CS504-Software Engineering-I
MID TERM MCQS
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Whole part structure is also called
   a. Generalization
   b. **Aggregation**
   c. Specialization
   d. Association

2. A prototype is not the real product. It is rather just a real looking ___ of what would be eventually delivered and might not do anything useful.
   a. **Mock-up**   page 68
   b. Ad-hoc
   c. Design
   d. Structure

3. In "Railway ticket reservation system" the roles such as inquiry, reservation, ticketing and cancellation are to be performed by the user called:-
   a. **Passenger**
   b. System analyst
   c. System developer
   d. System designer

4. A useful technique for evaluating the overall complexity of a proposedarchitecture is to look at the component's ___.
   a. number and size of components
   b. **flow dependencies and sharing dependencies**
   c. size and cost
   d. function points

5. ___ relationship is concerned with classes not with the class instantiates.
   a. Association
   b. **Inheritance**
   c. Aggregation
   d. Composition

6. Software development is a step-by-step process, and in ___ phase of software development Business Objective of an organization gets cleared.
   a. Maintenance
   b. Development
   c. Definition
   d. **Vision**

7. The data on which the program operates is also considered as part of the ___.
   a. Important Data
   b. **Software**   page 01
   c. Logical Data
   d. Utility Software

8. From the following which is/are not the example(s) of illegal data flow in Data Flow Diagram (DFD)
    a. External Agents directly communicating with each other
    b. External Agent updating information in a DataStore
    c. External Agent accessing information from a Data Store
    d. There must be an intermediate process which should transform data received from one external entity and then send the transformed data to the other external entity

9. In sequence diagram, the objects are organized in a _____ line and the events in a _____ time line.
    a. Horizontal, straight
    b. Vertical, straight
    c. Horizontal, vertical
    d. Vertical, horizontal

10. Consider the following piece of code:
    public class Square extends Shape {
    // some code
    }
    The above code is an example of:
    a. Part-Whole relationship
    b. Generalization/Specialization
    c. Data Sharing
    d. Data encapsulation

11. Requirement engineering mainly deals with the _____ of the system
    a. Vision Phase
    b. Definition Phase   page 16
    c. Development Phase
    d. Maintenance Phase

12. A _____ relationship indicates that one entity is composed of one or more parts which are themselves instances of that or another entity.
    a. Inheritance
    b. Whole-part
    c. Generalization
    d. Specialization

13. In UML Object Model Notation _____
    a. C++ language-specific programs are constructed
    b. mathematical problems are visualised
    c. relationships among classes and sub-classes are expressed   page 92
    d. Graphs and tables are used to explain Software Engineering principles

14. In the case of _____, intra component linkages are stronger while inter component linkages are weak.
    a. high cohesion

b. low coupling   that must be remembered through time.
c. low cohesion
d. high coupling

15. Transactions are the
    a. Events   page 93
    b. Actions
    c. Triggers
    d. Methods

16. The modules interacting with each other through message passing have
between them.
    a. low cohesion
    b. high cohesion
    c. low coupling   page 74
    d. high coupling

17. In UML based Object Oriented model of a system, the inheritance relation between two classes is shown by a   sign towards the super-class side on the association line between the two.
    a. A filled diamond
    b. An unfilled diamond
    c. A half arrowhead
    d. An arrowhead   page 92

18. Which statement is not according to the software engineering principles? Software engineering is a(n)   ___.
    a. Balancing act
    b. Disciplined approach
    c. Unsystematic approach   page 5
    d. Quantifiable approach

19. A   is not the real product but just a real looking mock-up of what would be eventually delivered.
    a. Software
    b. Program
    c. Prototype(page 68)
    d. Test Case

20. The best way to conduct a requirements validation review is to
    a. examine the system model for errors
    b. have the customer look over the requirements
    c. send them to the design team and see if they have any concerns
    d. use a checklist of questions to examine each requirement

21. More powerful hardware resulted into the development of   powerful and software.
    a. less, complex
    b. more, complex   page 4
    c. more, simple

d. less, simple

22. _____ pointed out the elegant conceptual integrity exhibited by layered organization of software systems, with the resulting gains in development and maintenance ease.
    a. David Parnas
    b. Shaw and Garlan
    c. Barry Boehm
    d. EdsgerDijkstra   page 115

23. The architecture components for product engineering are
    a. data, hardware, software, people
    b. data, documentation, hardware, software
    c. data, hardware, software, procedures
    d. documentation, hardware, people, procedures

24. In Object oriented design, combining the services offered by an object with the attributes they work on, results in:
    a) Lower coupling and stronger cohesion
    b) Lower cohesion and stronger coupling
    c) Increased likelihood of reuse
    d) Decreases the modularity of the system
    a. a only
    b. band c
    c. a and c
    d. b and d

25. Architectural design process involves performing a number of activities which includes system structuring, control modeling and _____.
    a. System Analysis
    b. Modular Decomposition   page 120
    c. Testing
    d. Graphical User Interface

26. In use case diagram, the scope of the system is defined by:
    a. Actor
    b. Entity
    c. System Boundary
    d. "Extends" relationship

27. Specialization means
    a. Calling the same method with object of child object
    b. Hiding the data
    c. Creating new subclasses from an existing class   page 34 , 86
    d. Abstraction

28. Which of the following sentence is true regarding user interface design?
    a. GUI interfaces are good for all tasks which a user needs to perform at an interface.
    b. The higher the response time, the better is the interface
    c. The simpler the interface, the efficient is the system

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d. Command-line interfaces are faster for some tasks which the user needs to perform

29. In the architecture trade-off analysis method the architectural style should be described using the
    a. data Flow view and process view
    b. data Flow view and module view
    c. module view and process view
    d. data Flow view, module view and process view   page 136

30. In Data Flow Diagram, the entity or system, outside the boundary of this system is called
    a. Process
    b. Data Flow
    c. External Agent
    d. Data Store

31. A cohesive Class is one which emphasizes on _____ unit of functionality
    a. Single
    b. Multiple   page 76
    c. Static
    d. Both Single and Multiple

32. The goal of _____ is to translate the customer's desire for a set of defined capabilities into a working product.
    a. Electrical Engineering
    b. Product Engineering
    c. Hardware Engineering
    d. Mechanical Engineering

33. In Object Oriented Design. _____ layer contains the details that enable each object to communicate with its collaborators
    a. Subsystem
    b. Responsibility
    c. Message   page 89
    d. Object

34. A DFD is normally leveled (adding more levels of abstraction) as
    a. it is a good idea in design
    b. it is recommended by many experts
    c. it is easy to do it
    d. it is easier to read and understand a number of smaller DFDs than one large DFD

35. As per Peter Coad's methodology, which of the following may NOT be a perfect candidate for being an object?
    a. Zone
    b. Recipient
    c. Garage
    d. Password   page 93 94

36. Which of the given component of software engineering framework provides different techniques that can be used to perform a particular task?
   a. Processes
   b. Tools
   c. Methods   page 12
   d. Quality Focus

37. To determine the architectural style or combination of styles that best fits the Proposed system requirements engineering is used to uncover
   a. algorithmic complexity
   b. characteristics and constraints   page 126
   c. control and data
   d. design patterns

38. In _____ relationship, a class shares the structure and behavior defined in another class.
   a. Aggregation
   b. Composition
   c. Inheritance   page 86
   d. Uses

39. Prototyping is used when there is regarding requirements.
   a. Uncertainty(page 68)
   b. Confirmation
   c. Conflict
   d. Consensus

40. The process of utilizing our knowledge of computer science in effective production of software systems is called
   a. Chemical Engineering
   b. Electrical Engineering
   c. Computer Engineering
   d. Software Engineering   page 2

41. In Abbot's Textual Analysis technique, different parts of speech are identified within the text of the specification and these parts are modeled using different
   a. Event
   b. Process
   c. Operations
   d. Components   page 90

42. To help separate an object's external behavior from its implementation, the technique used is called
   a. Generalization
   b. Association
   c. Composition
   d. Abstraction   page 86

43. A Process in Data Flow Diagram (DFD) represents
    a. Flow of data
    b. Transformation of data   (page 49)
    c. Storage of data
    d. An external agent

44. In data flow diagram (DFD). Create, Update, Delete and Read operations are normally called:
    a. CRUD operations   page 53
    b. DURC operations
    c. RUDC operations
    d. CDUR operation

45. Collaboration diagram can show
      a) Binary messages
      b) Asynchronous messages
      c) Synchronous messages
    a. a only
    b. b only
    c. c only
    d. both b and c   page 111

46. Data cannot flow from one external entity to other external entity because
    a. It will get corrupted
    b. It is not allowed in DFD   page 59
    c. An external entity has no mechanism to read or write
    d. Both are outside the context of the system

47. In_____ Phase of software development, Requirement Engineer focuses on realizing the Business Object of an under developed product.
    a. Maintenance
    b. Development   page 16
    c. Definition
    d. Vision

48. Which of the following is not part of software architecture?
    a. Databases
    b. data design
    c. program structure
    d. algorithm details

49. Selecting objects in a domain) include:
    a. Actors. Participants and Places
    b. Only Participants
    c. Only Actors
    d. Only Actors and Places

50. Defining the services of an object means:
    a. What it does?   Page 96
    b. What it knows?

c. Who knows it?
d. Whom it knows?

51. In sequence diagram, the solid lines depict:
    a. Objects (or classes)
    b. Messages being sent from one object to the other   page 107
    c. Life-time of an object
    d. state of the object

52. Sequence diagrams:
    a. Provide the static behavior
    b. Provide Data Flow
    c. Provide a time-based view   106
    d. Provide parallel data flow

53. _____ requirements cause frequent modifications in user interface
    a. Functional
    b. Non-functional
    c. Unstable   page 62
    d. User

54. , security and maintainability are the types of _____ requirements.
    a. Non-functional   page 120
    b. Domain
    c. Functional
    d. Business

55. A change becomes _____ because of close presence of data and functions
    a. Accessible
    b. Global
    c. Private
    d. Localized   page 81

56. System _____ are built to allow the system engineer to evaluate the system components in relationship to one another.
    a. Requirements
    b. Documents
    c. Models   page 42
    d. Test cases

57. In _____ phase of software development, requirement analyst focuses on possible design of the proposed solution.
    a. Maintenance
    b. Development   (page 16)
    c. Definition
    d. Vision

58. The focus of sequence diagrams is:
    a. On objects/classes and messages exchanged among them   (page 106)
    b. On static Model of system
    c. On object constraints
    d. On the flow of Control

59. In Data Flow Diagram (DFD), data flow can:
    a. Only originate from an external entity
    b. Only terminate in an external entity
    c. Originate and terminate in an external entity
    d. Either originate or terminate in an externalentity but not both
60. In _____ the analyst determines all the sources of requirements and where do theserequirements consume
    a. Data Flow Analysis
    b. Source and Sink Analysis   (page 40)
    c. Down Parsing
    d. Up Parsing
61. In a top-down system analysis, a/an _____ required to develop high level view of thesystem at first.
    a. Analyst   page 54
    b. Designer
    c. Tester
    d. Developer
62. The Use case diagram shows that which _____ interact with each use case.
    a. Use case
    b. Actor   page 32
    c. Component
    d. Relation
63. The context diagram is used as the top levelabstraction in a _____ developed according toprinciples of structured analysis.
    a. Dataflow diagram   (page 31)
    b. Activity Diagram
    c. State Transition Diagram
    d. Use Case Diagram
64. Different messages in sequence diagrams includes:
    a. Simple
    b. Asynchronous
    c. Notify
    d. Both Simple and Asynchronous   page 108
65. A software requirement document describes all the _____ provided by the system along with the constraints under which it must operate.
    a. Conditions
    b. Services   page 23
    c. Events
    d. Processes
66. In case of a _____ message, the called routine that handles the message iscompleted before the caller resumes execution.
    a) Synchronous
    b) Asynchronous
    c) Bidirectional
    a. a only   page 108

b. b only
c. c only
d. both b and c

67. In object oriented design, _____ layer contains the data structures and algorithmic design for all attributes and operations for each object.
   a. Subsystem
   b. Class and Object
   c. Message
   d. Responsibility   page 89

68. Asynchronous messages:
   a. are implemented as operation call
   b. These block caller before response
   c. occurs in multi-threaded applications   (page 109)
   d. are shown by dotted line

69. In UML based object oriented model of a system, a composition relation between two objects is shown by a _____ sign on the whole side of a relation line.
   a. An unfilled diamond
   b. A filled diamond
   c. A half diamond
   d. A dot

70. In UML based Object Oriented Model of a system, the diamond sign is used to depict _____ relations between two objects/classes.
   a. Aggregation and Association
   b. Inheritance and Association
   c. Composition and Aggregation
   d. Composition, Aggregation and Association

71. A "register" in "Point of sale system" is an example of:
   a. Actor
   b. Participant
   c. Tangible thing   page 100
   d. Transaction

72. A use case represents
   a. A class, it attributes and operation
   b. An operation's inter faces and signature
   c. The role a user plays when interaction with the system   page 32
   d. The system's functionality for a particular purpose

73. In the case of _____ approach, data is decomposed according to functionality requirements.
   a. Object-oriented
   b. Action-oriented   page 80
   c. Event-oriented
   d. Process-oriented

74. To construct a system model the engineer should consider one of the following restraining factors?
   a. Assumptions and constraints
   b. Budget and expenses
   c. Data object and operation

d. Schedule and milestone

75. When two components of a system are using the same global data area, they are related as
   a. Data coupling
   b. Content coupling
   c. Common coupling   google
   d. External coupling

76. _____ Structure represents the internal organization of the various data and control items.
   a. Data
   b. Value
   c. Information
   d. Conceptual

77. The method of dividing and assigning different portions of a large system to different groups for construction is called _____
   a. Work Breakdown Structure   (page 119)
   b. Working Boundary Structure
   c. Work Basic Structure
   d. Work Breakdown System

78. "A car is made up of a body, three or four wheels, a steering mechanism. a breaking mechanism and a power-engine"
   The above statement is example of :
   a. Whole-Part relationship   page 95
   b. Inheritance
   c. Specialization
   d. Generalization

79. In software engineering paradigm, any engineering approach must be founded on organizational commitment to _____.
   a. Cost
   b. Scheduling
   c. Quality   (page 15)
   d. Performance

80. _____ is a technique that can be used to reduce customer dissatisfaction at requirement stage.
   a. Analysis
   b. Negotiation
   c. Prototyping   (page 71)
   d. GUI

81. Which of the following activities are included in the design process of a software architecture _____?
   a. System Development and Deployment
   b. Architectural Analysis and Testing
   c. Requirement Specifications of the system
   d. System Structuring and Modular Decomposition

82. In UML based Object Oriented model of a system, the association relation between two objects is depicted by _____ .
   a. **A straight line**
   b. A filled diamond sign on the whole side of the line
   c. An unfilled diamond sign on the whole side of the line
   d. Any arrowhead sign on one side of the line

83. _____ are kind of umbrella activities that are used to smoothly and successfully perform the construction activities
   a. Designee activities
   b. **Management activities**   (page 14)
   c. Testing activities
   d. Maintenance activities

84. Software Design discusses _____ aspect of software development
   a. What
   b. **How**
   c. Who
   d. When

85. Include and extend relationship is used in UML notation of a/an _____ .
   a. Activity Diagram
   b. Data Flow Diagram
   c. Entity Relationship Diagram
   d. **Use Case Model**

86. External Entity may be
   a. source of input data only
   b. **source of input data or destination of results**
   c. destination of results only
   d. repository of data

87. An object model of a system captures the _____ structure of a system.
   a. **Static**   page 93
   b. dynamic
   c. iterative
   d. Hierarchical

88. The criteria used to assess the quality of an architectural design should be based on system
   a. accessibility and reliability
   b. **data and control**
   c. functionality
   d. implementation details

89. In case of _____ approach, decomposition of a problem revolves around data
   a. Object-oriented
   b. **Action-oriented**   page 80
   c. Event-oriented

d. Process-oriented

90. How can we implement generalization in Object Oriented programming languages?
    a. Polymorphism
    b. Encapsulation
    c. Abstraction
    d. Inheritance

91. Which of the following is NOT among one of the four layers of the Object Oriented (OO) design pyramid
    a. The subsystem layer
    b. The class and object layer
    c. The Abstract layer   page 89
    d. The message layer

92. _____ is a technique in which we construct a model of an entity based upon its essential characteristics and ignore the inessential details.
    a. Inheritance
    b. Polymorphism
    c. Aggregation
    d. Abstraction   page 79

93. The project manager would need _____ document to monitor and track the progress of the project.
    a. Design
    b. Project
    c. Requirement   page 18
    d. Planning

94. In the case of action-oriented approach data is decomposed according to:
    a. Object requirements
    b. Functionality requirements
    c. Corresponding domain model
    d. Compatibility with object interface

95. An architectural style encompasses which of the following elements?
    a. Constraints, Set of Components and Semantic Models   page 126
    b. Set of Components and Semantic Models
    c. Semantic Models and Constraints
    d. Set of Components and Constraints

96. In order to determine the role and responsibilities of the identified objects, we need to consider which of the following step(s):
    a) Who I am?
    b) What I know?
    c) Who I know?
    d) What I do?
    a. a only
    b. a and b
    c. b, cand d   page 102
    d. cand d

97. In sequence diagram, the boxes denote:
    a. Objects (or classes)   page 106
    b. Messages, sent from one object to other
    c. Life-time of Objects
    d. Relationships

98. _____ is a system component that provides services to other components but would not normally be considered as a separate system.
    a. Method
    b. Module   page 121
    c. Message
    d. Relationship

99. A tangible entity in the real life is called _____.
    a. Functions
    b. Object   page 85
    c. Class
    d. Sub-Class

100. Sequence of messages can be present in:
    a) Use case diagram
    b) Sequence diagram
    c) Collaboration diagram
    a. a only
    b. b only
    c. c only
    d. b and c

101. The system model template contains which of the following elements
    a. Input
    b. Output
    c. System Out
    d. Input/Output

102. Identify the TRUE statement:
    a. Normally Object Oriented design is more maintainable than functional oriented.
    b. Software with Functional oriented design does not fulfill non functional requirements.
    c. Object Oriented design cannot implement "Separation of concerns" strategy
    d. Function Oriented design does not lead to an efficient product

103. An external entity that interacts with a system is called a(n):
    a. Use case
    b. Actor
    c. Stakeholder
    d. Association

104. By levelling a DFD (adding more levels of abstraction) we mean
    a. Splitting it into different levels
    b. Make its structure uniform

c. Expanding a process into one with more sub-processes giving more detail
d. Summarizing a DFD to specify only the essentials

105. Software Engineering is the combination of tools, techniques and   .
    a. Testing
    b. Processes   page 6
    c. Maintenance
    d. Design

106.   _ is concerned with decomposing a system into interacting sub-systems.
    a. System Structuring
    b. Control Modeling
    c. Modular Decomposition   page 121
    d. Work Breakdown Structure

107. There are _   most important characteristics of an object.
    a. Six
    b. Four
    c. Two
    d. Three

108. "System should maintain transaction log of every transaction"
The above statement is an example of
    a. Functional requirement
    b. Non-functional requirement
    c. Pseudo requirement
    d. Both Non-functional and Pseudo requirements

109. In object oriented approach, _   are the people and organizations that take part in the system under consideration.
    a. Actors
    b. Places
    c. Participants
    d. Tangible things

110. The modules that interact with each other through message passing have   .
    a. Low coupling   page 73
    b. High coupling
    c. Low cohesion
    d. High cohesion

111. Identifying Whole-part structures (Aggregations) means what are my

    a. Components   page 94
    b. Attributes
    c. Methods
    d. Messages

112. In "point of sale system " the term payment represents
    a. Actor
    b. Participant

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d. Container

113. Return values in synchronous messages are:
    a. Compulsory
    b. May not used when response is obvious   (page 109)
    c. Not used at all
    d. Represented by solid lines

114. GUI stand for
    a. Generic user interface
    b. Graphic user interface
    c. Generic user interaction
    d. Graphical user interaction

115. Which of the following is not the object model principle?
    a. Abstraction
    b. Encapsulation
    c. Hierarchy or inheritance
    d. Exposure   page 86

116. The system specification describes the
    a. function and behavior of a computer-based system
    b. implementation of each allocated system element
    c. algorithmic detail and data structures
    d. time required for system simulation

117. The ___ provides the software engineer with a viewof the system as a whole.
    a. Process Model
    b. Architectural Model
    c. Business model
    d. Requirements Model

118. Requirement engineering focuses on ___ aspect of the software development process.
    a. Both what and how
    b. What
    c. How
    d. why and how

119. An arrow in Data Flow Diagram (DFD) represents
    a. Direction of flow of data
    b. Processing of data
    c. External agent
    d. Internal agent

120. The ___ relationship is kind of a generalization specialization relationship.
    a. Bit-Byte
    b. Uses
    c. Binary
    d. Extends

121. In the case of _____ in a system, module boundaries are not well defined.
    a. low cohesion
    b. **high coupling**
    c. low coupling
    d. high cohesion

122. _____ Component of software engineering framework provides automated or semi-automated support in a software development.
    a. Processes
    b. Methods
    c. Quality Focus
    d. **Tools**

123. In Data Flow Diagram (DFD), one data store cannot directly copy the data from another _____.
    a. Agent
    b. Process
    c. **Data store**
    d. Flow

124. All the documents related to the software are also considered as part of the _____.
    a. Physical Document
    b. Logical Document
    c. Relational Database
    d. **Software**

125. Which elements of business processing engineering are the responsibilities of the software engineer?
    a. business area analysis
    b. **business system design**
    c. product planning
    d. information strategy planning

126. A class will be cohesive if:
    a. Class does not implement Complex interfaces
    b. Class does not have complex methods
    c. If most of the methods do not use most of the data members most of the time
    d. **If most of the methods use most of the data members most of the time**

127. A context diagram is used
    a. **As the first step in developing a detailed DFD of a system**
    b. In systems analysis of very complex systems
    c. As an aid to system design
    d. As an aid to programmers

128. _____ d. Association
    a. Aggregation
    b. **Abstraction**
    c. Inheritance

_ is an extremely powerful technique for dealing with complexity.

129.   In multiprocessing applications, different execution threads may pass information to one another by sending _____ to each other.
   a. Interrupt calls
   b. Synchronous messages
   c. Asynchronous messages
   d. System calls
130.   Normally a system is more easy to modify if its modules have
   a. High coupling and high cohesion
   b. High coupling and low cohesion
   c. Low coupling and high cohesion
   d. Low coupling and Low cohesion
131.   UML is a language for
   a. High-level Programming
   b. Low-level Programming
   c. Modeling and Design
   d. Creating diagrams only
132.   _____ is not the part of Peter Coad methodology
   a. Select actors
   b. Select participants
   c. Select places
   d. Select actions
133.   Which of the following is the external quality of software product?
   a. Correctness
   b. Concision
   c. cohesion
   d. Low coupling
134.   While establishing the services for an object, the goal is to keep data and action together for _____ coupling and _____ cohesion
   a. Lower, Higher
   b. Higher, Lower
   c. Lower, Lower
   d. Higher, Higher
135.   A necessary supplement to transform or transaction mapping needed to create a complete architectural design is
   a. entity relationship diagrams
   b. the data dictionary
   c. processing narratives for each module
   d. test cases for each module
136.   Construction activities are directly related to software _____.
   a. Management
   b. Planning
   c. Quality Assurance
   d. Development

137. OOD results in a design that achieves a number of different levels of
    .
    a. Operation
    b. Event   page 89
    c. Modularity
    d. Process
138. At which stage of software development loop, results are delivered?
    a. Problem definition
    b. Solution integration
    c. Technical development
    d. Status quo
139. ____ Requirements are often called product features.
    a. Functional
    b. Non-functional
    c. Developer
    d. User
140. Strong cohesion implies that
    a. All parts of component have a class logical relationship with each other
    b. All part of component do not have a close logical relationship with each other
    c. Component is dynamic in nature
    d. Component is static in nature
141. ____ Diagram does not capture control flow information; it just shows the flow of the data in a system.
    a. Sequence
    b. Data Flow
    c. Activity
    d. Class
142. A life line represents the object's life during the interaction in a sequence diagram while its notation is depicted by _
    a. Solid Lines
    b. Dotted Lines
    c. Full Arrow
    d. Curved Lines
143. An attribute that varies over time, e.g. price of an item, should be replaced by a/an ____ with an effective date and value
    a. Additional Class
    b. Additional Method/Function
    c. Interface
    d. Structure
144. Which of the given component of software engineering framework demands rational and Timely development of a software?
    a. Tools
    b. Methods
    c. Quality Focus

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d. Processes

145. A context diagram
   a. describes detailed design of a system
   b. is a DFD which gives an overview of the system
   c. **is a detailed description of a system**
   d. is not used in drawing a detailed DFD

146. Which one is not a part of Software Development phase?
   a. Construction
   b. **Scope**   My Point of View
   c. Project Vision
   d. Definition

147. Software architecture must address _____ requirement of a software system
   a. Functional
   b. Non Functional
   c. User interface Requirements
   d. **Both Functional and Non Functional**

148. If Cat is derived from Mammal Class, and Mammal is derived from Animal Class, then:
   a. **Cat will inherit Animal's functions and data**
   b. Cat will not inherit Animal's functions and data
   c. Cat will not be able to access any class
   d. Cat is allowed to access only the Mammal's Class

149. Which of the following is not supported by a maintainable design?
   a. Change
   b. debugging
   c. Adding new features
   d. **Higher maintenance cost**

150. The condition that must be met before the use case can be invoked, is called:
   a. **Pre-Condition**
   b. Post-Condition
   c. Pre-Assertion
   d. Post-Assertion