TRUE/FALSE

1. Many of the theories and concepts of project management are difficult to understand.

   ANS: F PTS: 1 REF: 44

2. If project managers lead projects in isolation, it is unlikely that those projects will ever truly serve the needs of the organization.

   ANS: T PTS: 1 REF: 44

3. Using a systems approach is critical to successful project management.

   ANS: T PTS: 1 REF: 45

4. Few business and information technology students understand the concepts of systems and performing a systems analysis.

   ANS: F PTS: 1 REF: 45

5. Although it is easier to focus on the immediate and sometimes narrow concerns of a particular project, project managers and other staff must keep in mind the effects of any project on the interests and needs of the entire system or organization.

   ANS: T PTS: 1 REF: 46

6. When you separate business and organizational issues from project management planning, you do a better job of ensuring project success.

   ANS: F PTS: 1 REF: 46

7. Organizational issues are often the least difficult part of working on and managing projects.

   ANS: F PTS: 1 REF: 47

8. According to the symbolic frame, what is most important about any event in an organization is what actually happened.

   ANS: F PTS: 1 REF: 48

9. Most colleges and universities have very strong functional organizations.

   ANS: T PTS: 1 REF: 49

10. An organization that uses a project organizational structure earns their revenue primarily from performing projects for other groups under contract.

    ANS: T PTS: 1 REF: 49

11. Project managers in matrix organizations have staff from various functional areas working on their projects.

ANS: T PTS: 1 REF: 50

12. Assigning staff part-time to the project often creates underutilization and/or misallocation of staff resources.

ANS: F PTS: 1 REF: 51

13. Project organizations may miss economies of scale available through the pooling of requests for materials with other projects.

ANS: T PTS: 1 REF: 51

14. The same organization can have different subcultures.

ANS: T PTS: 1 REF: 51

15. An organizational culture with strong unit integration makes the project manager's job more difficult.

ANS: F PTS: 1 REF: 52

16. External project stakeholders generally include the project sponsor, project team, support staff, and internal customers for the project.

ANS: F PTS: 1 REF: 52

17. Technical and analytical skills guarantee success in project management.

ANS: F PTS: 1 REF: 53

18. The best way to kill a project is to withhold the required money, human resources, and visibility for the project.

ANS: T PTS: 1 REF: 54

19. If project managers have functional management commitment, they will also have adequate resources and not be distracted by events that do not affect their specific projects.

ANS: F PTS: 1 REF: 54

20. If a project manager does not submit a potential project in the proper format, it could be rejected.

ANS: T PTS: 1 REF: 56

21. It is much more expensive to make major changes to a project during earlier phases.

ANS: F PTS: 1 REF: 57

22. Most IT projects involve a major amount of software development.

ANS: F PTS: 1 REF: 60

23. The Adaptive Software Development (ASD) life cycle model assumes that software development follows an adaptive approach because the requirements cannot be clearly expressed early in the life cycle.

    ANS: T PTS: 1 REF: 60

24. Since the organization usually commits more money as a project continues, a management review should occur after each phase to evaluate progress, potential success, and continued compatibility with organizational goals.

    ANS: T PTS: 1 REF: 61

25. The nature of hardware development projects is more diverse than software-oriented projects.

    ANS: F PTS: 1 REF: 63

26. Within the category of programmer, there are several job titles used to describe the specific technologies the programmer uses, such as project manager programmer, systems analyst programmer, macro developer, and so on.

    ANS: F PTS: 1 REF: 64

27. It is rare for technical specialists or project managers to remain with the same company for a long time.

    ANS: T PTS: 1 REF: 64

28. Because of the nature of information technology projects, the people involved come from very similar backgrounds and possess similar skill sets.

    ANS: F PTS: 1 REF: 64

29. Because of overlaps in their duties, hardware specialists usually understand the language of database analysts, and vice versa.

    ANS: F PTS: 1 REF: 64

30. COBOL programmers cannot be of much help on a Java project.

    ANS: T PTS: 1 REF: 64

MULTIPLE CHOICE

1. ____ describes a holistic view of carrying out projects within the context of the organization.
   a. Systems philosophy
   b. Systems thinking
   c. Systems analysis
   d. Systems approach

   ANS: B PTS: 1 REF: 45

2. The term "systems approach" emerged in the ____.
   a. 1940s
   b. 1950s
   c. 1960s
   d. 1970s

   ANS: B PTS: 1 REF: 45

3. ____ is a problem-solving approach that requires defining the scope of the system, dividing it into its components, and then identifying and evaluating its problems, opportunities, constraints, and needs.
   a. Systems philosophy
   b. Systems management
   c. Systems troubleshooting
   d. Systems analysis

   ANS: D PTS: 1 REF: 45

4. The ____ focuses on different groups' roles and responsibilities in order to meet the goals and policies set by top management.
   a. structural frame
   b. human resources frame
   c. political frame
   d. symbolic frame

   ANS: A PTS: 1 REF: 47

5. The ____ focuses on producing harmony between the needs of the organization and the needs of the people.
   a. structural frame
   b. human resources frame
   c. political frame
   d. symbolic frame

   ANS: B PTS: 1 REF: 47

6. The ____ assumes that organizations are coalitions composed of varied individuals and interest groups.
   a. political frame
   b. symbolic frame
   c. structural frame
   d. human resources frame

   ANS: A PTS: 1 REF: 47

7. A ____ is the hierarchy most people think of when picturing an organizational chart.
   a. project organizational structure
   b. system organizational structure
   c. matrix organizational structure
   d. functional organizational structure

   ANS: D PTS: 1 REF: 48-49

8. In a ____, program managers report to the CEO.
   a. project organizational structure
   b. system organizational structure
   c. matrix organizational structure
   d. functional organizational structure

   ANS: A PTS: 1 REF: 49

9. In a ____, personnel often report to both a functional manager and one or more project managers.
   a. project organizational structure
   b. system organizational structure
   c. matrix organizational structure
   d. functional organizational structure

   ANS: C PTS: 1 REF: 50

10. Project managers have the most authority in a pure ____.
    a. functional organizational structure
    b. project organizational structure
    c. matrix organizational structure
    d. circular organizational structure

    ANS: B PTS: 1 REF: 50

11. Project managers have the least amount of authority in a pure ____.
    a. functional organizational structure
    b. project organizational structure
    c. matrix organizational structure
    d. circular organizational structure

    ANS: A PTS: 1 REF: 50

12. In a ____ matrix organizational structure, the project manager controls the project budget and has moderate to high authority.
    a. weak
    b. balanced
    c. strong
    d. functional

    ANS: C PTS: 1 REF: 50

13. ____ is a set of shared assumptions, values, and behaviors that characterize the functioning of an organization.
    a. Organizational politics
    b. Organizational philosophy
    c. Organizational culture
    d. Organizational structure

    ANS: C PTS: 1 REF: 51

14. The ____ characteristic of organizational culture describes the degree to which management's decisions take into account the effect of outcomes on people within the organization.
    a. member identity
    b. group emphasis
    c. people focus
    d. unit integration

    ANS: C PTS: 1 REF: 51

15. ____ refers to the degree to which the organization monitors and responds to changes in the external environment.
    a. Means-ends orientation
    b. Open-systems focus
    c. Conflict tolerance
    d. Risk tolerance

    ANS: B PTS: 1 REF: 52

16. Many companies have realized that information technology is integral to their business and have created a vice president or equivalent-level position for the head of information technology, often called the ____.
    a. CPO
    b. CFO
    c. CEO
    d. CIO

    ANS: D PTS: 1 REF: 55

17. A ____ is a collection of project phases.
    a. project life cycle
    b. project feasibility
    c. project planning cycle
    d. project acquisition

    ANS: A PTS: 1 REF: 57

18. In early phases of a project life cycle, resource needs are usually ____ and the level of uncertainty is ____.
    a. lowest; highest
    b. high, lowest
    c. lowest, lowest
    d. highest, highest

    ANS: A PTS: 1 REF: 57

19. A preliminary or rough cost estimate is developed in the ____ phase, and an overview of the work involved is created.
    a. implementation
    b. development
    c. concept
    d. close-out

    ANS: C PTS: 1 REF: 57

20. In the ____ phase, the project team creates more detailed project plans, a more accurate cost estimate, and a more thorough WBS.
    a. development
    b. implementation
    c. concept
    d. close-out

    ANS: A PTS: 1 REF: 58

21. In the ____ phase, the project team creates a definitive or very accurate cost estimate, delivers the required work, and provides performance reports to stakeholders.
    a. development
    b. implementation
    c. concept
    d. close-out

    ANS: B PTS: 1 REF: 58

22. The ____ model assumes that requirements will remain stable after they are defined.
    a. spiral life cycle
    b. waterfall life cycle
    c. prototyping life cycle
    d. RAD life cycle

    ANS: B PTS: 1 REF: 60

23. The ____ model provides for progressive development of operational software, with each release providing added capabilities.
    a. spiral life cycle
    b. RAD life cycle
    c. waterfall life cycle
    d. incremental build life cycle

    ANS: D PTS: 1 REF: 60

24. The ____ model requires heavy user involvement, and developers use a model to generate functional requirements and physical design specifications simultaneously.
    a. RAD life cycle
    b. prototyping life cycle
    c. spiral life cycle
    d. incremental build life cycle

    ANS: B PTS: 1 REF: 60

25. The ____ model uses an approach in which developers work with an evolving prototype.
    a. incremental build life cycle
    b. waterfall life cycle
    c. RAD life cycle
    d. spiral life cycle

    ANS: C PTS: 1 REF: 60

26. Most trade schools, colleges, and universities did not start offering degrees in computer technology, computer science, management information systems, or other information technology areas until the ____.
    a. 1950s
    b. 1970s
    c. 1980s
    d. 1990s

    ANS: B PTS: 1 REF: 64

COMPLETION

1. To handle complex situations effectively, project managers need to take a(n) _____ view of a project and understand how it relates to the larger organization.

   ANS: holistic

   PTS: 1 REF: 45

2. A(n) _____ is an overall model for thinking about things as systems.

   ANS: systems philosophy

   PTS: 1 REF: 45

3. _____ are sets of interacting components working within an environment to fulfill some purpose.

   ANS: Systems

   PTS: 1 REF: 45

4. _____ addresses the business, technological, and organizational issues associated with creating, maintaining, and making a change to a system.

   ANS: Systems management

   PTS: 1 REF: 45

5. The three spheres of systems management are business, organization, and _____.

   ANS: technology

   PTS: 1 REF: 45

6. The _____ is usually depicted in an organizational chart.

   ANS: structural frame

   PTS: 1 REF: 47

7. The _____ focuses on symbols and meanings.

   ANS: symbolic frame

   PTS: 1 REF: 48

8. Three general classifications of organizational structures are _____, project, and matrix.

   ANS: functional

   PTS: 1 REF: 48

9. In a(n) _____ organizational structure, project managers have little or no authority.

   ANS: functional

   PTS: 1 REF: 50

10. When project managers use a(n) _____, they are better able to make decisions that address the needs of the entire organization.

    ANS: systems approach

    PTS: 1 REF: 51

11. Experienced project managers know it is often best to balance the degree of _____ to get good project results.

    ANS: control

    PTS: 1 REF: 52

12. Some projects have a senior manager called a(n) _____ who acts as a key proponent for a project.

    ANS: champion

    PTS: 1 REF: 54

13. A major element of good practice concerns _____, which addresses the authority and control for key IT activities in organizations, including IT infrastructure, IT use, and project management.

    ANS: IT governance

    PTS: 1 REF: 55

14. A(n) _____ is a product or service, such as a report, a training session, a piece of hardware, or a segment of software code, produced or provided as part of a project.

    ANS: deliverable
    PTS: 1 REF: 57

15. In the _____ phase, there should be some sort of customer acceptance of the entire project.

    ANS:
    close-out
    closeout

    PTS: 1 REF: 59

16. Understanding the _____ is just as important to good project management as understanding the phases of the traditional project life cycle.

    ANS: product life cycle

    PTS: 1 REF: 59

17. A(n) _____ is a framework for describing the phases involved in developing information systems.

    ANS:
    SDLC
    systems development life cycle
    systems development life cycle (SDLC)

    PTS: 1 REF: 60

18. The term _____ has become popular to describe new approaches that focus on close collaboration between programming teams and business experts.

    ANS: agile software development

    PTS: 1 REF: 61

19. Management reviews, called phase exits or _____, are very important for keeping projects on track and determining if they should be continued, redirected, or terminated.

    ANS: kill points

    PTS: 1 REF: 61

20. A(n) _____ is a group of senior executives from various parts of the organization, who regularly review important corporate projects and issues.

    ANS: executive steering committee

    PTS: 1 REF: 62

ESSAY

1. Describe the concept of a systems approach.

   ANS:
   The term **systems approach** emerged in the 1950s to describe a holistic and analytical approach to solving complex problems that includes using a systems philosophy, systems analysis, and systems management. A **systems philosophy** is an overall model for thinking about things as systems. **Systems** are sets of interacting components working within an environment to fulfill some purpose. For example, the human body is a system composed of many subsystems—the nervous system, the skeletal system, the circulatory system, the digestive system, and so on. **Systems analysis** is a problem-solving approach that requires defining the scope of the system, dividing it into its components, and then identifying and evaluating its problems, opportunities, constraints, and needs. Once this is completed, the systems analyst then examines alternative solutions for improving the current situation, identifies an optimum, or at least satisfactory, solution or action plan, and examines that plan against the entire system. **Systems management** addresses the business, technological, and organizational issues associated with creating, maintaining, and making a change to a system.

   PTS: 1 REF: 45 TOP: Critical Thinking

2. What are the four frames of organizations? Describe each frame.

   ANS:
   The **structural frame** deals with how the organization is structured (usually depicted in an organizational chart) and focuses on different groups' roles and responsibilities in order to meet the goals and policies set by top management. This frame is very rational and focuses on coordination and control. For example, within the structural frame, a key information technology issue is whether a company should centralize the information technology personnel in one department or decentralize across several departments. You will learn more about organizational structures in the next section.

   The **human resources frame** focuses on producing harmony between the needs of the organization and the needs of the people. It recognizes that there are often mismatches between the needs of the organization and the needs of individuals and groups and works to resolve any potential problems. For example, many projects might be more efficient for the organization if personnel worked 80 or more hours a week for several months. This work schedule would probably conflict with the personal lives of those people. Important issues in information technology related to the human resources frame are the shortage of skilled information technology workers within the organization and unrealistic schedules imposed on many projects.

   The **political frame** addresses organizational and personal politics. Politics in organizations take the form of competition among groups or individuals for power and leadership. The political frame assumes that organizations are coalitions composed of varied individuals and interest groups. Often, important decisions need to be made based on the allocation of scarce resources. Competition for scarce resources makes conflict a central issue in organizations, and power improves the ability to obtain scarce resources. Project managers must pay attention to politics and power if they are to be effective. It is important to know who opposes your projects as well as who supports them. Important issues in information technology related to the political frame are the power shifts from central functions to operating units or from functional managers to project managers.

The s**ymbolic frame** focuses on symbols and meanings. What is most important about any event in an organization is not what actually happened, but what it means. Was it a good sign that the CEO came to a kickoff meeting for a project, or was it a threat? The symbolic frame also relates to the company's culture. How do people dress? How many hours do they work? How do they run meetings? Many information technology projects are international and include stakeholders from various cultures. Understanding those cultures is also a crucial part of the symbolic frame.

PTS: 1 REF: 47-48 TOP: Critical Thinking

3. Describe each of the three major types of organizational structure.

ANS:
A **functional organizational structure** is the hierarchy most people think of when picturing an organizational chart. Functional managers or vice presidents in specialties such as engineering, manufacturing, information technology (IT), and human resources (HR) report to the chief executive officer (CEO). Their staffs have specialized skills in their respective disciplines. For example, most colleges and universities have very strong functional organizations. Only faculty in the Business department teach business courses; faculty in the History department teach history; faculty in the Art department teach art, and so on.

A **project organizational structure** also has a hierarchical structure, but instead of functional managers or vice presidents reporting to the CEO, program managers report to the CEO. Their staffs have a variety of skills needed to complete the projects within their programs. An organization that uses this structure earns their revenue primarily from performing projects for other groups under contract. For example, many defense, architectural, engineering, and consulting companies use a project organizational structure. These companies often hire people specifically to work on particular projects.

A **matrix organizational structure** represents the middle ground between functional and project structures. Personnel often report to both a functional manager and one or more project managers. For example, information technology personnel at many companies often split their time between two or more projects, but they report to their manager in the Information Technology department. Project managers in matrix organizations have staff from various functional areas working on their projects. Matrix organizational structures can be strong, weak, or balanced, based on the amount of control exerted by the project managers.

PTS: 1 REF: 48-50 TOP: Critical Thinking

4. What are the reasons why top management commitment is crucial to project managers?

ANS:
Project managers need adequate resources. The best way to kill a project is to withhold the required money, human resources, and visibility for the project. If project managers have top management commitment, they will also have adequate resources and not be distracted by events that do not affect their specific projects.

Project managers often require approval for unique project needs in a timely manner. For example, on large information technology projects, top management must understand that unexpected problems may result from the nature of the products being produced and the specific skills of the people on the project team. For example, the team might need additional hardware and software halfway through the project for proper testing, or the project manager might need to offer special pay and benefits to attract and retain key project personnel. With top management commitment, project managers can meet these specific needs in a timely manner.

Project managers must have cooperation from people in other parts of the organization. Since most information technology projects cut across functional areas, top management must help project managers deal with the political issues that often arise in these types of situations. If certain functional managers are not responding to project managers' requests for necessary information, top management must step in to encourage functional managers to cooperate.

Project managers often need someone to mentor and coach them on leadership issues. Many information technology project managers come from technical positions and are inexperienced as managers. Senior managers should take the time to pass on advice on how to be good leaders. They should encourage new project managers to take classes to develop leadership skills and allocate the time and funds for them to do so.

PTS: 1 REF: 54-55 TOP: Critical Thinking

5. What is a systems development life cycle? What are some of the predictive models associated with the systems development life cycle?

ANS:
A **systems development life cycle (SDLC)** is a framework for describing the phases involved in developing information systems. Some popular models of a systems development life cycle include the waterfall model, the spiral model, the incremental build model, the prototyping model, and the Rapid Application Development (RAD) model. These life cycle models are examples of a **predictive life cycle**, meaning that the scope of the project can be clearly articulated and the schedule and cost can be accurately predicted. The project team spends a large portion of the project effort attempting to clarify the requirements of the entire system and then producing a design. Users are often unable to see any tangible results in terms of working software for an extended period. Below are brief descriptions of several predictive SDLC models:

The waterfall life cycle model has well-defined, linear stages of systems development and support. This life cycle model assumes that requirements will remain stable after they are defined.

The spiral life cycle model was developed based on experience with various refinements of the waterfall model as applied to large government software projects. It recognizes the fact that most software is developed using an iterative or spiral approach rather than a linear approach.

The incremental build life cycle model provides for progressive development of operational software, with each release providing added capabilities.

The prototyping life cycle model is used for developing software prototypes to clarify user requirements for operational software. It requires heavy user involvement, and developers use a model to generate functional requirements and physical design specifications simultaneously. Developers can throw away or keep prototypes, depending on the project.

The Rapid Application Development (RAD) life cycle model uses an approach in which developers work with an evolving prototype. This life cycle model also requires heavy user involvement and helps produce systems quickly without sacrificing quality. Developers use RAD tools such as CASE (Computer Aided Software Engineering), JRP (Joint Requirements Planning), and JAD (Joint Application Design) to facilitate rapid prototyping and code generation.

PTS: 1 REF: 60 TOP: Critical Thinking