 REF: 9

10. In the accompanying figure showing the components of an information system, the people, called ___________________________, interact with an information system, both inside and outside the company.

ANS: users end users
PTS: 1 REF: 10

11. The newest category of company is the ___________________________ whose primary business depends on the Internet rather than a traditional business channel.

ANS: Internet-dependent firm dot-com company .com company
PTS: 1 REF: 12

12. Traditional companies sometimes are called ___________________________ companies because they conduct business primarily from physical locations.

ANS: brick-and-mortar
PTS: 1 REF: 12

13. Internet-based commerce is called ___________________________ and includes two main sectors: B2C (business-to-consumer) and B2B (business-to-business).
ANS:
e-commerce
electronic commerce
I-commerce
Internet commerce

PTS: 1  REF: 13

14. _________________________ technology uses high-frequency radio waves to track physical object.

ANS:
RFID
Radio frequency identification
RFID (Radio frequency identification)
Radio frequency identification (RFID)

PTS: 1  REF: 16

15. A truck fleet dispatcher might run a series of _________________________ scenarios to determine the impact of increased shipments or bad weather.

ANS: what-if

PTS: 1  REF: 16

16. _________________________ programs run on a company intranet and enable users to share data, collaborate on projects, and work in teams.

ANS: Groupware

PTS: 1  REF: 17

17. The systems implementation phase of the SDLC includes an assessment, called a(n) _________________________, to determine whether the system operates properly and if costs and benefits are within expectation.

ANS: systems evaluation

PTS: 1  REF: 24

18. A(n) _________________________ uses various symbols and shapes to represent data flow, processing, and storage.

ANS:
data flow diagram
DFD
data flow diagram (DFD)
DFD (data flow diagram)

PTS: 1  REF: 22

19. _________________________ design and construct Web pages, monitor traffic, manage hardware and software, and link Web-based applications to a company’s information systems.
ANS: Web support specialists

PTS: 1        REF:  29

20. 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.

ANS: certification

PTS: 1        REF:  32

MATCHING

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

a. MIS  f. team leaders
b. network model  g. operational employees
c. object model  h. supply chain management
d. fuzzy logic  i. data model
e. ERP  j. prototype

1. In many large companies, these kinds of systems provide cost-effective support for users and managers throughout the company.
2. The name for new business support systems that produced valuable information, in addition to performing manual tasks; their primary users were managers.
3. A B2B site that allows buyers, sellers, distributors, and manufacturer to offer products, submit specifications, and transact business.
4. Many knowledge management systems use this technique, which allows inferences to be drawn from imprecise relationships.
5. People who oversee operational employees and carry out day-to-day functions.
6. People who rely on TP systems to enter and receive data they need to perform their jobs.
7. Describes the design and protocols of telecommunications links.
8. Describes objects, which combine data and processes.
9. Describes data structures and design.
10. An early working version of an information system.

1. ANS: E        PTS:  1        REF:  15
2. ANS: A        PTS:  1        REF:  16
3. ANS: H        PTS:  1        REF:  14
4. ANS: D        PTS:  1        REF:  17
5. ANS: F        PTS:  1        REF:  19
6. ANS: G        PTS:  1        REF:  19
7. ANS: B        PTS:  1        REF:  19
8. ANS: C        PTS:  1        REF:  19
9. ANS: I        PTS:  1        REF:  19
10. ANS: J       PTS:  1        REF:  20

ESSAY
1. Explain what a knowledge worker is, and why this kind of worker is required by successful companies.

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

PTS: 1 REF: 19 TOP: Critical Thinking

2. What are the disadvantages of each of the three system development methods?

ANS:
With structured analysis, changes can be costly, especially in later phases. Requirements are defined early, and can change during development. Users might not be able to describe their needs until they can see examples of features and functions. With object-oriented analysis, this somewhat newer method of development might be less familiar to development team members. Also, the interaction of objects and classes can be complex in larger systems. With agile/adaptive methods, team members need a high level of technical and communications skills. Lack of structure and documentation can introduce risk factors. Finally, the overall project might be subject to scope change as user requirements change.

PTS: 1 REF: 21 TOP: Critical Thinking

3. Discuss the five basic systems development guidelines.

ANS:
Develop a Plan
Prepare an overall project plan and stick to it. Complete the tasks in a logical sequence. Develop a clear set of ground rules and be sure that everyone on the team understands them clearly.

Involve Users and Listen Carefully to Them
Ensure that users are involved in the development process, especially when identifying and modeling system requirements. When you interact with users, listen closely to what they are saying.

Use Project Management Tools and Techniques
Try to keep the project on track and avoid surprises. Create a reasonable number of checkpoints — too many can be burdensome, but too few will not provide adequate control.

Develop Accurate Cost and Benefit Information
Managers need to know the cost of developing and operating a system, and the value of the benefits it will provide. You must provide accurate, realistic cost and benefit estimates, and update them as necessary.

Remain Flexible
Be flexible within the framework of your plan. Systems development is a dynamic process, and overlap often exists among tasks. The ability to react quickly is especially important when you are working on a system that must be developed rapidly.

PTS: 1 REF: 27 TOP: Critical Thinking
Critical Thinking Questions
Case 1-1

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

1. 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, then, is he least likely to use, given what he knows about the disadvantages of each method?
   a. structured analysis
   b. agile/adaptive methods
   c. object-oriented analysis
   d. rapid application development

   ANS: B
   PTS: 1
   REF: 21
   TOP: Critical Thinking

2. 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 showing itself to be 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, Roark eliminates which of the following methods of development?
   a. structured analysis
   b. agile/adaptive methods
   c. object-oriented analysis
   d. rapid application development

   ANS: A
   PTS: 1
   REF: 21
   TOP: Critical Thinking

Critical Thinking Questions
Case 1-2

Maddy has been performing at a very high level at the firm, and so when two colleagues of hers 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.

3. 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 SDLC this team currently is. Which phase is it?
   a. systems analysis
   b. systems design
   c. systems planning
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  

ANS:
A  

PTS: 1  REF: 24  TOP: Critical Thinking