1) Six Sigma (60) is a set of techniques and tools for process improvement.

a. True

b. False

2) Process improvement is a cyclic process

a. True

b. False

3) In some cases (like explosions manufacturing), even 6 sigma level is not enough so we need to improve the process to be 7 or 8 sigma.

a. True

b. False

4) Reaching 6 sigma level means that the process has 3.4 defects per million.

a. True

b. False

5) A factory can reach 1 defect per million in its production even if its processes did not reach 6 sigma level, but that will be very expensive.

a. True

b. False

6) Having ISO14001 certificate means that the process produces defect-free products.

a. True

b. False

7) Process management helps in controlling quality and time but not the cost.

a. True

b. False

8) Project plan should be done even if we finished the project without it because it is an important part of the documentation.

a. True

b. False

9) Systematic Process Modeling enables us to perform process measurement.

a. True

b. False

10) While a process model is a vehicle for solving problems and achieving development goals, a process is a specification of how this is done.

a. True

b. False

11) A process model can describe a process on different levels of abstraction (e.g., lifecycle process level, engineering process level, atomic step level).

a. True

b. False

12) Process models can be used for different purposes, e.g., for coordinating, synchronizing, monitoring, and improving software development, maintenance, and operation activities.

a. True

b. False

13) A software process model is an abstract representation of a process.

a. True

b. False

14) Each atomic process consists of a set of subprocesses.

a. True

b. False

15) One of the main elements of a process model is a description of an identifiable activity or a group of activities.

a. True

b. False

16) One of the main elements of a process model is a description of the product flow (i.e., input and output products for activities).

a. True

b. False

17) A description of the relationship to roles is not one of the main elements of a process model.

a. True

b. False

18) The cost is not one of the main elements of a process model.

a. True

b. False

19) The process performer (i.e., “agent”) can be a human or a machine. In the case of a machine, the term “process execution” is usually used.

a. True

b. False

20) A process definition is a description of a process that is enactable.

a. True

b. False

21) A process program is a description of a process that can be interpreted by machines.

a. True

b. False

22) CMMI is a process and behavioral model that helps organizations streamline process improvement.

a. True

b. False

23) “Software process” and “software process model” are two words with the same meaning.

a. True

b. False

24) Systematic process modeling is not doable in large development projects because it increases the complexity.

a. True

b. False

25) A process schema (synonym: process metamodel, process architecture) is a conceptual framework for the consistent description of process models and their relationships.

a. True

b. False

26) If we have a project with 2 phases, phase 2 start date should be > phase 1 end date.

a. True

b. False

27) Having a goal for each project is not a must.

a. True

b. False

28) A process agent is a human or organizational entity that sets the goals of a process and is responsible for their achievement.

a. True

b. False

29) A process owner is a person who pursues one or several goals of process modeling (e.g., defining, extending, maintaining, and improving process models).

a. True

b. False

30) Phases can be subdivided into sub-phases.

a. True

b. False

31) A process model can be either prescriptive or interactive.

a. True

b. False

32) A descriptive model observes the processes actually performed and describes current practice.

a. True

b. False

33) A prescriptive process model aims to address all issues of software development and tells people to do (some) things differently.

a. True

b. False

34) After deploying the prescriptive model, it becomes the new descriptive model.

a. True

b. False

35) We can replace “Q” with “f(Process, Context)” where “Q” means some quality aspects of the product.

a. True

b. False

36) In software, when we refer to quality, we mean either cost or time.

a. True

b. False

37) In the function Q = f(Process, Context), the function “f” is well understood and accurate.

a. True

b. False

38) The problems addressed by process changes are typically properties of the software product or the project that produces or modifies the product.

a. True

b. False

39) Two types of prescriptive process models can be distinguished: lifecycle models and engineering models.

a. True

b. False

40) Engineering process models describe (possibly in very much detail) a fraction of the complete software lifecycle process, for example, a specific type of inspection.

a. True

b. False

41) Lifecycle process models can be very detailed, often not only describing “what” to do but also explaining “how” to do it.

a. True

b. False

42) Software lifecycle commonly has these activities: requirements analysis, design, coding, testing, and delivery.

a. True

b. False

43) The output of the Requirements Analysis is the Software Requirements Specification (SRS) document.

a. True

b. False

44) Requirements Analysis specifies “how” and not “what.”

a. True

b. False

45) Requirement Analysis forms the basis of agreement between the user and developer.

a. True

b. False

46) Requirement specifications of medium systems should not exceed 10 pages.

a. True

b. False

47) Design includes three main tasks: architecture design, high-level design, and detailed design.

a. True

b. False

48) The goal of coding is to implement the design with simple and easy-to-understand code.

a. True

b. False

49) In software development, defects are introduced in each phase.

a. True

b. False

50) The cost of the testing phase is less than any other phase.

a. True

b. False

51) Most of the defects are introduced in the requirements phase.

a. True

b. False

52) The cost of latency: The cost of defect removal increases exponentially with latency time.

a. True

b. False

53) The most common and easy-to-use process model is waterfall.

a. True

b. False

54) Waterfall needs less documentation than any other process model.

a. True

b. False

55) Agile is ideal when we expect a lot of changes.

a. True

b. False

56) We should have a very strong team to handle the waterfall process model.

a. True

b. False

57) Waterfall does not depend on iteration.

a. True

b. False

58) Waterfall is the best process model to integrate risk management.

a. True

b. False

59) The Iterative Enhancement Process Model involves the customer early.

a. True

b. False

60) One of the disadvantages of the Iterative Enhancement Process Model is delaying availing the core of the final product.

a. True

b. False

61) Prototyping concentrates on the development of an executable version of the system that fulfills a limited number of requirements.

a. True

b. False

62) A prototype is a great way to clarify ambiguous or unknown requirements.

a. True

b. False

63) A prototype cannot be developed unless the final properties are clear.

a. True

b. False

64) Prototyping increases the cost dramatically.

a. True

b. False

65) Extreme Programming.

a. True

b. False

66) One of the disadvantages of the spiral model is less flexibility.

a. True

b. False

67) Incremental commitment model (ICM) is a lifecycle model specially invented for developing very small projects.

a. True

b. False

68) In the V-Shaped Process Model, each phase must be completed before the next phase begins.

a. True

b. False

69) In the V-Shaped Process Model, the testing procedures are developed early in the life cycle before any coding is done.

a. True

b. False

70) Flexibility is the most important advantage of the V-Shaped Process Model.

a. True

b. False

71) The Unified Process model is iterative but not incremental.

a. True

b. False

72) The Unified Process is component-based.

a. True

b. False

73) Agile is a combination of iterative and incremental process models with a focus on process adaptability and customer satisfaction by rapid delivery of a working software product.

a. True

b. False

74) Agile Manifesto focuses on contract negotiation more than any other aspect.

a. True

b. False

75) Agile is not optimal if the team works changing frequently.

a. True

b. False

76) Most organizations spend a lot of money on systems maintenance.

a. True

b. False

77) One of the most important advantages of Agile is flexibility.

a. True

b. False

78) Agile needs a lot of resources.

a. True

b. False

79) Documentation in Agile is the best.

a. True

b. False

80) Agile enables concurrent development and delivery within an overall planned context.

a. True

b. False

81) Agile depends heavily on customer interaction.

a. True

b. False

82) Extreme Programming (XP) takes an ‘extreme’ approach to iterative development.

a. True

b. False

83) Refactoring is rework and should not be done unless it is mandatory.

a. True

b. False

84) In XP, new versions may be built several times per day.

a. True

b. False

85) It is proven that pair programming provides better results.

a. True

b. False

86) In an Extreme Programming process, the customer is a member of the development team.

a. True

b. False

87) Refactoring reduces the need for documentation.

a. True

b. False

88) The most popular Agile method is Extreme Programming.

a. True

b. False

89) In Markov chain, the probabilities express the frequency of system stimuli at certain states and form their probability distribution.

a. True

b. False

90) Product quality is affected by process quality, people quality, development technology, and cost, time, and schedule.

a. True

b. False

91) A successful process has well-known components.

a. True

b. False

92) A lot of overtime working hours is proof of a successful process because it shows that our employees are loyal.

a. True

b. False

93) One of the best practices is to let every employee be in charge of every detail of the project because this is the real ownership.

a. True

b. False

94) One of the symptoms of process failure is “too much rework.”

a. True

b. False

95) Continuous SPI approaches focus on solutions for the most important

Challenges of a software development organization.

a. True

b. False

96) CMMI is a Process-Improvement Model that provides a set of best practices that address productivity, performance, costs, and stakeholder satisfaction.

a. True

b. False

97) CMMI has multiple disciplines and multiple applications.

a. True

b. False

98) CMMI contains 6 maturity levels.

a. True

b. False

99) In CMMI, if the processes are unpredictable, poorly controlled, reactive, that means we are in maturity level 0.

a. True

b. False

100) In CMMI Level 5, process performance is continually improved through incremental and innovative technological improvements.

a. True

b. False

101) In CMMI, the initial maturity level focuses on “firefighting,” while in the optimizing maturity level, the focus is on “fire prevention.”

a. True

b. False

102) Poor communication among workers is one of the causes of failure.

a. True

b. False

103) Project metrics are used to measure the health of processes, activities, resources, and deliverables.

a. True

b. False

104) Defects are faults found by the practitioners during software development.

a. True

b. False

105) To improve the Defect Removal Efficiency (DRE), we need to minimize the number of errors, not the defects.

a. True

b. False

106) Defect Removal Efficiency (DRE), the relationship between errors (E) and defects (D), can be represented by the following equation: DRE = E / (E + D), and the ideal is a DRE of 1.

a. True

b. False

107) Portability means the ability to work on different platforms.

a. True

b. False

108) Usability and reusability have the same meaning.

a. True

b. False

109) Correctness and reliability are two words with the same meaning.

a. True

b. False

110) McCall's Triangle of Quality consists of product revision, product transition, and product operation.

a. True

b. False

Certainly! Here are the statements with the missing "a," "b," and "c" before the choices:

111) Software Engineering Development Models examples:

a. Spiral Model

b. Rational Unified Process

c. All of the above

112) One of the reasons why we need process management:

a. Over budget

b. Low quality

c. All of the above

113) One of the oldest and most common Software Engineering development models examples:

a. Waterfall model

b. Agile processes

c. None of the above

114) Software lifecycle Models examples:

a. Spiral Model

b. The "V" model

c. None of the above

115) Process management leads to:

a. High cost

b. High quality

c. All of the above

116) An initial software development plan usually contains the following:

a. The main risks

b. Estimated duration of the project

c. All of the above

117) Software lifecycle Models examples:

a. Waterfall Model

b. Unified Process Model

c. All of the above

118) Software lifecycle Models examples:

a. The Iterative Enhancement Model

b. The Prototyping Model

c. All of the above

119) Software lifecycle Models examples:

a. Hybrid Cost Estimation

b. Extreme Programming Process Model

c. None of the above

120) Software Process Management usually causes:

a. Cost increase

b. Time delay

c. None of the above