Project Management: Process, Technology, and Practice **(Vaidyanathan)**
Chapter 2   Process and Methods

2.1   True False

1) A procedure defines how to do a task.
Answer: TRUE
Diff: 1   Page Ref: 38

2) A business process is a collection of related, structured business activities or tasks in a specific order that produce a specific service or product for a customer.
Answer: TRUE
Diff: 2   Page Ref: 39

3) Delivery is one of the PMBOK process groups.
Answer: FALSE
Diff: 2   Page Ref: 41

4) A project service request is a document that shows project details and the project team with stakeholders' approval and customer authorization to work on a project.
Answer: FALSE
Diff: 2   Page Ref: 41

5) A work breakdown structure is a list of tasks broken down to small manageable activities.
Answer: TRUE
Diff: 2   Page Ref: 42

6) Stakeholders are people involved in the project or those who have an impact on the project activities.
Answer: TRUE
Diff: 1   Page Ref: 43

7) Continuous Improvement Management is a methodology that involves all employees of an organization in a systematic, structured process to implement continuous improvement in quality in projects.
Answer: TRUE
Diff: 1   Page Ref: 45

8) Tangible benefits arising from project implementation using CIM principles include a shorter manufacturing cycle time, lower inventory, lower project reject rate, and increased customer satisfaction.
Answer: TRUE
Diff: 2   Page Ref: 46

9) According to some researchers mentioned in the textbook, CIM leads organizations to be innovators and not followers.
Answer: FALSE
Diff: 2   Page Ref: 48

10) According to some researchers, CIM may hinder creativity due to enforcement of standards, and cause organizations to be narrow-minded, to be totally focused only on serving customers, and to focus too much on cost efficiency.
Answer: TRUE
Diff: 2   Page Ref: 48

11) Seven Sigma is oriented toward the solution of problems at the root level and the prevention of their recurrence.
Answer: FALSE
Diff: 1   Page Ref: 49

12) Six Sigma asserts that continuous efforts to reduce process variation are important to overall performance and customer satisfaction in a project.
Answer: TRUE
Diff: 2   Page Ref: 49

13) The Capability Maturity Model for software implementation is used by many organizations to identify best practices that are useful in increasing the maturity of their processes.
Answer: TRUE
Diff: 1   Page Ref: 54

14) Software process capability focuses on achieved results.
Answer: FALSE
Diff: 2   Page Ref: 54

15) At the CMMI Level 5, software processes are defined by individuals in an organization.
Answer: FALSE
Diff: 2   Page Ref: 55

16) At the CMMI Level 4, an organization typically **does not** provide a stable environment for developing and maintaining software.
Answer: FALSE
Diff: 2   Page Ref: 55

17) At the CMMI Level 2, all projects in an organization use an approved, tailored version of the organization's standard and tested software process for developing and maintaining software.
Answer: FALSE
Diff: 2   Page Ref: 56

18) The CMMI Level 3 uses an organization-wide software process database to collect and analyze data available from a project's defined software processes.
Answer: FALSE
Diff: 2   Page Ref: 57

19) At the CMMI Level 1, an organization focuses on continuous process improvement.
Answer: FALSE
Diff: 2   Page Ref: 57

20) At the CMMI Level 5, common causes of defects are discovered, identified, prioritized, and eliminated.
Answer: TRUE
Diff: 1   Page Ref: 57

21) The traditional SDLC's popularity is because of its flexibility.
Answer: FALSE
Diff: 2   Page Ref: 60

22) The spiral model uses a linear approach for project definition and implementation.
Answer: FALSE
Diff: 1   Page Ref: 62

23) Restricted development means that project activities are packaged to fit time boxes.
Answer: FALSE
Diff: 1   Page Ref: 65

24) Environment is a supporting RUP workflow.
Answer: TRUE
Diff: 1   Page Ref: 67

25) Higher stability of deliverables is one of the reasons why agile methods are used.
Answer: TRUE
Diff: 2   Page Ref: 68

26) The most important feature of the XP philosophy relative to SDLC is that programmers can respond to changing customer requirements at any time.
Answer: TRUE
Diff: 2   Page Ref: 70

27) With the spiral model, activities are managed concurrently and more people are working on the project so the complexity of projects increases.
Answer: TRUE
Diff: 2   Page Ref: 74

28) The extreme programming model is very suitable for large projects.
Answer: FALSE
Diff: 2   Page Ref: 74

29) When compared to the traditional SDLC, changing scope is more costly with the iterative SDLC.
Answer: FALSE
Diff: 2   Page Ref: 74

30) A disadvantage of the traditional SDLC is that it **does not** work well with global and virtual teams.
Answer: FALSE
Diff: 2   Page Ref: 74

2.2 Multiple Choice

1) A specific ordering of structured activities with defined inputs and outputs best defines
A) process.
B) value chain.
C) function.
D) system.
Answer: A
Diff: 2   Page Ref: 39

2) Benefits of process improvements include
A) improvements in project quality.
B) increase in project value.
C) improved efficiency and effectiveness.
D) all of the above.
Answer: D
Diff: 1   Page Ref: 39-40

3) Which of the following is a collection of processes and knowledge areas generally accepted as best practices within the project management discipline?
A) RAD
B) PMBOK
C) UCOK
D) PMBPR
Answer: B
Diff: 1   Page Ref: 41

4) The PMBOK process groups include each of the following **except**
A) executing.
B) monitoring and controlling.
C) maintaining.
D) closing.
Answer: C
Diff: 2   Page Ref: 41

5) PMBOK knowledge areas include
A) project quality management.
B) project communication management.
C) project procurement management.
D) all of the above.
Answer: D
Diff: 1   Page Ref: 41

6) Coordinating all other project management knowledge areas describes
A) project integration management.
B) project communications management.
C) project procurement management.
D) project quality management.
Answer: A
Diff: 2   Page Ref: 41

7) Project scope management involves
A) developing a project charter.
B) collecting requirements.
C) defining activities.
D) acquiring a project team.
Answer: B
Diff: 3   Page Ref: 42

8) Developing schedules, milestones, and critical paths is associated with the
A) initiating process group and the cost management knowledge area.
B) executing process group and the communications management knowledge area.
C) planning process group and time management knowledge area.
D) executing process group and the risk management knowledge area.
Answer: C
Diff: 3   Page Ref: 44

9) Assessing the value and performance of the project and surveying satisfaction are associated with the
A) planning process group and the time management knowledge area.
B) initiating process group and the human resource management knowledge area.
C) controlling process group and the scope management knowledge area.
D) closing process group and the communications management knowledge area.
Answer: D
Diff: 2   Page Ref: 44

10) A systematic method to continuously augment how organizations conduct business and projects best defines
A) process improvement.
B) product improvement.
C) value chain improvement.
D) business process reengineering.
Answer: A
Diff: 2   Page Ref: 44

11) Deming, Juran, and other scholars found the common denominator in any quality system is
A) people.
B) change.
C) communication.
D) structure.
Answer: B
Diff: 1   Page Ref: 45

12) Continuous Improvement Management principles include each of the following **except**
A) fact-based decision making.
B) employee involvement.
C) rapid engineering.
D) strategic alliance.
Answer: C
Diff: 3   Page Ref: 46

13) A process improvement approach that is used to find and eliminate errors and defects, reduce cycle times, reduce cost, improve productivity, and meet customer expectations best defines
A) Join Application Design.
B) Rapid Application Development.
C) Object Oriented Analysis and Design.
D) Six Sigma.
Answer: D
Diff: 2   Page Ref: 49

14) Six Sigma's problem solving methodology is called
A) DMAIC.
B) RAPID.
C) ENGAGE.
D) REVIVE.
Answer: A
Diff: 2   Page Ref: 51

15) The Six Sigma DMAIC phase that identifies the problem statement of a project is
A) measure.
B) define.
C) analyze.
D) investigate.
Answer: B
Diff: 2   Page Ref: 51

16) Which of Six Sigma's DMAIC phases focuses on the measurement of internal process that affect factors that are critical to quality?
A) analyze
B) define
C) measure
D) improve
Answer: C
Diff: 2   Page Ref: 51

17) Which Six Sigma DMAIC phase focuses on why and how defects and errors occur?
A) control
B) define
C) measure
D) analyze
Answer: D
Diff: 2   Page Ref: 51

18) A model for software implementation used to identify the software process maturity level of organizations best defines
A) CMM.
B) PDM.
C) SPM.
D) SAP.
Answer: A
Diff: 2   Page Ref: 54

19) A set of activities, methods, practices, and transformations that people use to develop and maintain software and its associated products that include project plans, design documents, code, test cases, and user manuals best defines
A) system.
B) software process.
C) business process.
D) work process.
Answer: B
Diff: 2   Page Ref: 54

20) A potential for growth in capability that indicates both the richness of an organization's software process and the consistency with which it is applied in projects throughout the organization best defines
A) system maturity.
B) organizational maturity.
C) software process maturity.
D) business process maturity.
Answer: C
Diff: 2   Page Ref: 54

21) CMM benefits include
A) allowing software organizations to focus on software process activities.
B) allowing software organizations to strategize how to evolve toward a culture of software engineering and management excellence.
C) providing guidance to organizations on how to gain control of their processes to develop and maintain software.
D) all of the above.
Answer: D
Diff: 1   Page Ref: 54

22) A software company where software process is ad hoc and occasionally even chaotic is at the CMMI
A) Level 0.
B) Level 1.
C) Level 3.
D) Level 5.
Answer: B
Diff: 2   Page Ref: 55

23) Each of the following is an objective of the CMMI Level 2 **except**
A) identify and control requirements, specifications, and test plans.
B) document and control all changes in software projects.
C) use a reactionary approach to projects.
D) keep software activities consistent with system requirements.
Answer: C
Diff: 2   Page Ref: 55-56

24) At which CMMI level are software processes documented, standardized, and integrated into a standard "to-be" practiced process for an organization?
A) Level 7
B) Level 0
C) Level 1
D) Level 3
Answer: D
Diff: 2   Page Ref: 56

25) The CMMI Level 3 objectives include
A) planning organization-level process development and improvement activities.
B) developing and maintaining a standard software process for the organization.
C) identifying all defects in software using CIM and Six Sigma and removing defects to improve quality.
D) all of the above.
Answer: D
Diff: 2   Page Ref: 57

26) CMMI Level 4 objectives include
A) manage measurable metrics and software goals.
B) plan organization-level process development and improvement activities.
C) establish a baseline for software engineering process and management.
D) constantly changing the software process as the project progresses.
Answer: A
Diff: 3   Page Ref: 57

27) CMMI Level 5 objectives include
A) establishing a baseline for software engineering process and management.
B) planning continuous process improvement activities and encouraging employees to participate in those activities.
C) keeping software activities consistent with system requirements.
D) reverting back to coding and testing during a crisis.
Answer: B
Diff: 3   Page Ref: 58

28) The conceptual phase of any system or just the software facet of a system best describes the SDLC
A) preliminary design phase.
B) analysis phase.
C) systems investigation phase.
D) launch phase.
Answer: C
Diff: 2   Page Ref: 58

29) A working prototype that is implemented to design and define various functionalities of the project and show customers the friendly software interface and the story line of functionalities involved in the project best describes the SDLC
A) analysis phase.
B) systems investigation phase.
C) preliminary design phase.
D) testing phase.
Answer: C
Diff: 2   Page Ref: 59

30) The final output of the analysis SDLC phase describes
A) how various processes will work with the proposed system or software.
B) how the system will interact with other systems.
C) how and what data, information, and knowledge are collected in the organization.
D) all of the above.
Answer: D
Diff: 1   Page Ref: 59

31) Documentation resulting from the SDLC launch phase includes
A) operating instructions and user manuals.
B) final design specifications.
C) software requirements.
D) interface design specifications.
Answer: A
Diff: 2   Page Ref: 59

32) The spiral model of software process involves
A) determination of objectives, alternatives, and constraints.
B) evaluation of alternatives, risk identification, and risk resolution.
C) planning and development of the next level of the project.
D) all of the above.
Answer: D
Diff: 2   Page Ref: 63

33) A process model used to develop object-oriented software best defines
A) unified process.
B) XML.
C) CMMI.
D) AM.
Answer: A
Diff: 2   Page Ref: 64

34) A graphical language for visualizing, specifying, constructing, and documenting object-oriented software best defines
A) CASE.
B) UML.
C) JAD.
D) RAD.
Answer: B
Diff: 2   Page Ref: 64

35) The UP phase focused on specification of use-cases and scope definition of a project is
A) construction.
B) elaboration.
C) inception.
D) transition.
Answer: C
Diff: 2   Page Ref: 64

36) The UP phase concentrating on "high-risk" components of the proposed system in order to minimize the overall risk of the proposed system best defines
A) construction.
B) inception.
C) transition.
D) elaboration.
Answer: D
Diff: 2   Page Ref: 65

37) The UP phase where components of the system are developed and tested is
A) construction.
B) transition.
C) inception.
D) elaboration.
Answer: A
Diff: 2   Page Ref: 65

38) The UP phase where the proposed, implemented system is deployed to end users best describes the
A) construction phase.
B) transition phase.
C) inception phase.
D) elaboration phase.
Answer: B
Diff: 2   Page Ref: 65

39) Best practices supported by RUP include each of the following **except**
A) manage requirements.
B) use component-based architectures.
C) develop software iteratively.
D) facilitate a linear approach to software development.
Answer: D
Diff: 3   Page Ref: 65

40) Core RUP workflows include each of the following **except**
A) integration.
B) deployment.
C) implementation.
D) business modeling.
Answer: A
Diff: 2   Page Ref: 66

41) Supporting core RUP workflows include each of the following **except**
A) configuration and change management.
B) affirmation.
C) project management.
D) environment.
Answer: B
Diff: 2   Page Ref: 67

42) Factors for using Agile methods include
A) prioritization of tasks is done by key stakeholders.
B) works well with true teamwork and collaboration.
C) shortened development cycles.
D) all of the above.
Answer: D
Diff: 1   Page Ref: 68

43) Advantages of the Scrum model include
A) great when requirements are fluid.
B) works well with inexperienced team members.
C) does not require a significant time commitment from customers.
D) very suitable for large projects.
Answer: A
Diff: 2   Page Ref: 74

44) Disadvantages of the iterative SDLC include each of the following **except**
A) revisiting and revising prior phases is not easy to accomplish.
B) high-level design has to predict all integrations well in advance.
C) needs great effort to manage all integrations.
D) project teams should be able to estimate well enough to plan all integrations.
Answer: A
Diff: 3   Page Ref: 74

45) The Unified Process
A) is great for development of large-scale projects.
B) is great for development of geographically and globally dispersed projects.
C) provides better overall quality.
D) is all of the above.
Answer: D
Diff: 2   Page Ref: 74

2.3 Essay

1) Identify five benefits of process improvements.
Answer: Benefits include improvements in project quality, increase in internal and external customer satisfaction, increase in project value, better customer satisfaction, and improvement in productivity. Additional benefits are provided in the textbook.
Diff: 2   Page Ref: 39-40

2) List the nine PMBOK knowledge areas.
Answer: The nine PMBOK knowledge areas are project integration management, project scope management, project time management, project cost management, project quality management, project human resources management, project communications management, project risk management, and project procurement management.
Diff: 3   Page Ref: 41

3) For the quality management knowledge area, identify five activities that would be carried out.
Answer: Determine quality processes, determine quality standards, manage quality and perform quality assurance, quality evaluation and control, and final acceptance are five activities.
Diff: 2   Page Ref: 44

4) Define CIM. What are its seven principles?
Answer: CIM is a methodology that involves all employees of an organization in a systematic, structured process to implement continuous improvement in quality in projects. The seven principles are customer focus, employee involvement, process centered, strategic alliance, fact-based decision making, good communications, and continuous improvement.
Diff: 3   Page Ref: 45-46

5) What is Six Sigma? What is DMAIC?
Answer: Six Sigma is a process improvement approach that is used to find and eliminate errors and defects, reduce cycle times, reduce cost, improve productivity, and meet customer expectations. DMAIC is Six Sigma's problem-solving methodology and includes define, measure, analyze, improve, and control processes.
Diff: 2   Page Ref: 49-52