

# MULTIPLE CHOICE QUESTIONS

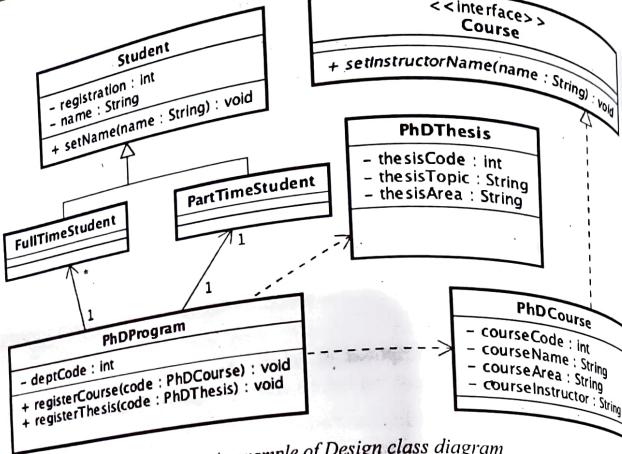


Figure: An example of Design class diagram

## 8.6 OBJECT-ORIENTED DESIGN IMPLEMENTATION

### Mapping designs to code

The interaction diagram and the class diagrams can be used as input to the code generation process. The implementation model is a model which consists of several implementation artifacts such as source code, database definition, HTML pages and so on.

Various object-oriented languages such as java, c++, c#, small talk, python and so on can be used as the languages of implementation. Following are the approaches used for generating code from the design.

### Steps for mapping design to codes

1. CREATING CLASS DEFINITIONS FROM DCDs
2. CREATING METHODS FROM INTERACTION DIAGRAMS
3. CONTAINER/COLLECTION CLASSES IN CODE
4. ORDER OF IMPLEMENTATION
5. EXCEPTIONS AND ERROR HANDLING

1. What are the important characteristics of a good software?
  - A. Software is developed or engineered; it is not manufactured in the classical sense.
  - B. Software doesn't "wear out".
  - C. Software can be custom built or custom build.
  - D. All mentioned above
2. Compilers, Editors software come under which type of software?
  - A. System software
  - B. Application software
  - C. Scientific software
  - D. Bespoke software
3. Software Engineering is defined as systematic, disciplined and quantifiable approach for the development, operation and maintenance of software.
  - A. True
  - B. False
4. What is the full form of RAD Software process model?
  - A. Rapid Application Development.
  - B. Relative Application Design and Development.
  - C. Rapid Application Design.
  - D. Recent Application Development.
5. In software engineering, Software project management \*SPM (contains of a number of activities, which contains \_\_\_\_\_).
  - A. Project planning
  - B. Scope management
  - C. Project estimation
  - D. All mentioned above
6. Which of the following option is not defined in a good Software Requirement Specification (SRS) document?
  - A. Functional Requirement.
  - B. Nonfunctional Requirement.
  - C. Goals of implementation.
  - D. Algorithm for software implementation.
7. Which of the following is the simplest model of software development life cycle?
  - A. Spiral model
  - B. Agile model
  - C. Incremental model
  - D. Waterfall model
8. Which of the following is the understanding of software product limitations, learning system related problems or changes to be done in existing systems beforehand, identifying and addressing the impact of project on organization and personnel etc.?
  - A. Software Specification
  - B. Feasibility Study
  - C. Requirement Elicitation
  - D. System Analysis
9. Which design identifies the software as a system with many components interacting with each other?
  - A. Architectural design
  - B. Low-level design
  - C. Blueprint design
  - D. Both B & C

10. A Software consists of \_\_\_\_\_  
 A. Set of instructions + operating procedures  
 B. Programs + documentation + operating procedures  
 C. Programs + hardware manuals+ cautions  
 D. Only code
11. Which of the following is the most important feature of spiral model in software development lifecycle?  
 A. Code management  
 B. Risk management  
 C. Quality management  
 D. Efficiency management
12. If every requirement stated in the Software Requirement Specification (SRS) has only one interpretation, SRS is said to be correct \_\_\_\_\_.  
 A. Unambiguous  
 B. Consistent  
 C. Verifiable  
 D. Somehow acceptable
13. \_\_\_\_\_ is not a step of Requirement Engineering?  
 A. Requirements elicitation  
 B. Requirements analysis  
 C. Requirements design  
 D. Requirements validation
14. Identify which of the following life cycle contains the phases: test case design, test execution, defect tracking, maintenance.  
 A. Software development lifecycle  
 B. Software testing lifecycle  
 C. Software quality lifecycle  
 D. Software Implementation life cycle
15. Identify the incorrect phase of Software Testing Life cycle?  
 A. Test closure  
 B. Coding  
 C. Requirement analysis  
 D. Test planning
16. What does the RAD software process stand for? And When the RAD model should be completed?  
 A. Rapid Application Development  
 RAD should be completed in < 8 days  
 B. Recent Application Development  
 RAD should be completed in < 8 days  
 C. Rapid Application Development  
 RAD should be completed in > 8 days  
 D. Relative Application Design  
 RAD should be completed > 90 days
17. \_\_\_\_\_ is the first step of SDLC?  
 A. Coding  
 B. Testing  
 C. Preliminary Investigation Analysis  
 D. Maintenance
18. Identify the correct functional requirement.  
 A. Functionality      B. Portability  
 C. Reliability      D. None
19. Total number of phases of RD lifecycle model is-  
 A. 7                    B. 5  
 C. 4                    D. 3
20. For \_\_\_\_\_ reasons, the waterfall model not suitable.  
 A. Small projects  
 B. Toughness projects  
 C. Large Projects  
 D. Accommodating changes
21. \_\_\_\_\_ Model, which does not relate to the Evolutionary Process Model?  
 A. Concurrent Development Model  
 B. WINWIN Spiral Model  
 C. Incremental Model  
 D. All of the above
22. \_\_\_\_\_ is also known as Verification and Validation Model?  
 A. Boehm model  
 B. V-model  
 C. RAD Model  
 D. Extreme Programming
23. Which of the following models will not result in the desired output, when the user participation isn't involved?  
 A. RAD and prototyping  
 B. Spiral and prototyping  
 C. Prototyping and Bigbang  
 D. Spiral and RAD
24. Identify the two dimensions of the spiral model.  
 A. Radial, angular  
 B. Diagonal, triangular  
 C. Diagonal, perpendicular  
 D. Triangular, radial
25. Identify among the following which is not recommended for software processes in software engineering?  
 A. Software verification  
 B. Software testing and validation  
 C. Software designing  
 D. Software evolution
26. Identify the incorrect type of Prototyping model.  
 A. Vertical prototype  
 B. Horizontal prototype  
 C. Diagonal prototype  
 D. Domain prototype
27. Choose the advantage of the Iterative model among the following.  
 A. Simpler to manage  
 B. Divided workload  
 C. Early revenue generation  
 D. All of the above
28. When is the 'risk analysis' in the spiral model performed?  
 A. Only in the first loop  
 B. Before using the spiral model  
 C. Every loop  
 D. The first and last loop
29. The \_\_\_\_\_ is also known as \_\_\_\_\_.  
 A. System requirement specification Document, Black box Specification  
 B. Functional Requirement Document, White box Specification  
 C. System requirement specification document, Grey box specification  
 D. None
30. Identify among the following which is not a type of incremental testing approach.  
 A. Big-bang  
 B. Top-down  
 C. Non-functional incrementation  
 D. Functional incrimination
31. \_\_\_\_\_ option which does not apply to agile software development model?  
 A. Just developing essential work product  
 B. Recent and Relative Application Development  
 C. Abolishing the project planning and testing  
 D. None

32. \_\_\_\_\_ is the correct option, which is involved in the system planning and designing phase of the Software Development Life Cycle (SDLC)?
- Parallel run
  - Sizing
  - Specification freeze
  - All of the above
33. The study of an existing system refers to \_\_\_\_\_.
- Study of UML Diagram
  - Feasibility Study
  - System Analysis
  - System Design
34. \_\_\_\_\_ is the major drawback of RAD model.
- It requires highly skilled developers/designers.
  - It necessitates customer feedbacks.
  - It increases the component reusability.
  - Both (A) & (C)
35. Model selection is based on \_\_\_\_\_.
- Requirements
  - Development team & users
  - Project type & associated risk
  - All of the above
36. \_\_\_\_\_ option is correct.
- The prototyping model facilitates the reusability of components.
  - RAD Model facilitates reusability of components
  - Both RAD & Prototyping Model facilitates reusability of components
  - Prototyping model do not facilitate component reusability.
37. Which of the following models doesn't necessitate defining requirements at the earliest in the lifecycle?
- RAD & V-model
  - Prototyping & Iterative
  - Spiral & Prototyping
  - Spiral & Bigbang
38. Which of the following model will be preferred by a company that is planning to deploy an advanced version of the existing software in the market?
- Boehm model
  - Iterative Enhancement
  - RAD
  - Both (B) and (C)
39. The agile software development model is built based on \_\_\_\_\_ option.
- Linear Development
  - Incremental Development
  - Iterative Development
  - Both Incremental and Iterative Development
40. On \_\_\_\_\_ basis, the plan-driven development different from that of the software development process?
- Based on the iterations that occurred within the activities.
  - Based on the output, which is derived after negotiating in the software development process.
  - Based on the interleaved specification, design, testing, and implementation activities.
  - All of the above
41. \_\_\_\_\_ framework activities are carried out in Adaptive Software Development (ASD)?
- Assumption, Association, Learning
  - The investment, Strategy, Coding
  - Requirements gathering, Adaptive cycle planning, Iterative development
  - Plan, code, test
48. \_\_\_\_\_ is the founder of the spiral model?
- Barry Boehm
  - Roger S. Pressman
  - Gady Booch
  - IBM
49. \_\_\_\_\_ suits the Manifesto for Agile Software Development.
- Customer collaboration
  - Individuals and interactions
  - Working software
  - All of the mentioned
50. Those engineers who develops the quality software should not \_\_\_\_\_.
- Be dependent on their colleagues
  - Maintain integrity and independence in their professional judgment
  - Not knowingly accept work that is outside your competence
  - Not use your technical skills to misuse other people's computers
51. \_\_\_\_\_ is non-functional requirements of software?
- Functionality
  - Performance
  - Supportability
  - All of above
52. Good software design should exhibit \_\_\_\_\_.
- Firmness
  - Commodity
  - Delight
  - All of them
53. Choose the best option that is software design principle?
- Should not suffer from "Tunnel Vision"
  - Not traceable to design model
  - Should not "Reinvent the Wheel"
  - Both (A) and (C)

54. What are the 2 dimension of software design models?
- Process Dimension and Abstraction Dimension
  - Quality Dimension and Abstraction Dimension
  - Process Dimension and Interface Dimension
  - Attribute Dimension and Interface Dimension
55. Which of the following is the fundamental S/W design concepts?
- Abstraction
  - Architecture
  - Both (A) and (B)
  - Low Cohesion and High Coupling
56. Software design defines \_\_\_\_\_.
- Software design is an activity subjected to constraints
  - Software Design satisfies clients changing requirements
  - Software Design specifies the nature and composition of software product
  - All of the above
57. \_\_\_\_\_ solves the Structural design of the software.
- The specification model following the data flow diagram
  - Specification model is a structure chart showing procedure calling hierarchy and flow of data in and out of procedures
  - Emphasizing only on procedural decomposition
  - Emphasizing Algorithmic or Procedural decomposition
58. Which one is false?
- A software design method is an orderly procedure for providing software design solutions
  - A design notation is a symbolic representational system
  - A design heuristic is a rule proceeding guidance, with a guarantee for achieving some end
  - A process is a collection of related tasks that transforms a set of inputs to the set of output
59. Architectural design only meets the system's functional requirement.
- True
  - False
60. A \_\_\_\_\_ view shows the system hardware and how software components are distributed across the processors in the system.
- Physical
  - Logical
  - Virtual
  - Procedure
61. \_\_\_\_\_ is an architectural conflict.
- Using large-grain components improves performance but reduces maintainability
  - Introducing redundant data improves availability but makes security more difficult
  - Localizing safety-related features usually means more communication so degraded performance
  - All of above options.
62. \_\_\_\_\_ is not included in Architectural design decisions?
- Application types
  - System distribution
  - Architectural styles or patterns
  - Testing the system
- Can already established architecture be applied to other products as well?*
- No
  - None of above
  - Might be
  - What describes how a set of interacting components can share data?
- Model-view-controller*
- Debug pattern
  - Shared database or repository pattern
  - Architectural pattern
  - is a type of Architectural Model.
- Static structural model*
- Dynamic process model
  - Distribution model
  - All of the mentioned
  - The advantage of Explicit architecture is \_\_\_\_\_
- Stakeholder communication*
- System Analysis
  - Large scale-reuse
  - All of the mentioned
  - The architecture and system characteristics is \_\_\_\_\_
- Performance*
- Latency
  - Delay
  - Jitter
  - is the system organization style which is widely used today.
- A shared data repository style*
- A shared services and servers style
  - An abstract machine or layered style
  - All of them
  - In repository model, Sub-systems making up a system must exchange information so that they work together effectively. This can be done by:
- Shared data is held in a central database or repository and may be accessed by all sub-systems
  - Each sub-system maintains its own database and passes data explicitly to other sub-systems.
  - Both (A) and (B)
  - None
70. \_\_\_\_\_ is one of the important characteristics of repository model.
- Hassle free to share large amounts of data;
  - Sub-systems need not be concerned with how data is produced Centralised management e.g. backup, security, etc.
  - Sharing model is published as the repository schema.
  - All of them
71. \_\_\_\_\_ is the major components of the client server model?
- A set of servers that offer services to other subsystems such as retrieving content, data management, web contents etc.
  - A set of clients that call on services offered by the servers
  - A network that allows clients to access these services.
  - All of them
72. \_\_\_\_\_ is not included in Architectural design decisions?
- Type of application
  - Distribution of the system
  - Architectural styles
  - Testing the system
73. \_\_\_\_\_ is not real-time architectural patterns that are commonly used.
- Asynchronous communication
  - Observe and React
  - Environmental Control
  - Process Pipeline
74. What kind of investments does organization have in order to make most of by the software architects in their design?
- Skill full peoples
  - Well known frameworks
  - Software tools
  - All of the mentioned

75. Choose the correct option?
- The input of architectural design process is Milestones
  - The output of architectural design process is Blueprint
  - The input of architectural design process is SRS
  - The output of architectural design process is SAD
76. \_\_\_\_\_ steps are followed in architectural design process.
- Analyze SRS
  - Evaluate Candidate Architectures
  - Select architecture and finalize architecture
  - All of the mentioned
77. \_\_\_\_\_ is the content for Software Architecture and Design (SAD)?
- Product Overview
  - Architectural Models
  - Architectural design rationale
  - All of the mentioned
78. \_\_\_\_\_ is a feature of CBSE?
- It increases quality of software
  - CBSE shortens delivery time
  - CBSE increases productivity
  - All of the mentioned
79. A component model defines standards for
- Properties
  - Methods
  - Mechanisms
  - All of the mentioned
80. Which of the following is not an example of component technology?
- EJB
  - COM+
  - .NET
  - None of the mentioned
81. A \_\_\_\_\_ defines a set of standards for components, including interface standards, usage standards, deployment standards.
- CBSE
  - CASE Tools
  - Component model
  - Component interfaces
82. \_\_\_\_\_ is a Reference Model.
- It is a division of functionality together with data flow between the pieces
  - It is a description of component types
  - It is standard decomposition of a known problem into parts that cooperatively solve a problem
  - It is a division of functionality together with data flow between the pieces, It is standard decomposition of a known problem into parts that cooperatively solve a problem
83. \_\_\_\_\_ Reference architecture?
- It is a reference model in which software components are mapped
  - It provided data flow with comments
  - It provides data flow with pieces
  - It is a reference model mapped onto software components & data flow with comments
84. \_\_\_\_\_ is incorrect for Reference model, architectural styles and reference architecture?
- They are not architectures
  - They are useful steps towards an architecture
  - They are set of early design decisions
  - None of the mentioned
85. Which of the following can be considered regarding client and server?
- Client and server is an architectural style
  - Client and server may be considered as an architectural style
  - Client and server is not an architectural style
  - None of the mentioned
86. Which of the statements truly concludes client and server relation with architectural styles?
- They are component types and their coordination is described in terms of protocols that server uses to communicate with each of its clients
  - Multiple client cannot exist at an instance
  - Architecture are countless for client and server but their architectural styles are different
  - All of the mentioned
87. \_\_\_\_\_ is not a design heuristic.
- Evaluate Last iteration to reduce coupling & improve cohesion
  - Minimize structures with high fan-out
  - Keep scope of effect of a module within scope of control of that module
  - Evaluate interfaces to reduce complexity and improve consistency
88. The architecture is not the operational software. Rather, it is a representation that enables a software engineer to:
- Analyze the effectiveness of the design in meeting its stated requirements
  - Consider architectural alternatives at a stage when making design changes is still relatively easy
  - Reduce the risks associated with the construction of the software.
  - All of above
89. \_\_\_\_\_ term describes testing.
- Finding incomplete code
  - Evaluating deliverable to find errors
  - SDLC stage of all projects
  - None of the mentioned
90. \_\_\_\_\_ is also known as Cyclomatic complexity.
- Black box testing
  - White box testing
  - Grey box testing
  - Blue box testing
91. In \_\_\_\_\_ chart, lower and upper limits are present.
- Run chart
  - Bar chart
  - Pie chart
  - PERT chart
92. Maintenance testing is performed using \_\_\_\_\_
- Retesting
  - Integration testing
  - Breadth test and depth test
  - Acceptance testing
93. \_\_\_\_\_ testing is related to the boundary value analysis.
- White box and black box testing
  - White-box testing
  - Black box testing
  - Grey box testing
94. Functional testing is a \_\_\_\_\_?
- Random testing
  - Test level
  - STLC Model
  - Test type
95. What are the different levels of Testing?
- Integration testing
  - Unit testing
  - System testing
  - All of the above

96. Which of the following is not a part of STLC (Software Testing Life Cycle)?  
A. Testing and debugging Planning  
B. Requirement Gathering  
C. Test Design and deploy  
D. Testing closure

97. \_\_\_\_\_ is a Sanity testing.  
A. Test specification  
B. Test Execution Level  
C. Test Implementation Level  
D. Test process level

98. Exhaustive testing can be \_\_\_\_\_.  
A. Practically possible  
B. Impractical but possible  
C. Impractical and impossible  
D. Always possible

99. Black box testing is only functional testing.  
A. True                    B. False  
100. \_\_\_\_\_ techniques is applied for usability testing.  
A. White box            B. Black box  
C. Grey box             D. Yellow box

101. \_\_\_\_\_ are white box testing techniques.  
A. Statement coverage testing  
B. Decision coverage testing  
C. Data flow testing  
D. All of the above

102. In \_\_\_\_\_ environment the Alpha Testing can be performed.  
A. User's end  
B. Developer's end  
C. User's and developer's end  
D. Competitor's end

103. \_\_\_\_\_ is not a part of the Test Plan.  
A. Schedule  
B. Risk Occurrence  
C. Incident reports  
D. Entry and exit criteria

104. \_\_\_\_\_ is the key objective of Integration testing.  
A. Specification Errors  
B. Interface Errors  
C. Validation Errors  
D. Procedure Errors

105. Exploratory testing is a \_\_\_\_\_.  
A. Experience-based Test Design Technique  
B. White as well as black box Test Design Technique  
C. Black Box Test Design Technique  
D. Grey Box as well as white box Test Design Technique

106. White Box techniques are also classified as  
A. Design based testing  
B. Structural testing  
C. Error guessing technique  
D. Graph based technique

107. \_\_\_\_\_ is/are White box technique.  
A. Basis path Testing  
B. Decision tree Testing  
C. Condition Coverage  
D. All of the mentioned

108. \_\_\_\_\_ testing comes under the testing of individual components by the developers.  
A. Integration testing  
B. Validation testing  
C. Unit testing  
D. System testing

109. The testing have been stopped When \_\_\_\_\_.  
A. The faults have been fixed  
B. All the tests run  
C. The time completed  
D. The risk are resolved

110. Which one is the reputed testing standard?  
A. QAI  
B. M Bridge awards  
C. ISO  
D. Microsoft

111. \_\_\_\_\_ testing is performed at first.  
A. Regression testing  
B. Acceptance testing  
C. White box testing  
D. Static testing

112. In \_\_\_\_\_ testing, the code of the program is checked.  
A. Black box testing  
B. White box testing  
C. Acceptance testing  
D. Green box testing

113. \_\_\_\_\_ testing is done without planning and Documentation.  
A. Unit testing  
B. Performance testing  
C. Adhoc testing  
D. Alpha testing

114. Acceptance testing is also known as  
A. Basis path testing  
B. BVA testing  
C. Alpha Testing  
D. Beta testing

115. \_\_\_\_\_ is non-functional testing.  
A. Black box testing  
B. Performance testing  
C. Unit testing  
D. None of the mentioned

116. \_\_\_\_\_ is black box testing.  
A. Decision tree, control structure testing  
B. Boundary value analysis, Equivalence partitioning  
C. Code path analysis, Alpha testing  
D. Control structure, Cause effect graph

117. What is the best time to perform Regression testing?  
A. After the software has been modified  
B. As soon as possible  
C. When the environment has been modified  
D. Both option A & C

118. Does the customer get a 100% bug-free product?  
A. Product is old  
B. Developers are super  
C. The testing team is not good  
D. All of the above

119. \_\_\_\_\_ Test Document is used to define the Exit Criteria of Testing.  
A. Incident Report  
B. Test Summary Report  
C. Debug report  
D. Test Plan

120. \_\_\_\_\_ is not the right approach of Incremental testing approach.  
A. Big bang approach  
B. Top-down approach  
C. Functional incrimination  
D. Bottom-up approach

121. The test levels are performed in \_\_\_\_\_ of the following order.  
A. Unit, Integration, System, Acceptance  
B. It is based on the nature of the project  
C. Unit, Integration, Acceptance, System  
D. Unit, System, Integration, Acceptance

122. What is component testing?  
A. White-box testing  
B. Grey box testing  
C. Black box testing  
D. Both A & C

123. Select the correct defect rate for Six sigma?  
 A. 2.4 defect per million lines of code.  
 B. 3.14 defects per million lines of code.  
 C. 3.04 defects per million lines of code.  
 D. 3.4 million per million lines of code.
124. In \_\_\_\_\_ Defects removal efficiency (DRE) is dependent  
 A. E: errors found before software delivery  
 B. D: defects found after delivery to user  
 C. Both A and B  
 D. B: Bugs found during Lifecycle
125. \_\_\_\_\_ is an indirect measure of product?  
 A. Quality      B. Complexity  
 C. Reliability    D. All of the above
126. \_\_\_\_\_ is not a direct measure of SE process?  
 A. Efficiency    B. Benefit  
 C. Applied Effort D. Investment
127. Function Point Computation is given by the formula  
 A.  $FP = [\text{count total} * 0.65] + 0.01 * \sum(F_i)$   
 B.  $FP = \text{count total} * [0.65 + 0.01 * \sum(F_i)]$   
 C.  $FP = \text{count total} * [0.65 + 0.01] * \sum(F_i)$   
 D.  $FP = [\text{count total} * 0.65 + 0.01] * \sum(F_i)$
128. SMI stands for?  
 A. Software Mature Indicator  
 B. Software Maintenance Index  
 C. Software Maturity Index  
 D. Software Maturity Indication
129. \_\_\_\_\_ is the purpose of project metrics.  
 A. Minimization of project schedule  
 B. To perform design purposes  
 C. Access project quality  
 D. Minimization of development schedule and assessing project quality on ongoing basis
130. Which of the following is an indirect measure of product?  
 A. Quality  
 B. Complexity  
 C. Reliability  
 D. All of the Mentioned
131. In size-oriented metrics, metrics are developed based on the \_\_\_\_\_  
 A. Number of Functions  
 B. Number of user requirement  
 C. Number of lines of code  
 D. Amount of memory usage
132. Which of the following is not an information domain required for determining function point in FPA?  
 A. Number of user requirements  
 B. Number of user Involvement  
 C. Number of external Interfaces  
 D. Number of errors
133. Size and Complexity are a part of  
 A. Product Metrics B. Process Metrics  
 C. Project Metrics D. People Metrics
134. Number of errors found per person hours expended is an example of a  
 A. Measurement B. Measure  
 C. Metric        D. Quantity
135. By \_\_\_\_\_ reason, the software is delivered late.  
 A. Changing customer requirements frequently.  
 B. Technical difficulties that came during the development of the product  
 C. Human difficulties that could not have been foreseen in advance  
 D. All of the mentioned
136. Which of the following is an activity that distributes estimated effort across the planned project duration by allocating the effort to specific software engineering tasks?  
 A. Software Macroscopic schedule  
 B. Software Project scheduling  
 C. Software Detailed schedule  
 D. Software Quality schedule
142. Which of the following uses empirically derived formulas to predict effort as a function of LOC or FP?  
 A. FP-Based Estimation  
 B. Process-Based Estimation  
 C. COCOMO  
 D. Both FP-Based Estimation and COCOMO
143. COCOMO stands for  
 A. Constructive cost model  
 B. Comprehensive cost model  
 C. Constructive cost estimation model  
 D. Cooperative cost estimation model
144. Which version of COCOMO states that once requirements have been stabilized, the basic software architecture has been established?  
 A. Early design stage model  
 B. Late design stage model  
 C. Application development model  
 D. All of the mentioned
145. Which model was used during the early stages of software engineering, when prototyping of user interfaces, consideration of software and system interaction, assessment of performance, and evaluation of technology maturity were paramount?  
 A. Early design stage model  
 B. Post-architecture-stage model  
 C. Application composition model  
 D. All of the mentioned
146. Which one is not a size measure for software product?  
 A. LOC  
 B. Halstead's program length  
 C. Function Count  
 D. Cyclomatic Complexity

147. COCOMO was developed initially by

- A. B. Beizer
- B. Roger S. Pressman
- C. B.W. Boehm
- D. Gregg Rothermel

148. \_\_\_\_\_ is not included in failure costs.

- A. Rework
- B. Repair
- C. Failure mode analysis
- D. None of the mentioned

149. \_\_\_\_\_ requirements are the foundation from which quality is measured.

- A. Hardware
- B. Software
- C. Programmers
- D. None of the mentioned

150. Which of the following is not a SQA plan for a project?

- A. Evaluations to be performed
- B. Amount of technical work
- C. Audits and reviews to be performed
- D. Documents to be produced by the SQA group

151. Degree to which design specifications are followed in manufacturing the product is called

- A. Quality Control
- B. Quality of conformance
- C. Quality Assurance
- D. Quality confirmed

152. \_\_\_\_\_ is not included in External failure costs.

- A. Testing
- B. Technical support
- C. Warranty work
- D. Complaint resolution

153. Which option is not true about SQA...?

- A. Audits and reviews to be performed by the team
- B. Amount of technical work to be performed
- C. Evaluations to be performed
- D. Documents that are produced by the SQA team.

154. \_\_\_\_\_ is not an appraisal cost in SQA.

- A. Inter-process inspection
- B. Maintenance
- C. Quality planning
- D. Testing

155. \_\_\_\_\_ identifies, documents, and verifies that corrections have been made to the software?

- A. Project leader
- B. Project team
- C. SQA group
- D. Trainer

156. Quality Management in software engineering is also known as

- A. SQA
- B. SQM
- C. SQI
- D. SQA and SQM

157. Quality in software can be looked at in terms of user satisfaction which includes

- A. A compliant product
- B. Good quality output
- C. Delivery within budget and schedule
- D. All of the mentioned

158. According to Pareto's principle, \_\_\_\_\_ % of defects can be traced to \_\_\_\_\_ % of all causes.

- A. 60, 40
- B. 70, 30
- C. 80, 20
- D. 20, 80

159. Which of the following is not an appraisal cost in SQA?

- A. Inter-process inspection
- B. Maintenance
- C. Quality planning
- D. Testing

160. SQA group \_\_\_\_\_ that corrections have been made to the software?

- A. Identifies
- B. Documents
- C. Verifies
- D. All of the mentioned

161. \_\_\_\_\_ is involved in Statistical quality assurance.

- A. Using sampling in place of exhaustive testing of software
- B. Surveying customers to find out their opinions about product quality
- C. Tracing each defect to its underlying cause, isolating the "vital few" causes, and moving to correct them
- D. Tracing each defect to its underlying causes and using the Pareto principle to correct each problem found

162. A quality assurance system may be defined as the,

- A. Organizational structure
- B. Responsibilities, procedures, processes
- C. Resources for implementing quality management
- D. All of the mentioned above

163. Statistical quality assurance reflects a growing trend throughout the industry to become more quantitative about quality.

- A. True
- B. False

164. \_\_\_\_\_ implies in, Statistical quality assurance.

- A. Information about software errors and defects is collected and categorized
- B. An attempt is made to trace each error and defect to its underlying cause
- C. Uses the Pareto principle
- D. All of the mentioned above

165. \_\_\_\_\_ for Software Engineering is the most widely used strategy for statistical quality assurance in industry.

- A. Six Sigma
- B. Two Sigma
- C. Four Sigma
- D. Five sigma

166. According to ISO 9001, inspection and testing comes under \_\_\_\_\_ management responsibility

- A. Process control
- B. Framework control
- C. Control of nonconforming products
- D. Project control

167. \_\_\_\_\_ is the latest ISO 9001 version in the ISO 9000 family.

- A. ISO 9001:1996
- B. ISO 9001:2002
- C. ISO 9001:2009
- D. ISO 9001:2015

168. Which of the following represents India in ISO?

- A. PFRDA
- B. FDDI
- C. BIS
- D. BCCI

169. \_\_\_\_\_ is/are the advantage(s) of using the ISO 9001 standard.

- A. Organizing processes
- B. Improving the efficiency of processes
- C. Continuous improvement
- D. Organizing processes, improving the efficiency of processes, and continuous improvement

170. Which is the only standard in the ISO 9000 family to which organizations can certify?

- A. ISO 9000
- B. ISO 9001
- C. ISO 16000
- D. ISO 9007

171. Which ISO standard provides guidelines for auditing management systems?

- A. ISO 19011:2018
- B. ISO 9011:2015
- C. ISO 9001:2015
- D. ISO 9000:2018

172. \_\_\_\_\_ ISO standard provides guidance to achieve sustained success and the continuous improvement of an organization.
- ISO 1901:2018
  - ISO 9000:2015
  - ISO 9001:2019
  - ISO 9004:2018
173. \_\_\_\_\_ is not a quality management principle on the basis of which ISO 9000:2015 and ISO 9001:2015 are based on.
- Customer focus
  - Leadership
  - Customer dissatisfaction
  - Evidence based decision making
174. Six Sigma methodology defines three core steps.
- Analyze, improve, control
  - Analyze, validate, verify
  - Define, measure, analyze
  - Define, metric, control
175. \_\_\_\_\_ is Six Sigma.
- It is the most widely used strategy for statistical quality assurance
  - The "Six Sigma" refers to six standard deviations
  - It is the most widely used strategy for statistical quality assurance AND The "Six Sigma" refers to six standard deviations
  - A Formal Technical Review (FTR) guideline for quality walkthrough or inspection
176. The primary objective of formal technical reviews is to find \_\_\_\_\_ during the process so that they do not become defects after release of the software.
- Errors
  - Equivalent faults
  - Failure reason
  - Cost vs benefit
177. An informal review may consist of
- Casual meeting
  - Correction
  - Inspection
  - Pair programming
178. \_\_\_\_\_ are objectives for FTR.
- Allow senior staff members to correct errors
  - Assess programmer productivity
  - Determining who introduced an error into a program
  - Uncover errors in software work products
179. Review summary report answers \_\_\_\_\_.
- Terminate project, Replace producer, Request a time extension
  - What defects were found, What caused defects, Who was responsible
  - What was reviewed, Who reviewed it, What were the findings
  - None of the given options
180. What complements the formal technical review by assessing a configuration object for characteristics that are generally not considered during review?
- Software configuration audit
  - Software configuration process
  - Baseline
  - Software configuration integration
181. \_\_\_\_\_ is the use of CMMI.
- Decreases risks in software
  - Encouraging a productive
  - Streamlines process improvement
  - All of the mentioned above
182. The CMMI was developed to combine multiple \_\_\_\_\_ into one framework.
- Meta model
  - Business maturity models
  - Bootstrap
  - Data model
- CMMI's Maturity Levels  
are defined in a process meta-model.  
1. Eight  
2. Five  
3. CMMI is the successor to CMM and combines a number of maturity models;  
4. PSP and TSP  
5. A. True  
B. False  
6. CMMI helps to solve the \_\_\_\_\_ by defining a set of practices.  
7. A. PSP and TSP  
8. B. Maturity problem  
9. C. People CMM  
10. D. All of the above  
11. CMM reference model are known as \_\_\_\_\_.  
12. A. Software CMM  
13. B. People CMM  
14. C. Systems Engineering CMM  
15. D. All of the mentioned above  
16. When we say that the XYZ organization is CMMI Level 5 company, we describe its stage by \_\_\_\_\_.  
17. A. Verified  
18. B. Optimized  
19. C. Insured  
20. D. Managed  
21. Abbreviation of the term CMMI is \_\_\_\_\_.  
22. A. Maturity Model Integration  
23. B. Material Maturity Integration  
24. C. Manual Model Integration  
25. D. Maturity Modification integration  
26. Which is a software configuration management concept that helps us to control change without seriously impeding justifiable change?  
27. A. Baselines  
28. B. Source code  
29. C. Object model  
30. D. Meta model
190. Software Configuration Management can be administered in several ways. These include
- A single software configuration management team for the whole organization
  - A separate configuration management team for each project
  - Software Configuration Management distributed among the project members
  - None of the mentioned
191. \_\_\_\_\_ combines procedures and tools to manage different versions of configuration objects that are created during the software process.
- Change control
  - Version control
  - Error control
  - Iteration control
192. What complements the formal technical review by assessing a configuration object for characteristics that are generally not considered during review?
- Software configuration audit
  - Change management
  - Baseline
  - Software configuration process
193. The Software Configuration Management (SCM) is called the umbrella activity.
- False
  - True
194. \_\_\_\_\_ is the main aim of Software Configuration Management.
- Identify change
  - Control change
  - To ensure that the change is being properly implemented
  - All of these

195. \_\_\_\_\_ is not tracked by configuration management tools.
- A. Tracking of change proposals
  - B. Storing versions of system components
  - C. Tracking the releases of system versions to customers
  - D. None of the mentioned

196. \_\_\_\_\_ is not a Software Configuration Management Activity.
- A. Configuration item identification
  - B. Risk management
  - C. Release management
  - D. Branch management

197. The definition and use of configuration management standards is essential for quality certification in
- A. ISO 9000
  - B. CMM
  - C. CMMI
  - D. All of the mentioned

198. \_\_\_\_\_ involves preparing software for external release and keeping track of the system versions that have been released for customer use.
- A. Error Management
  - B. Release management
  - C. Change management
  - D. Configuration management

199. Which of the following term is best defined by the statement "The creation of a new codeline from a version in an existing codeline"?
- A. Branching
  - B. Merging
  - C. Validating
  - D. Verifying

200. \_\_\_\_\_ is a part of system release.
- A. Electronic and paper documentation describing the system
  - B. Packaging and associated publicity that have been designed for that release
  - C. An installation program that is used to help install the system on target hardware
  - D. All of the mentioned

201. \_\_\_\_\_ process is concerned with analyzing the costs and benefits of proposed changes.
- A. Change management
  - B. Version management
  - C. Code management
  - D. Iteration management

202. \_\_\_\_\_ is not a Version management feature.
- A. Version and release identification
  - B. Build script generation
  - C. Project support
  - D. Change history recording

203. What combines procedures and tools to manage different versions of configuration objects that are created during the software process?

- A. Auditing
- B. Change control
- C. Version control
- D. Error control

204. The primary purpose of configuration status reporting (CSR)/ status accounting is to

- A. Evaluate the performance of software developers.
- B. Make sure that change information is communicated among all people involved.
- C. Make sure that the third-party control is implemented.
- D. All of the above.

205. A release is not just an executable program or set of programs which usually includes.

- i) System files which are needed for successful system operation.
  - ii) Electronic and paper document describing the system
  - iii) Configuration files defining how the release should be configured for particular installations.
- A. i and ii only
  - B. ii and iii only
  - C. i and iii only
  - D. All i, ii and iii

206. The first stage in the change management process is to complete

- A. Change request form
- B. Change assessment
- C. Change costing
- D. Change control board

207. The configuration management plan should include which of the following information.

- i) The definition of what entities are to be managed and formal scheme for identifying these entities.
- ii) A description of the records of the configuration management process which should be maintained.
- iii) The configuration management policies, which are used for, change control and version management.

- A. i and ii only
- B. ii and iii only
- C. i and iii only
- D. All i, ii and iii

208. Which of the following process ensures that versions of systems and components are recorded and maintained?
- A. Codeline
  - B. Configuration control
  - C. Version
  - D. Workspace

209. Which of the following process is concerned with analyzing the costs and benefits of proposed changes?
- A. Change management
  - B. Version management
  - C. System building
  - D. Release management

210. \_\_\_\_\_ is not a Version management feature.

- A. Version and release identification
- B. Build script generation
- C. Project support
- D. Change history recording

211. \_\_\_\_\_ method recommends that very frequent system builds should be carried out with automated testing to discover software problems.

- A. Agile method
- B. Parallel compilation method
- C. Large systems method
- D. All of the mentioned

212. \_\_\_\_\_ is not a build system feature.

- A. Minimal recompilation
- B. Documentation generation
- C. Storage management
- D. Reporting

213. \_\_\_\_\_ is a collection of component versions that make up a system.

- A. Version
- B. Codeline
- C. Baseline
- D. Change management

214. \_\_\_\_\_ is a configuration item.

- A. Design & Test specification
- B. Source code
- C. Log information
- D. All of the mentioned

215. \_\_\_\_\_ is a part of system release.

- A. Electronic and paper documentation describing the system
- B. Packaging and associated publicity that have been designed for that release
- C. An installation program that is used to help install the system on target hardware
- D. All of the mentioned

216. A sequence of baselines representing different versions of a system is known as

- A. System Modification
- B. Mainline
- C. Software Configuration Item (SCI)
- D. Baseline

217. Which of the following term is best defined by the statement "The creation of a new codeline from a version in an existing codeline"?

- A. Branching
- B. Merging
- C. Codeline
- D. Mainline

218. Consider a condition, in which one use case elaborates its functionality with others, such relationship is called \_\_\_\_\_

- A. Is a
- B. Extend
- C. Include
- D. Has a

219. The statement \_\_\_\_\_ is true in context of use case.

- A. Use case diagram is a dynamic model of interaction between actors and product in a use case
- B. Use case Description is a static model of use case supported by a product
- C. All of the mentioned
- D. None of the mentioned

220. \_\_\_\_\_ is the purpose of use case modelling.

- A. To decide and describe the functional requirements of the system
- B. To give clear and consistent description of what the system should do
- C. To provide a basis for performing tests that verify the system
- D. To provide the ability to trace functional requirements into classes and operations
- E. All of above

221. Use Cases are described using both text documents and diagrams

- A. False
- B. True

222. Use-case modelling is primarily an act of writing text NOT just drawing diagrams

- A. True
- B. False

223. \_\_\_\_\_ is the characteristics of use cases

- A. Is always initiated by an actor
- B. Provides tangible value to an actor (observable not necessarily salient)
- C. Is complete - use case is not complete until an end value is produced even if several communications occur along the way
- D. All of above

224. Which descriptions are true for the use case description format?

- A. Underline text refers to another use case
- B. Extensions section uses complicated numbering scheme
- C. Indentation is used in order to make extensions easier to read
- D. All of the mentioned

225. \_\_\_\_\_ are the methods in which use case descriptions can be written.

- A. Actors in a use case are almost always stakeholders
- B. Before statement begins, preconditions must be true.
- C. Need list should be reviewed when writing each use case
- D. All of the mentioned

226. In use case driven iterative development, \_\_\_\_\_ steps are included.

- A. At each iteration, one or more use cases are selected for implementation
- B. Iteration should be followed until the system is complete
- C. Iterative development builds system functionality gradually through analysis, design, coding, testing and evaluation
- D. All of the mentioned

227. Use case description contents

- A. Use case name and number
- B. Actors include primary and secondary
- C. Stakeholder and needs
- D. All of the mentioned

228. \_\_\_\_\_ is the type of use cases.

- A. High level use case (Brief)
- B. Expanded use case (fully dressed)
- C. Essential use case (Black box)
- D. Concrete use case (white box)
- E. All of above

229. The object-oriented software development life cycle (SDLC) consists of which macro processes:

- A. Object-oriented analysis
- B. Object-oriented design
- C. Object-oriented implementation
- D. All of above

230. Object oriented systems development includes which activities?

- A. Object-oriented analysis – use-case driven
- B. Object-oriented design
- C. Prototyping
- D. Component-based development
- E. Incremental testing
- F. All of above

231. Unified Modelling Language is used to draw \_\_\_\_\_ types of diagrams

- A. 4
- B. 9
- C. 8
- D. 5

232. \_\_\_\_\_ UML diagram specifies sequences or steps of operations to be performed.

- A. Activity diagram
- B. Use case diagram
- C. Class diagram
- D. E-R case diagram

233. The use case diagram

- A. Tells about the functional decomposition of a system
- B. Contains the classes and objects
- C. Specifies who performs which tasks with a system that is going to be developed
- D. Models the time flow within a system

234. \_\_\_\_\_ is the purpose of Use Case diagram.

- A. To decompose the system functionally
- B. To identify the functional requirements
- C. To define sequences of actions
- D. To identify multiplicities and associations

235. \_\_\_\_\_ can be heuristic for Use case diagram.

- A. Never name actors with noun phrases
- B. Name Use cases with verb phrases
- C. The product can be made actor
- D. All of the mentioned

236. \_\_\_\_\_ relationship is not used in use case diagram?

- A. Include
- B. Exclude
- C. Extend
- D. Uses

237. A use case diagram of a same particular system can contain different number of use cases and different use case name if designed by different people.

- A. True
- B. False

238. Who consider diagrams as a type of Class diagram, component diagram, object diagram, and deployment diagram?

- A. Structural
- B. Behavioral
- C. Non-behavioral
- D. Non structural

239. \_\_\_\_\_ are Weak entities are represented in UML diagrams by using aggregations.

- A. Qualified
- B. Qualified or non-qualified
- C. Non-qualified
- D. None of above

240. \_\_\_\_\_ represented by In UML diagrams, relationship between component parts and object.

- A. Ordination      B. Aggregation
- C. Segregation     D. Increment

241. Which type they considered Activity diagram, use case diagram, collaboration diagram, and sequence diagram?

- A. Non-behavioral
- B. Non-structural
- C. Structural
- D. Behavioral

242. \_\_\_\_\_ diagram is used to show interactions between messages are classified as:

- A. Activity
- B. Component
- C. Collaboration
- D. Object lifeline

243. \_\_\_\_\_ diagrams are used to distribute files, libraries, and tables across topology of the hardware

- A. Deployment
- B. Use case
- C. Sequence
- D. System sequence

244. \_\_\_\_\_ diagram that helps to show Dynamic aspects related to a system

- A. System sequence
- B. Interaction
- C. Class
- D. Use case

245. Simple name in UML Class and objects consist of \_\_\_\_\_.

- A. Letters
- B. Punctuation Characters
- C. Digits
- D. All of the mentioned

246. Which of the following Composite name consists of in a UML Class and object diagram?

- A. Digits
- B. Simple names
- C. Delimiter
- D. All of the mentioned

247. Which of these abstractions class consist?

- A. Set of the objects
- B. Attributes
- C. Operations
- D. All of the mentioned

248. \_\_\_\_\_ compartments divided in class?

- A. Name
- B. Attribute
- C. Operation
- D. All of the mentioned

249. \_\_\_\_\_ attribute is a data item held by

- A. Class
- B. Object
- C. All of the mentioned
- D. None of the mentioned

250. Mentioned as \_\_\_\_\_ attributes for conceptual modelling?

- A. Names
- B. Initial Values
- C. All of the mentioned
- D. None of the mentioned

251. An operation can be described as \_\_\_\_\_.

- A. Object
- B. Class
- C. Pointer
- D. Object & Class

252. \_\_\_\_\_ are part of the class operation specification format.

- A. Parameter list
- B. Name
- C. Return-type list
- D. All of the mentioned

253. \_\_\_\_\_ among the optional statement is true.

- A. Associations may also correspond between instances of three
- B. Association lines may be unlabeled
- C. All of the mentioned
- D. None of the mentioned

254. Multiplicity for an association \_\_\_\_\_.

- A. Association is the number of instances with a single instance
- B. Association is the number of instances with a number instance
- C. All of the mentioned
- D. None of the mentioned

255. To form Class diagram, these are the rules to be considered \_\_\_\_\_.

- A. Class symbols least a name compartment
- B. The compartment can be in random order
- C. Attributes and operations can be listed
- D. Methods should be overloaded

256. \_\_\_\_\_ are the heuristics.

- A. Name classes attributes with noun phrases
- B. Name operations with verb phrases
- C. Stick to binary associations
- D. All of the mentioned

257. An object symbol is divided into \_\_\_\_\_ part of compartment.

- A. Bottom
- B. Top
- C. All of the mentioned
- D. None of the mentioned

258. \_\_\_\_\_ diagram is time-oriented?

- A. Activity
- B. Sequence
- C. Collaboration
- D. None of the mentioned

259. \_\_\_\_\_ term are combined Interaction Diagram?

- A. Sequence Diagram + Collaboration Diagram
- B. Activity Diagram + Class Diagram
- C. Deployment Diagram + Component Diagram
- D. Class Diagram + Object Diagram

260. \_\_\_\_\_ diagrams emphasize the things present system being modeled.

- A. Behavioral
- B. Structure
- C. Grouping
- D. Annotation

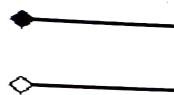
261. \_\_\_\_\_ diagram in UML shows a complete of a modeled system at a specific time.

- A. Activity
- B. Interaction
- C. Class
- D. Object

262. \_\_\_\_\_ UML diagrams has a static view.

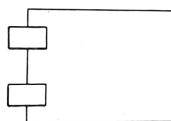
- A. Collaboration
- B. Use case
- C. State chart
- D. Activity

263. What type of core-relationship is represented by the symbol in the figure below?



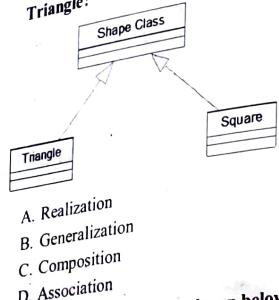
- A. Aggregation
- B. Composition
- C. Generalization
- D. Association

264. Which core element of UML is being shown in the figure?

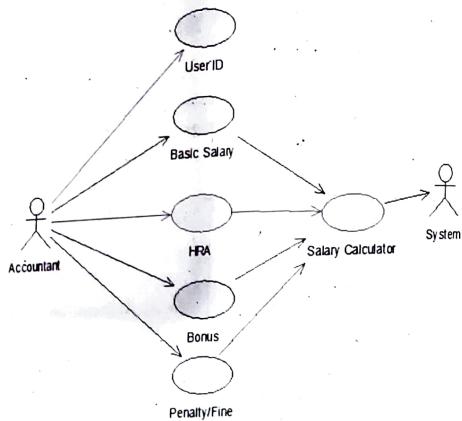


- A. Node
- B. Package
- C. Deployment
- D. Component

265. What type of relationship is represented by Shape class and Triangle?



268. Which UML diagram is shown below?



- A. Use Case
- B. Component Diagram
- C. Class Diagram
- D. Object Diagram

269. UML diagram that facilitates requirements gathering and interacts between system and external users, is called as

- A. Data flow diagram
- B. Use case diagram
- C. Object diagram
- D. Class diagram

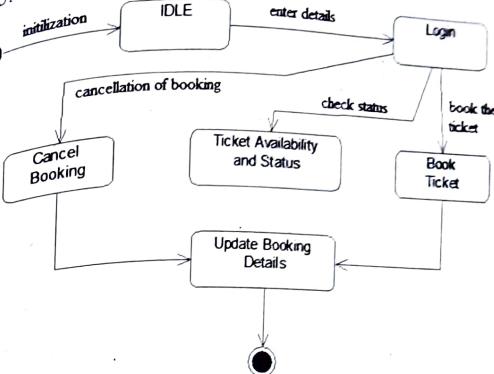
266. \_\_\_\_\_ diagram in UML shows a complete or partial view of the structure of a modeled system at a specific time

- A. System Sequence Diagram
- B. Collaboration Diagram
- C. Class Diagram
- D. Object Diagram

267. << actor >> notation is used to denote \_\_\_\_\_

- A. Database
- B. Subsystem
- C. Non-human actor
- D. All of the mentioned

270. Which UML diagram is shown below?

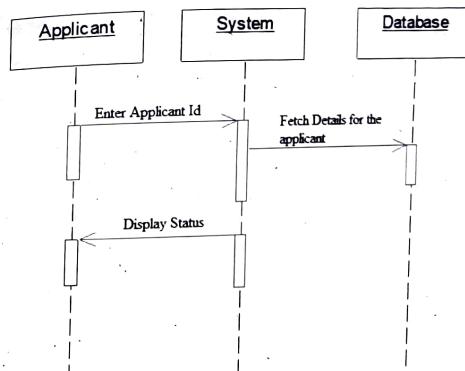


- A. Use Case diagram
- B. State Chart diagram
- C. Sequence diagram
- D. Object Diagram

271. Class diagrams are not useful to \_\_\_\_\_

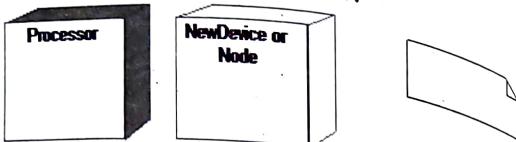
- A. Model simple collaborations
- B. Model the vocabulary of a system
- C. Model simple interactions
- D. Model a logical database schema

272. Which UML diagram is shown below?

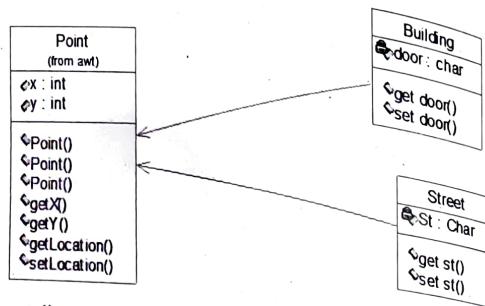


- A. System Sequence Diagram
- B. Collaboration Diagram
- C. Sequence Diagram
- D. Object Diagram

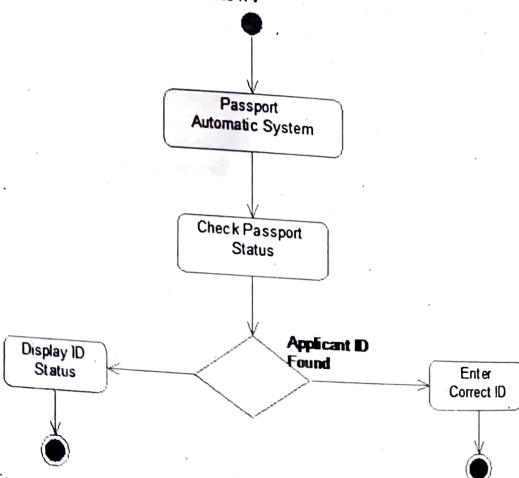
273. Which UML diagram's symbols are shown below?



- A. Deployment diagram  
C. Component Diagram  
B. State chart Diagram  
D. Object Diagram
274. Which UML diagram is shown below?

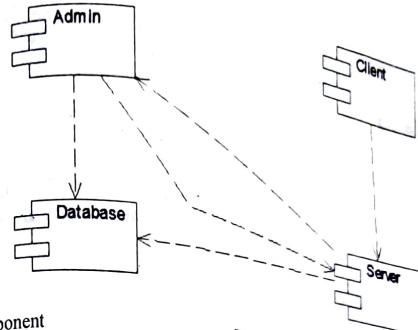


- A. Component diagram  
C. Object Diagram  
B. Interaction Diagram  
D. Class Diagram
275. Which UML diagram is shown below?



- A. Activity  
C. System sequence  
B. State chart  
D. Collaboration

276. Which UML diagram is shown below?



- A. Component  
C. Activity  
B. Deployment  
D. DFD

277. Which relationship exists between instances of Company and Person class in this statement "Nepal Engineering Council takes Engineering Licensing Exam"

- A. Association      B. Inheritance  
C. Realization      D. Class

278. \_\_\_\_\_ are graphical representations of workflows of stepwise activities and actions with support for choice, iteration and concurrency. It describes the flow of control of the target system, such as the exploring complex business rules and operations, describing the use case also the business process.

- A. Activity Diagram  
B. Profile Diagram  
C. Object Diagram  
D. Class Diagram

279. Inheritance relation between two classes can be described as \_\_\_\_\_

- A. Encapsulation.  
B. Aggregation of information.  
C. Generalization and Specialization.  
D. Polymorphism

280. What does UML mean?

- A. United Modelling Language  
B. Unified Modelling Language  
C. Unified Models Linguistic  
D. Universal Modelling Language

281. The vertical dimension of a sequence diagram shows \_\_\_\_\_

- A. Abstract      B. Line  
C. Time      D. Messages

282. The time-oriented diagram include \_\_\_\_\_

- A. Sequence      B. Classes  
C. Activity      D. Objects

283. Use cases are represented as \_\_\_\_\_

- A. Ellipses      B. Oval  
C. Triangle      D. Rectangle

284. Dependency models the \_\_\_\_\_ relationship

- A. has-a      B. is-a  
C. uses-a      D. contained-by

285. Aggregation models the \_\_\_\_\_ relationship

- A. has-a      B. is-a  
C. uses-a      D. contained-by

286. A link is an instance of \_\_\_\_\_  
A. Generalization    B. Association  
C. Realization    D. Aggregation

287. Associations \_\_\_\_\_  
A. May exist only between actors and use cases  
B. Identify the flow of data between actors and use cases  
C. Identify interactions between actors and use cases  
D. Identify dependencies between actors and use cases

288. The association stereotype «Extends» indicates \_\_\_\_\_  
A. Delegation of part of a task to another use case  
B. The target use case is a sub process of the source use cases  
C. A specialized form of a use case  
D. A deviation from the UML standard

289. A \_\_\_\_\_ is a relationship between two states indicating that an object in the first will enter the second state.  
A. Transition    B. State  
C. Association    D. Generalization

290. A state that has sub states, that is nested states, is called \_\_\_\_\_  
A. Composite-State  
B. Source State  
C. Destination State  
D. Null State

291. \_\_\_\_\_ is the state that is active after completion of the transition.  
A. Multiple state    B. Null state  
C. Target state    D. Source state

292. Which of the following is used to model the life time of an object?  
A. Use Case    B. Class  
C. Deployment    D. State Machine

293. Consider the following sentence: "A square is a polygon". Which of the relations between the two classes Square and Polygon

- A. Inheritance
- B. Aggregation
- C. Composition
- D. Association

294. When using an informal (natural language) description of a programming problem, which parts of the description are likely represent objects?  
A. All of the nouns and some of the verbs  
B. All of the verbs and some of the nouns  
C. Some of the nouns  
D. Some of the verbs

295. An operation can be described as  
A. Object  
B. Class  
C. Object and Class Behaviour  
D. None of the mentioned

296. A tagged value extends the \_\_\_\_\_ of a UML building block.  
A. Vocabulary  
B. Properties  
C. Semantic  
D. Definition

297. A \_\_\_\_\_ allow us to you to create new kind of building blocks derived from existing one.

- A. Tagged Value
- B. Stereotype
- C. Interface
- D. Class

298. \_\_\_\_\_ diagrams are used to illustrate data structures, and the static snapshots instances of the things found in the class diagrams.

- A. Use case
- B. Activity
- C. Class
- D. Object

299. Which one of the following class relations is indicated among the classes in the following statement: "A course is the prerequisite of many courses and has many courses as its prerequisite."

- A. N-ary association
- B. Self-association
- C. Binary association
- D. Aggregation

300. What is multiplicity for an association

- A. The multiplicity at the target class end of an association is the number of instances that can be associated with a single instance of source class
- B. The multiplicity at the target class end of an association is the number of instances that can be associated with a number instance of source class
- C. The multiplicity at the target class end of an association is the attributes and operations
- D. The multiplicity at the target class end of an association is only the attributes

301. Students will be allocated to one department at least but cannot be allocated to more than 3 departments. Identify the cardinality between Department and Student

- A. Department: 1 and Student: 1..\*
- B. Department: \* and Student: 1..\*
- C. Department: 1..3 and Student: \*
- D. Department: \* and Student: \*

302. Which one of the following best characterizes a sequence diagram?

- A. A tree illustrating inheritance relationship between classes
- B. A call graph illustrating all possible sequences of calls between class method members
- C. A time-line illustrating a typical sequence of calls between object methods
- D. A time-line illustrating the changes in inheritance and instantiation relationships between classes and objects over time

303. \_\_\_\_\_ diagram helps to show dynamic aspects related to a system.  
A. Object    B. Deployment  
C. Class    D. Interaction

304. If you are working on real-time process control applications or systems that involve concurrent processing, you would use a \_\_\_\_\_

- A. State Diagram
- B. Class Diagram
- C. Activity Diagram
- D. Object Diagram

305. "Book has pages". In this sentence what is relation between book and page classes?

- A. Inheritance
- B. Aggregation
- C. Composition
- D. Association

306. How guard condition is represented in sequence diagram

- A. Using ()
- B. Using []
- C. Using keyword condition
- D. None of the mentioned

307. Bulls eye is use to denote \_\_\_\_\_

- A. Start state
- B. Concurrent state
- C. End state
- D. None of the above

308. \_\_\_\_\_ shows a set of objects and their relationships.

- A. Class diagram
- B. Object diagram
- C. Use case diagram
- D. Collaboration diagram

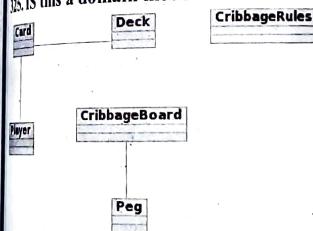
309. A collaboration diagram depicts which one of the following types of information?

- A. Structural information such as class association
- B. The looping structure
- C. The decision structure among the classes
- D. The attribute values of the objects

310. Because of \_\_\_\_\_ reason the inheritance useful.
- It prevents inherited properties from being lost
  - It minimizes the amount of code which has to be written
  - It creates elegant tree structures in the class model
  - It divides objects up into useful classes
311. \_\_\_\_\_ characteristics of a class implies that the same message can be interpreted by it differently.
- Polymorphism
  - Overloading
  - Overriding
  - Inheritance
312. Consider the statement: "Test can be Objective or Subjective." Assuming that Test and Subjective are two classes, what can be said about the relationship between these two classes?
- Aggregation
  - Composition
  - Generalization – specialization
  - Polymorphism
313. Login credentials are validated by system. Which relationship exists among login and validation use cases-
- Login include Validation
  - Validation include Login
  - Login extend Validation
  - Validation extend Login
314. "Payment can be done through Credit Card or Debit Card". In this relation payment is consider as \_\_\_\_\_
- Base uses case
  - Extension point
  - Inclusion
  - None of the above

315. "Students work on project and evaluate function is consider at \_\_\_\_\_ evaluated." In this evaluating function is consider at \_\_\_\_\_
- Project class
  - Student class
  - Association class of "works on"
  - Evaluation class
316. Solid circle is considering as start state only when \_\_\_\_\_
- Previous states are not known
  - Idle state is not present
  - It is optional
  - None of the above
317. Merge (Hollow diamond) is use to
- Split a single incoming flow into multiple concurrent flows
  - Bring together multiple flows that are not concurrent
  - Interrupt the flow denoted with a lightning bolt
  - Group related activities into one column
318. The vertical line in activity diagram represents
- Decision and branching
  - Synchronization
  - Time event
  - Swim lanes
319. The vertical line in sequence diagram represents \_\_\_\_\_
- Time line of object
  - Synchronization
  - Swim lanes
  - End of life
320. \_\_\_\_\_ is a crucial software development activity for both Software Engineering and Knowledge Engineering.
- Conceptual modeling
  - Visibility modeling
  - System Modeling
  - Behavior Modeling

327. \_\_\_\_\_ are the sequence of steps for conceptual process.
- Add Attributes
  - Add Classes
  - Add Association
  - All of the mentioned
328. \_\_\_\_\_ is the third step in sequence for conceptual class modelling.
- Adding Class
  - Adding Association
  - Adding Attribute
  - None of the mentioned
329. The method of design encompassing the process of object oriented decomposition and a notation for depicting both logical and physical and as well as static and dynamic models of the system under design is known as:
- Object- Oriented Programming
  - Object- Oriented Design
  - Object- Oriented Analysis
  - None of the mentioned
330. What is the programming style of the object-oriented conceptual model?
- Invariant relationships
  - Algorithms
  - Classes and objects
  - Goals, often expressed in a predicate calculus.
331. The essential characteristics of an object that distinguish it from all other kinds of objects and thus provide crisply defined conceptual boundaries, relative to the perspective of the viewer is called:
- Encapsulation
  - Modularity
  - Hierarchy
  - Abstraction



A. Yes      B. No

326. Conceptual modelling represents \_\_\_\_\_
- Responsibility
  - Attributes
  - Important relationships between them
  - All of the mentioned

- 332. Abstraction is classified into \_\_\_\_\_ types**
- A. 4
  - B. 3
  - C. 2
  - D. 1
- 333. The process of compartmentalizing the elements of an abstraction that constitute its structure and behavior is called as**
- A. Hierarchy
  - B. Encapsulation
  - C. Modularity
  - D. Entity Abstraction
- 334. Single inheritance, Multiple inheritance, and Aggregation comes under**
- A. Modularity
  - B. Typing
  - C. Hierarchy
  - D. None of the mentioned
- 335. In which of the following mechanisms, types of all variables and expressions are fixed at compilation time.**
- A. Strong Typing
  - B. Weak Typing
  - C. Static Binding/ early binding
  - D. Dynamic Binding/ late binding
- 336. In which of the following mechanisms, types of all variables and expressions are not known until runtime**
- A. Strong Typing
  - B. Weak Typing
  - C. Static Binding/ early binding
  - D. Dynamic Binding/ late binding
- 337. Which of the following statements about Persistence is correct?**
- A. It is the enforcement of the class of an object, such that objects of different types may not be interchanged, or at the most they may be interchanged only in very restricted ways.
  - B. It is the property of an object through which its existence transcends time and/or space.
  - C. It is the property that distinguishes an active object from one that is not active.
  - D. All of the mentioned
- 338. What is that concept in type theory in which a single name may denote objects of many different classes that are related by some common super class referred to**
- A. Monomorphism
  - B. Type Checking
  - C. Polymorphism
  - D. Generalization
- 339. Identify the problem of the GRASP pattern: What is a basic principle by which to assign responsibilities to objects?**
- A. Low coupling
  - B. High cohesion
  - C. Information Expert
  - D. Creator
- 340. Identify the problem of the GRASP pattern: Who creates object A?**
- A. Low coupling
  - B. High cohesion
  - C. Information Expert
  - D. Creator
- 341. Identify the problem of the GRASP pattern: What first object beyond the UI layer receives and coordinates "controls" a system operation?**
- A. Controller
  - B. High cohesion
  - C. Information Expert
  - D. Creator
- 342. Identify the problem of the GRASP pattern: How to reduce the impact of change? How to support low dependency and increased reuse?**
- A. High Coupling
  - B. Low Coupling
  - C. High Cohesion
  - D. Low Cohesion
- 343. Identify the problem of the GRASP pattern: How to keep objects focused and as a understandable, manageable and as a side effect support Low Coupling?**
- A. High Coupling
  - B. Low Coupling
  - C. High Cohesion
  - D. Low Cohesion
- 344. Identify the problem of the GRASP pattern: Where to assign a responsibility to avoid direct coupling between two or more things?**
- A. Indirection
  - B. Polymorphism
  - C. Pure Fabrication
  - D. Creational
- 345. Identify the problem of the GRASP pattern: How handle alternatives based on type?**
- A. Pure Fabrication
  - B. Polymorphism
  - C. Information Expert
  - D. Creator
- 346. Identify the problem of the GRASP pattern: What object should have the responsibility, when you do not want to violate High Cohesion and Low Coupling, but solutions offered by other principles are not appropriate?**
- A. Polymorphism
  - B. High Cohesion
  - C. Low Coupling
  - D. Pure Fabrication
- 347. Identify the problem of the GRASP pattern: How to design objects, subsystems and systems so that the variations or instability in these elements does not have an undesirable impact on other elements?**
- A. Protected Variations
  - B. High Cohesion
  - C. Low Coupling
  - D. Pure Fabrication
- 348. Identify the problem of GoF pattern: How do you ensure that it is never possible to create more than one instance of a singleton class?**
- A. Adapter
  - B. Singleton
  - C. Façade
  - D. Observer
- 349. Identify the problem of GoF pattern: How do you reduce the interconnection between classes, especially between classes that belong to different modules or subsystems?**
- A. Adapter
  - B. Singleton
  - C. Façade
  - D. Observer
- 350. Identify the problem of GoF pattern: How can you most effectively make use of a method that already exists in the other class?**
- A. Adapter
  - B. Singleton
  - C. Façade
  - D. Delegation
- 351. Identify the problem of GoF pattern: How to obtain the power of polymorphism when reusing a class whose methods have the same function but not the same signature as the other methods in the hierarchy?**
- A. Adapter
  - B. Singleton
  - C. Façade
  - D. Delegation
- 352. Identify the problem of GoF pattern: How do you simplify the view that programmers have of a complex package?**
- A. Adapter
  - B. Singleton
  - C. Façade
  - D. Delegation
- 353. \_\_\_\_\_ represent the best practices used by experienced object-oriented software developers.**
- A. EB2
  - B. IMS
  - C. Design Patterns
  - D. JCL
- 354. GOF stands for?**
- A. Gamma of four
  - B. Gang of four
  - C. Gang of helm
  - D. Gamma of helm
- 355. Design patterns can be classified in \_\_\_\_\_ categories.**
- A. 1
  - B. 2
  - C. 3
  - D. 4

356. Which design patterns are specifically concerned with communication between objects?

- A. Creational Patterns
- B. Structural Patterns
- C. Behavioral Patterns
- D. J2EE Patterns

357. Which pattern are identified by Sun Java Center?

- A. Adapter pattern
- B. Creational pattern
- C. Behavioral Patterns
- D. J2EE Patterns

358. Factory pattern is one of most used design pattern in Java.

- A. TRUE
- B. FALSE
- C. Can be true or false
- D. Can not say

359. In how many steps Singleton class in java created?

- A. 1
- B. 2
- C. 3
- D. 4

360. \_\_\_\_\_ works as a bridge between two incompatible interfaces.

- A. Builder pattern
- B. Adapter pattern
- C. Bridge pattern
- D. Memento pattern

361. Filter pattern also known as?

- A. Visitor pattern
- B. Composite pattern
- C. Filter pattern
- D. Iterator pattern

362. Can we create a clone of a singleton object?

- A. Yes
- B. No
- C. Can be yes or no
- D. Can not say

363. You want to avoid multiple inheritance. Which design pattern would you choose?

- A. Abstraction-Occurrence Pattern
- B. Player-Role Pattern
- C. General Hierarchy Pattern
- D. Singleton Pattern

364. The recurring aspects of designs are called design

- A. Patterns
- B. Documents
- C. Structures
- D. Methods

365. Design pattern is a solution to a problem that occurs repeatedly in a variety of contexts.

- A. True
- B. False

366. Which pattern prevents one from creating more than one instance of a variable?

- A. Factory Method
- B. Singleton
- C. Observer
- D. None of the mentioned

367. Facade pattern promotes weak coupling between subsystem and its clients.

- A. True
- B. False

368. Which design pattern defines one-to-many dependency among objects?

- A. State pattern
- B. Adapter Pattern
- C. Observer pattern
- D. Factory method pattern

369. Facade pattern couples a subsystem from its clients.

- A. True
- B. False

370. In factory method pattern, the framework must instantiate classes but it only knows about the abstract classes, which it cannot initiate. How would one solve this problem?

- A. Encapsulating the knowledge of which document subclass to be created and moving this knowledge out of the framework
- C. Instantiating the application specific documents without knowing their class
- D. All of the mentioned

371. Which mechanism is applied to use a design pattern in an OO system?

- A. Inheritance
- B. Composition
- C. All of the mentioned
- D. None of the mentioned

372. Design patterns does not follow the concept of software reuse.

- A. True
- B. False

373. The use of design patterns for the development of object-oriented software has important implications for \_\_\_\_\_

- A. Component-based software engineering

- B. Reusability in general
- C. All of the mentioned
- D. None of the mentioned

374. Which of the following is a design pattern?

- A. Behavioral
- B. Structural
- C. Abstract Factory
- D. All of the mentioned

375. You want to minimize development cost by reusing methods? Which design pattern would you choose?

- A. Adapter Pattern
- B. Singleton Pattern
- C. Delegation pattern
- D. Builder Pattern

376. Which of the following is the correct list of entities of Composite Entity pattern?

- A. Composite Entity, Coarse-Grained Object, Strategies
- B. Composite Entity, Dependent Object, Strategies
- C. Composite Entity, Coarse-Grained Object, Dependent Object, Strategies
- D. Composite Entity, Coarse-Grained Object, Dependent Object

377. Which of the following describes the Behavioral pattern correctly?

- A. This type of patterns provide a way to create objects while hiding the creation logic rather than instantiating objects directly using new operator
- B. This type of patterns concern class and object composition. Concept of inheritance is used to compose interfaces and define ways to compose objects to obtain new functionalities.
- C. This type of pattern are specifically concerned with communication between objects.
- D. This type of pattern are specifically concerned with the presentation tier.

378. Which of the following is correct about Abstract Factory design pattern.

- A. This type of design pattern comes under creational pattern.
- B. Abstract Factory patterns work around a super-factory which creates other factories.
- C. In Abstract Factory pattern an interface is responsible for creating a factory of related objects without explicitly specifying their classes.
- D. All of the above.

379. Which of the following pattern refers to creating duplicate object while keeping performance in mind?

- A. Proxy Pattern
- B. Composite Pattern
- C. Prototype Pattern
- D. Facade Pattern

380. Which of the following pattern is primarily used to reduce the number of objects created and to decrease memory footprint and increase performance?

- A. Iterator Pattern
- B. Observer Pattern
- C. Flyweight Pattern
- D. Visitor Pattern

381. GRASP stands for \_\_\_\_\_.  
A. Global responsibility assignment software patterns  
B. General responsibility assignment software patterns  
C. General responsibility assignment system patterns  
D. General research assignment software patterns

382. There are \_\_\_\_\_ GRASP patterns.  
A. 7                    B. 8  
C. 9                    D. 10

383. Which GRASP pattern is suitable to handle alternatives based on type?  
A. Indirection        B. Pure fabrication  
C. Polymorphism     D. Creator

384. Which GRASP pattern helps to find out answer for "Who should be responsible for creating a new instance of some class?"  
A. Adapter  
B. Protected variations  
C. Creator  
D. Controller

385. You want all the clients using class A to use the same instance of class A, what should you do to achieve this goal?

- A. Override a method of class A
- B. Mark class abstract
- C. Apply the singleton pattern to class "A"
- D. Apply the command pattern to class "A"

386. Which design pattern you would use to have a prototypical instance determine the concrete class of object being created?

- A. Prototype factory design pattern
- B. Virtual prototype design pattern
- C. Non-abstract prototype design pattern
- D. Prototype design pattern

387. Which Design Pattern should you use when you want to parameterize objects by an action to perform?

- A. Command            B. Prototype
- C. Memento            D. Iterator

388. Which design pattern you would use to decouple the creation procedure of a complex object from its concrete instance to be able to apply that procedure on variety of implementations.

- A. Factory builder design pattern
- B. Method builder design pattern
- C. Builder design pattern
- D. Observer method design pattern

389. Which Design Pattern should you use when you want to represent part-whole hierarchies of objects?

- A. Composite            B. Decorator
- C. Adapter              D. State

390. Given the following scenario: You want to create families of related objects, to be used interchangeably to configure your application. What is most appropriate GOF pattern to use?

- A. Mediator            B. Abstract factory
- C. Visitor              D. Iterator

391. When would you use the GOF Decorator design pattern?

- A. To translate an existing class interface into a compatible target interface
- B. To assign more functionality to an object without sub-classing it
- C. To decouple an abstraction from its implementation so that the two can vary independently
- D. To nest layers of decorators to add more functionality

392. When would you use the GOF Composite design pattern?

- A. To decouple an abstraction from its implementation so that the two can vary independently
- B. To translates an existing class interface into a compatible target interface
- C. To arrange object hierarchies such that the client code can access both the individual objects and compositions in a uniform manner
- D. To improve the system overall performance

393. \_\_\_\_\_ are the consequences of applying the GOF Singleton pattern.

- A. It introduces thread safety issue when the singleton instance is instantiated on demand
- B. The client code can creates multiple instances at run time
- C. It reduces of the class hierarchy as compared to the other factory design patterns
- D. It makes it easier for a certain family of objects to work together

394. \_\_\_\_\_ describes the Builder pattern correctly.

- A. This pattern builds a complex object using simple objects and using a step by step approach.
- B. This pattern refers to creating duplicate object while keeping performance in mind.
- C. This pattern is used when creation of object directly is costly.
- D. This pattern is used when we need to decouple an abstraction from its implementation so that the two can vary independently.

395. \_\_\_\_\_ is not one of the elements of a design pattern.

- A. Content            B. Environment
- C. Problem            D. Solution

396. Which GOF design pattern is applied in the code snippet below?

```
public class PrintSpooler {  
    private static final PrintSpooler INSTANCE = new PrintSpooler();  
    private PrintSpooler() {}  
    public static PrintSpooler getInstance() {  
        return INSTANCE;  
    }  
}
```

- A. Proxy design pattern
- B. Singleton design pattern
- C. Façade design pattern
- D. Abstract singleton design pattern

397. A low cohesive object with many source lines of code probably collaborates with many other objects and all the interaction tends to also create high coupling.

- A. True
- B. False

398. Which of the following is true?  
(MULTIPLE ANSWERS)

- A. If A uses B closely, then A is a creator of B.
- B. Levels of coupling could be considered in isolation from Expert.
- C. A facade could be any concept which the designer chooses to represent the whole system or a subsystem.
- D. An interface-as-controller design increases the opportunity to reuse logic in future applications.
- E. A class called RDBInterface, which is only partially responsible for interacting with relational databases and interacts with a dozen other classes related to RDB access, has Low cohesion.

399. Which of the following statements about GRASP is correct?  
(MULTIPLE ANSWERS)

- A. GRASP is a visual modeling tool just like UML
- B. GRASP is a methodology for object-oriented design based on responsibility-driven design
- C. GRASP consists of a collection of design patterns that help us think in terms of object-oriented design
- D. GRASP is not well suited for visual modeling

400. With regard to the creator pattern, we should assign class B the responsibility of creating an instance of class A if which of the following conditions are true? (MULTIPLE ANSWERS)

- A. B records A
- B. B know about A
- C. B closely uses A
- D. All of the above

401. Which GRASP pattern could we use when we are concerned about change in the system and its impact? (MULTIPLE ANSWERS)

- A. Creator
- B. Information Expert
- C. High Cohesion
- D. Low Coupling

402. When talking about the GRASP Controller pattern, two types of controllers were discussed in class. What are those two types?  
(MULTIPLE ANSWERS)

- A. Primary Controller
- B. Session Controller (i.e., as a Use Case Handler)
- C. Facade Controller
- D. Intermediate Controller

403. In the Low Coupling example given in GRASP slides, which of the following is a true statement as a solution in assigning responsibilities?  
(MULTIPLE ANSWERS)

- A. We make Register call create on Payment so that the Sale class doesn't have to know about Payment.
- B. We remove the call to create() from Register to Payment and place the responsibility with Sale
- C. Because Register no longer has to know about Payment and only about Sale, instead of both, we have decreased the coupling of our objects
- D. None of the above

404. \_\_\_\_\_ is the main advantage of design patterns.

- A. Provide proven solutions
- B. Simplify complex problems
- C. Improve communication
- D. All of above

405. Facade pattern promotes weak coupling between subsystem and its clients.

- A. True
- B. False

406. \_\_\_\_\_ pattern facilitates accessing shared resources and services for large numbers of distributed clients.

- A. Web server
- B. Client server
- C. Data server
- D. Proxy server

407. Which design pattern you would you use to limit the class instantiation to one object?

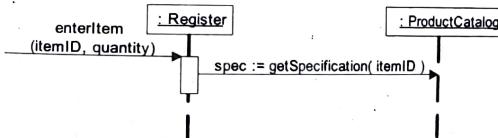
- A. Abstract factory method design pattern
- B. Builder design pattern
- C. Prototype design pattern
- D. Singleton design pattern

408. Which of the following pattern is the basis of interaction management in many web-based systems?

- A. X86 architecture
- B. Model-view-controller
- C. Repository pattern
- D. Different operating system

409. Which Design Pattern should you use when more than one object may handle a request, and the handler isn't

410. In below diagram, The Register class has connection or reference to the ProductCatalog, and hence



- A. Can send a message
- B. Cannot send a message
- C. May send a message
- D. Can't send a message because Register and ProductCatalog are instance of a class

known a priori? The handler should be ascertained automatically.

- A. Observer
- B. Chain of responsibility
- C. Flyweight
- D. Visitor

410. \_\_\_\_\_ object which receives request from UI layer object and then controls/coordinates with another object.

- A. Main
- B. Controller
- C. Child class
- D. Parent class

411. What object should have the responsibility, when you do not want to violate High Cohesion and Low Coupling, or other goals, but solutions offered by Expert are not appropriate?

- A. Pure fabrication
- B. Indirection
- C. Creator
- D. Polymorphism

412. In software engineering, \_\_\_\_\_ is the ability of one object to see or have reference to another.

- A. Availability
- B. Reliability
- C. Visibility
- D. Portability

413. In visibility, for an object A to send a message to an object B, B must be visible.

- A. True
- B. False

415. Which would you use if you wanted a relatively permanent connection between sender & receiver objects?

- A. Attribute, or global
- B. Parameter, or local
- C. Both A and B
- D. Only parameter

416. Which would you use if you didn't want a permanent connection?

- A. Parameter, or local
- B. Attribute, or global
- C. Both A and B
- D. Only Attribute

417. \_\_\_\_\_ is the way to achieve global visibility.

- A. Use a global variable in C++, Static (or class) variable (in C++ or Java) or
- C. The Singleton pattern (a static method that returns the object)
- D. All of them

418. Design class diagrams (DCD) provides details of the software classes along with \_\_\_\_\_

- A. Parameters
- B. Visibility
- C. Use cases
- D. Methods

419. A Class consists of which of these abstractions?

- A. Set of the objects
- B. Attributes
- C. Operations
- D. All of the mentioned

420. A class is divided into which of these compartments?

- A. Name Compartment
- B. Attribute Compartment
- C. Operation Compartment
- D. All of the mentioned

421. An attribute is a data item held by which of the following?

- A. Class
- B. Object
- C. All of the mentioned
- D. None of the mentioned

422. What Does a Composite diagram? of in a UML Class name contains diagram?

- A. Delimiter
- B. Simple names
- C. Digits
- D. All of the mentioned

423. Select which one is model static structures.

- A. Deployment diagram
- B. Class diagrams
- C. Activity diagrams
- D. Interaction diagrams
- E. All of the above

424. Select the diagrams that are used to explain data structures, and the static snapshots parts of the things place in the class diagrams.

- A. Use case
- B. Collaboration
- C. Object
- D. Sequence

425. \_\_\_\_\_ select from the following in which engineering and reverse engineering can be applicable

- A. Tagged values
- B. Stereotypes
- C. Class diagram
- D. Adornments
- E. Both a and b

426. \_\_\_\_\_ are part of the class operation specification format?

- A. Name
- B. Parameter list
- C. Return-type list
- D. All of the mentioned

427. Which among these are the rules to be considered to form Class diagrams?

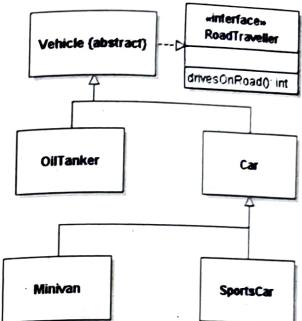
- A. Class symbols must have at least a name compartment
- B. Compartment can be in random order
- C. Attributes and operations can be listed at any suitable place
- D. None of the mentioned

428. Given this class diagram, suppose we execute the following code:

```
int ndw;  
Car min = new Minivan();
```

ndw = min.drivesOnRoad();

Where is the drivesOnRoad() that is used defined?



A. In Minivan

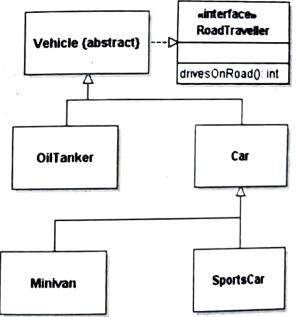
C. In Minivan, Car, or Vehicle

E. In Car or Vehicle

B. In Minivan or Car

D. In Car

429. Given this class diagram, suppose there is a method pass, defined in Car as



```
public void pass(Car other){
```

(some code for body)

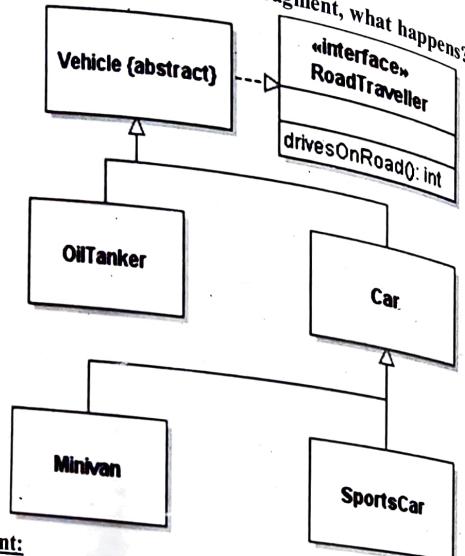
}

Suppose imp is an instance of Car (or one of its subtypes).

When I invoke the above method using `imp.pass(pokey)`, what must be true of the actual parameter `pokey`?

- A. Its actual type is Car
- B. Its actual type is Car, SportsCar, or Minivan
- C. Its actual type is Car or Vehicle
- D. It depends on the actual type of `imp`
- E. None of the above

430. Given the below class diagram and code fragment, what happens?



code fragment:

```
Garage gary = new Garage();
Car fineCar = new
SportsCar(Color.red);
...
gary.openDoor();
gary.parkCar(fineCar);
gary.closeDoor();
A. The code compiles and executes fine
B. Code fails at compile time, error in line 2
C. Code fails at compile time, error in line 5 [correct]
D. Code fails at execution time, error in line 2
E. Code fails at execution time, error in line 5
```

41. Implementation in an OOP language requires writing source code for:

- A. Class and interface definitions
- B. Method definitions
- C. Both A and B
- D. None

42. Basic class definitions can be written from the design class diagrams. Which of the following information can be extracted:

- A. Class name
- B. Attributes: name, type and access specifier
- C. Method: name, return type, parameters and their types, and its access specifier
- D. All of the above

43. During the creation of methods form interaction diagram, the sequence of messages in an interaction diagram translates to a series of statements in the method definitions. Is this statement true?

- A. Yes
- B. No

44. One-to-many relationships are common. For example, a Sale is associated with a group of SalesLineItem objects. In OO programming languages, these relationships are usually implemented using collection objects such as Vectors, Lists, Maps, arrays and so on. In which phase these relations are maintained?

- A. CREATING CLASS DEFINITIONS FROM DCDS
- B. CONTAINER/COLLECTION CLASSES IN CODE
- C. ORDER OF IMPLEMENTATION
- D. EXCEPTIONS AND ERROR HANDLING

435. How to maintain the visibility to a group of other objects? For example, a Sale must maintain visibility to a group of SalesLineItem instances. Which phases handles these?

- A. CREATING CLASS DEFINITIONS FROM DCDS
- B. CONTAINER/COLLECTION CLASSES IN CODE
- C. ORDER OF IMPLEMENTATION
- D. EXCEPTIONS AND ERROR HANDLING

436. In order of implementation phase, Classes need to be implemented (and ideally, fully unit tested) from least-coupled to most-coupled. Is this statement true?

- A. Yes
- B. No

437. \_\_\_\_\_ are anomalous situations during a program's execution.

- A. Exceptions
- B. Errors
- C. Delay
- D. Noise

438. The unexpected situations that may occur during program execution are

- i) Running out of memory
- ii) Resource allocation errors
- iii) Inability to find a file
- iv) Problems in network

- A. i, ii and iii only
- B. ii, iii and iv only
- C. i, ii and iv only
- D. All i, ii, iii and iv

439. Every try statement should be followed by at least one catch statement; otherwise \_\_\_\_\_ will occur.

- A. No execution
- B. Null
- C. Zero
- D. Compilation error

440. State whether the following statements are True or False.
- i) A catch can have comma-separated multiple arguments.

- ii) Throwing an Exception causes program termination always.
- A. True, False  
B. False, True  
C. True, True  
D. False, False

**ANSWER SHEET**

1.D	2.A	3.A	4.A	5.D	6.D	7.D	8.D	9.A	10.B
11.B	12.A	13.C	14.B	15.B	16.	17.C	18.D	19.B	20.D
21.D	22.B	23.A	24.A	25.A	26.C	27.D	28.C	29.A	30.A
31.C	32.D	33.C	34.D	35.D	36.C	37.C	38.D	39.D	40.A
41.A	42.D	43.A	44.C	45.A	46.A	47.B	48.A	49.D	50.A
51.D	52.D	53.D	54.A	55.C	56.D	57.B	58.B	59.B	60.A
61.D	62.D	63.B	64.C	65.D	66.D	67.A	68.D	69.C	70.D
71.D	72.D	73.A	74.D	75.C	76.D	77.D	78.D	79.D	80.D
81.D	82.A	83.D	84.D	85.A	86.A	87.A	88.D	89.B	90.B
91.A	92.C	93.C	94.D	95.D	96.B	97.B	98.B	99.B	100.B
101.D	102.B	103.C	104.B	105.A	106.B	107.D	108.C	109.D	110.C
111.D	112.B	113.C	114.D	115.B	116.B	117.D	118.C	119.D	120.A
121.B	122.A	123.D	124.C	125.D	126.A	127.B	128.C	129.D	130.D
131.C	132.D	133.A	134.C	135.D	136.B	137.C	138.A	139.C	140.B
141.A	142.D	143.A	144.A	145.C	146.D	147.C	148.D	149.B	150.B
151.B	152.A	153.C	154.C	155.C	156.A	157.D	158.C	159.C	160.D
161.C	162.D	163.A	164.D	165.A	166.A	167.D	168.C	169.D	170.B
171.A	172.D	173.C	174.C	175.C	176.A	177.A	178.D	179.C	180.A
181.D	182.B	183.C	184.A	185.B	186.D	187.B	188.C	189.A	190.A
191.B	192.D	193.A	194.D	195.D	196.B	197.D	198.B	199.A	200.D
201.A	202.B	203.C	204.B	205.B	206.A	207.D	208.B	209.A	210.B
211.A	212.C	213.C	214.D	215.D	216.B	217.A	218.B	219.D	220.D
221.A	222.A	223.D	224.D	225.D	226.D	227.D	228.E	229.D	230.F
231.B	232.A	233.C	234.B	235.B	236.B	237.A	238.A	239.A	240.B
241.D	242.C	243.A	244.B	245.D	246.D	247.D	248.D	249.D	250.C
251.D	252.D	253.C	254.A	255.A	256.D	257.C	258.B	259.A	260.B

261.D	262.B	263.A	264.D	265.B	266.D	267.D	268.A	269.B	270.B
271.B	272.C	273.A	274.D	275.A	276.A	277.A	278.A	279.C	280.B
281.C	282.A	283.A	284.C	285.A	286.B	287.C	288.C	289.A	290.A
291.C	292.D	293.A	294.C	295.C	296.B	297.B	298.D	299.B	300.A
301.C	302.C	303.D	304.A	305.C	306.B	307.C	308.B	309.A	310.B
311.A	312.C	313.B	314.A	315.C	316.A	317.B	318.D	319.A	320.A
321.B	322.A	323.A	324.A	325.A	326.D	327.D	328.B	329.B	330.C
331.D	332.B	333.B	334.C	335.C	336.D	337.B	338.C	339.C	340.D
341.A	342.B	343.C	344.A	345.B	346.D	347.A	348.B	349.D	350.D
351.A	352.C	353.C	354.B	355.C	356.C	357.D	358.A	359.B	360.B
361.C	362.A	363.B	364.A	365.A	366.B	367.A	368.C	369.B	370.D
371.C	372.B	373.C	374.D	375.C	376.C	377.C	378.D	379.C	380.C
381.B	382.C	383.C	384.C	385.C	386.D	387.A	388.C	389.A	390.B
391.B	392.C	393.A	394.A	395.D	396.B	397.A	398.A. C	399.B. C	400.
401.C D	402.B, C	403.B, C	404.D	405.A	406.C	407.D	408.B	409.B	410.B
411.A	412.C	413.A	414.A	415.A	416.A	417.D	418.D	419.D	420.D
421.C	422.D	423.B	424.C	425.C	426.D	427.A	428.C	429.B	430.E
431.C	432.D	433.A	434.B	435.B	436.A	437.A	438.D	439.D	440.D