Unified Modeling Language(UML)

Multiple Choice Questions with Answers:-

1. What does a simple name in UML Class and objects consists of ?

a) Letters

b) Digits

c) Punctuation Characters

d) All of the mentioned

Answer: d

Explanation: A simple name consists of letters, digits and punctuation characters.

2. What Does a Composite name consists of in a UML Class and object diagram ?

a) Delimiter

b) Simple names

c) Digits

d) All of the mentioned

Answer: d

Explanation: Composite name consists of sequence of simple names and simple names already consists of digits.

3. A Class consists of which of these abstractions?

a) Set of the objects

b) Operations

c) Attributes

d) All of the mentioned

e) b, c

Answer: d

Explanation: A class is a abstraction of objects, operations and attributes.

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

a) Name Compartment

b) Attribute Compartment

c) Operation Compartment

d) All of the mentioned

Answer: d

Explanation: Class is divided into 3 main compartments mentioned)

5. 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

Answer: c

Explanation: Attribute is a data item held by class or object.

6. What should be mentioned as attributes for conceptual modelling ?

a) Initial Values

b) Names

c) All of the mentioned

d) None of the mentioned

Answer: c

Explanation: Initial values along with thier names are used as attributes.

7. An operation can be described as?

a) Object behavior

b) Class behavior

c) Functions

d) a,b

e. None of the mentioned

Answer: d

Explanation: An operation is class and object behavior.

8. Which of these are part of class operation specification format ?

a) name

b) parameter list

c) return-type list

d) All of the mentioned

Answer: d

Explanation: It consists of all these 3 mentioned format.

9. What among these is true ?

a) Associations may also correspond to relation between instances of three or more classes

b) Association lines may be unlabeled or they may show association name

c) All of the mentioned

d) None of the mentioned

Answer : c

Explanation : All the statements mentioned are true with respect to Notations.

10. 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) All of the mentioned

d) None of the mentioned

Answer : a

Explanation : Multiplicity is number of instances associated with single instance to source class.

11. 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

Answer : a

Explanation : Compartments can be in order, Attributes and operations must be listed one per line.

12. Which of these are the heuristics ?

a) Name classes, attributes, and roles with noun phrases

b) Name operations and associations with verb phrases

c) Stick to binary associations

d) All of the mentioned

Answer : d

Explanation : All the heuristic mentioned are true.

13. An object symbol is divided into what parts ?

a) Top compartment

b) Bottom Compartment

c) All of the mentioned

d) None of the mentioned

Answer: c

14. What is UML?

a) UML is Unified Modeling Language.

b) Graphical language for visualizing artifacts of the system.

c) Allow to create a blue print of all the aspects of the system.

Answer: a

15. Diagrams in unified modified language which are used to test class diagrams for accuracy purpose are called

a) deployment diagrams

b) component diagrams

c) object diagrams

d) package diagrams

Answer: a

16. In Unified Modeling Language, diagrams which captures system static structure and provide foundation for other models is called

a) deployment diagrams

b) class diagrams

c) component diagrams

d) object diagrams

Answer: b

17. In Unified Modeling Language, diagrams that organize system elements into groups are classified as

a) package diagrams

b) organized diagram

c) system diagrams

d) class diagrams

Answer: a

18. In component diagrams, building block which is represented with two rectangles laid on left side is classified as

a) type of components

b) interfaces

c) dependency relationships

Answer: c

Explanation : An object is divided into top and bottom compartments.

19. Which among the following are not the valid notations for package and component diagram?

a) Notes

b) Box

c) Extension Mechanisms

d) Packages

Answer: b

Explanation: Boxes are the notations for box and line diagram.

20. Which of the following is false?

a) A note is a dog-eared box connected to any model element by a dashed line

b) The main way to extend UML is by constraints, properties, etc

c) A dependency relation holds between two entities D and I where change in I does not affect D

d) All of the mentioned

Answer: c

Explanation: A dependency relation holds between two entities D and I where change in I affects D.

21. Which of these depicts the true definition for the UML extensions?

a) A constraint is the statement that must be true of the entities designated by one or more model elements

b) A property is a characteristic of the entity designated by a model element

c) A stereotype is a UML model element given more specific meaning

d) All of the mentioned

Answer: d

Explanation: All the mentioned statements are true definitions.

22. Which of the following in incorrect in reference to dependency?

a) Module D uses module I when a correct version of I must be present for D to work correctly

b) Module D depends for compilation on module I

c) Class I imports elements from package D

d) None of the mentioned

Answer: c

Explanation: Class D imports elements from package I.

23. What is collection of model elements called?

a) Box

b) Dependency

c) UML packages

d) Package members

Answer: d

Explanation: UML Package is collection of model elements called package members.

24. A package diagram consists of the following?

a) Package symbols

b) Groupings of Usecases, classes, components

c) Interface

d) All of the mentioned

e) a, b

Answer: e

Explanation: A package diagram consists of package symbols, groupings of usecases, classes, components, etc.

25. What types of units does Component follow?

a) Modular Unit

b) Replaceable Unit

c) Unit with well defined interface

d) All of the mentioned

Answer: d

Explanation: A component consists of modular, replaceable unit with well defined interface.

26. Components can be represented by which of the following?

a) Component symbols

b) Stereotypes

c) Rectangular boxes

d) a, b

e) a, c

Answer: d

Explanation: Components can be expressed by Symbols and stereotypes.

27. What does a component diagram consists of?

a) Components, their Relationship to the environment

b) Packages and dependency

c) Internal structure

d) a, b

e) a, c

Answer: e

Explanation: Component diagram consists of components, relationship to the environment and their internal structure.

28. Which of these is true with respect to interfaces?

a) Interfaces in component diagram defines relationship between components and environment

b) Interfaces realized by a class or a component are required interfaces

c) Interface on which a class or component depends are called provided interfaces

d) All of the mentioned

Answer: a

Explanation: Interfaces realized by a class or a component are provided interfaces whereas Interfaces on which a class or component depends are called required interfaces.

29. What is delegation connector?

a) A delegation connector ties a component interface to one or more internal classes or components

b) Delegation connectors are solid arrows stereotyped <>

c) A delegation connector may also extend from an internal class to an external interface

d) All of the mentioned

Answer: d

Explanation: All of the mentioned options represents delegation connector and are true.

30. Which of these are diagrammatic heuristics?

a) Use notes, constraints, properties and stereotypes to add information to UML models

b) Use Stereotypes to name dependencies

c) Use packages to group elements in static models

d) All of the mentioned

Answer: d

Explanation: All of the mentioned are the respective heuristics to be followed for the UML models diagram.

31. Which of the following is true ?

a) A logical architecture is the realization of product as code and data files residing and executing on computational resource

b) A physical architecture is the configuration of product's major constituents

c) All of the mentioned

d) None of the mentioned

Answer: d

Explanation: A physical architecture is the realization of product as code and data files residing and executing on computational resource whereas, A logical architecture is the configuration of product's major constituents

32. Which among these are the common notations for deployment diagrams?

a) Artifacts and nodes

b) Stereotypes

c) Components

d) All of the mentioned

Answer: a

Explanation: Artifacts and nodes are the common factors used for deployment diagram.

33. Which of the following is true?

a) A UML artifact is any physical representation of data used or produced during software development or software product operation

b) A node is a computational resource

c) All of the mentioned

d) None of the mentioned

Answer: c

Explanation: All of the mentioned options are true definitions of the notations.

34. Which of these are types of nodes used in deployment diagram?

a) Device

b) Execution Environment

c) Artifact

d) a,b

e) a,c

Answer: d

Explanation: The two types of nodes are Device and execution environment.

35. Which are the ways to represent nodes in a deployment diagram?

a) Nodes instances are underlined identifiers of the form name:type

b) The name may be left off,indicating an unnamed instance of the type

c) The type may be left off, indicating a named instance with an unspecified type

d) All of the mentioned

Answer: d

Explanation: All of the above are the ways in which a node can be represented in a deployment diagram.

36. What does a deployment diagram consists of?

a) Computational resource

b) Communication path between resource

c) Artifacts that execute resource

d) All of the mentioned

Answer: d

Explanation: A deployment diagram consists of all the mentioned options.

37. Which of the following is incorrect in deployment diagram?

a) Communication connections between nodes are shown by communication paths

b) Communication paths are represented by dotted lines

c) Artifacts are deployed inside nodes where they reside and execute

d) None of the mentioned

Answer: b

Explanation: Communication paths are represented by solid lines and not dotted lines.

38. Which of these is correct?

a) Artifacts instances and types have same names

b) Artifact names and instances are underlines

c) All of the mentioned

d) None of the mentioned

Answer: a

Explanation: Artifacts names are underlined but instances are not.

39. What is true about the artifacts?

a) An Artifact is a physical entity

b) An artifact has spatio temporal location

c) All of the mentioned

d) None of the mentioned

Answer: c

Explanation: All of the mentioned options

40. What are the ways in which artifacts can be deployed?

a) Artifact symbol can be placed within node symbol

b) The artifact symbol can appear outside the node but be attached to it by dependency arrow from the artifact

c) Artifact name can be listed inside the node symbol

d) All of the mentioned

Answer: d

Explanation: All of the above are the ways in which an artifact can be deployed.

41. Detailed design is further classified into which of the following?

a) Mid-Level Design

b) Low-Level Design

c) All of the mentioned

d) none of the mentioned

Answer: c

Explanation: Detailed design is further classified as mid level and low level design.

42. Mid-level design is the activity of specifying software at the level of medium-sized components such as?

a) Compilation units or classes

b) Their Properties, Relationship

c) Interaction of units

d) All of the mentioned

Answer: d

Explanation: Mid-level design is the activity of specifying software at the level of medium-sized components such as Compilation units or classes, their Properties, Relationship and Interaction of units.

43. Which of these is correct?

a) Low-level design is the activity of filling in small details at the lowest levels of abstraction

b) Low-level design uses DeSCRIPTR specification

c) Mid-level design uses DeSCRIPTR-PAID specification

d) All of the mentioned

Answer: d

Explanation: Low level design uses DeSCRIPTR-PAID whereas Mid level design uses DeSCRIPTR alone.

44. Which of the following is carried out for the detailed design process?

a) Both SRS and SAD are taken as input for the detailed design stage

b) Design is finalized and then Design alternatives are evaluated

c) Detailed design is the output for the process

d) a, c

e) All of the mentioned are correct and in sequence

Answer: d

Explanation: Design alternatives are evaluated first and then design is finalized.

45. A design document is a complete engineering design specification composed of?

a) Software Architecture Document(SAD)

b) Detailed Design Document(DDD)

c) All of the mentioned

d) None of the mentioned

Answer: c

Explanation: A design document is a complete engineering design specification composed of Software Architecture Document(SAD) and Detailed Design Document(DDD).

46. Which of the following statements are true?

a) The SAD specifies a program's software architecture

b) DDD specifies a program's detailed design

c) There is a standard template for DDD

d) a, b

e) a, c

Answer: d

Explanation: There is no standard template for DDD

47. The DDD template consists of which of the following?

a) Mid level Design and Low level Design

b) Mapping between models

c) Detailed Design Rationale

d) All of the mentioned

Answer: d

Explanation: The DDD template consists of which of the following Mid level Design and Low level Design, Mapping between models, Detailed Design Rationale.

48. Which of these statements states Generalization connector?

a) A generalization connector is more like a link line between objects than an association line between classes

b) The generalization connector always indicates that two particular classes participate in the generalization relation, as a link line shows that two objects participate in a particular relation

c) Never place a name, role names, or multiplicities on a generalization connector

d) All of the mentioned

Answer: d

Explanation: All of the mentioned statements about generation connector are true.

49. Which of the following is correct?

a) A concrete operation is an operation without a body, which cannot be called

b) An abstract operation has a body, which can be called

c) A concrete class is a class that cannot be instantiated

d) All of the mentioned

e) None of the mentioned

Answer: e

Explanation: All the statements are incorrect, An abstract operation is an operation without a body, which cannot be called whereas A concrete operation has a body, which can be called and An abstract class is a class that cannot be instantiated.

50. A provided interface can be shown in which of these ways?

a) To attach the stick of an interface lollipop symbol to a class or component

b) To connect a stereotyped class symbol representing the interface to the providing class or component using a special realization connector

c) Both the ways mentioned above

d) None of the mentioned

Answer: c

Explanation: Provided Interface can be matched for both of the ways.

51. A required interface can be shown in which of the following ways?

a) To attach the stick of an interface socket symbol to a class or component

b) To connect the class or component requiring the interface to an interface ball with a dependency arrow

c) To connect the class or component to a stereotyped class symbol with a dependency arrow

d) All of the mentioned

Answer: d

Explanation: A required interface can be show in all the three ways mentioned.

52. UML provides which of these levels of visibility that can be applied to attributes and operations?

a) Public

b) Package

c) Protected and Private

d) All of the mentioned

e) None of the mentioned

Answer: d

Explanation: UML provides which of these levels of visibility that can be applied to attributes and operations Public, Package, Protected and Private.

53. Which of the following is correct?

a) An attribute is an class variable when each object stores its own value for the attribute

b) An attribute can also be a instance variable, which means that there is only one value stored for the attribute that is shared by all class instances

c) An instance operation can be called using any object

d) A class operation is encapsulated in a class and can be called through the class

Answer: d

Explanation: An attribute is an instance variable when each object stores its own value for the attribute whereas an attribute can also be a class variable, which means that there is only one value stored for the attribute that is shared by all class instances and An instance operation can be called only by using instance.

54. Which of the following is true?

a) The aggregation association represents the part-whole relation between the instances of the associated classes

b) In a composition association, each part can be related to only a single whole at one time

c) An association class represents a relation on the sets of instances of the classes it connects, and it also holds data and behavior the pertinent to the relation

d) All of the mentioned

Answer: d

Explanation: All of the mentioned statements are true.

55. Which of the following are the heuristics for class diagram?

a) Never place a name, role names, or multiplicities on a generalization connector

b) Use the interface ball and socket symbols to abstract interface details and a stereotyped class symbol to show details.

c) Don’t italicize interface or operation names

d) All of the mentioned

Answer: d

Explanation: All of the mentioned are the statements for heuristics of class diagram.

56. Which of the following is true?

a) A transition is a change from one state to another

b) Transitions may be spontaneous, but usually some event triggers them

c) An event is a noteworthy occurrence at a particular time; events have no duration

d) All of the mentioned

Answer: d

Explanation: All the mentioned statements are true.

57. Every finite automaton specification must contain which of the following?

a) Descriptions of the automaton’s states in a way that allows them to be distinguished, such as by naming each one;

b) Descriptions of transitions indicating each transition’s source state, its target state, and the events that

trigger it;

c) Designation of an initial state, the starting place for state transitions

d) All of the mentioned

Answer: d

Explanation: Every finite automaton specification contains- Descriptions of the automaton's states in a way that allows them to be distinguished, such as by naming each one;Descriptions of transitions indicating each transition's source state, its target state, and the events that trigger it; and Designation of an initial state, the starting place for state transitions.

58. What does deterministic and non deterministic automaton?

a) A non-deterministic finite automaton is a finite automaton that has no spontaneous transitions and has a single transition that it must make in response to every event in each of its states

b) A deterministic finite automaton is one with multiple transitions

c) All of the mentioned

d) None of the mentioned

Answer: d

Explanation: A deterministic finite automaton is a finite automaton that has no spontaneous transitions and has a single transition that it must make in response to every event in each of its states and A non-deterministic finite automaton is one with multiple transitions.

59. Which of the following determines state diagram?

a) The UML notation for specifying finite automata is the state diagram

b) In state diagrams, states are represented by rounded rectangles

c) All of the mentioned

d) None of the mentioned

Answer: c

Explanation: All of the mentioned are true for state diagram.

60. Which of the following represents State Diagram?

a) The finite automaton initial state is designated by a special initial pseudo-state depicted as a large black dot at the tail of an arrow pointing at the initial state

b) A finite automaton may execute forever or it may halt in a final state

c) Transitions are represented by solid arrows labeled with one or more transition strings that describe the circumstances under which the transition is triggered and the actions that may ensue

d) All of the mentioned

Answer: d

Explanation: All of the mentioned are true for state diagram.

61. Which of the statements state name compartment?

a) The first compartment is the name compartment

b) It contains the state name; State names are optional and may be path names

c) The name compartment can never be omitted

d) a, b

e) a, c

Answer: d

Explanation: State name compartment is the first compartment that contains state name,name compartment may be omitted.

62. Which of the following is true?

a) A state symbol without a nested state compartment represents a complex state

b) One with a nested state compartment represents a simple state

c) All of the mentioned

d) None of the mentioned

Answer: d

Explanation:A state symbol without a nested state compartment represents a simple state and One with a nested state compartment represents a complex state.

63. Which of the following are composite states?

a) A sequential composite state

b) A concurrent composite state

c) All of the mentioned

d) None of the mentioned

Answer: c

Explanation: There are two kinds of composite states -A sequential composite state and A concurrent composite state.

64. What is sequential and concurrent composite state means?

a) A concurrent composite state contains a single state diagram composed of sub- states or inner states and the transitions between them

b) A sequential composite state contains two or more sequential state diagrams in regions separated by dashed lines called concurrent region boundary lines

c) All of the mentioned

d) None of the mentioned

Answer: d

Explanation: A sequential composite state contains a single state diagram composed of sub- states or inner states and the transitions between them and A concurrent composite state contains two or more

sequential state diagrams in regions separated by dashed lines called concurrent region boundary lines.

65. Sequential composite states simplify state models in two ways?

a) They organize states into hierarchies

b) They consolidate many transitions

c) All of the mentioned

d) None of the mentioned

Answer: c

Explanation: All of the mentioned are the two ways to simplify sequential composite states.

66. What is Interaction diagram?

a) Interaction diagrams are the UML notations for dynamic modeling of collaborations

b) Interaction diagrams are a central focus of engineering design

c) All of the mentioned

d) None of the mentioned

Answer: c

Explanation: Interaction Diagram are the UML notations for dynamic modeling of collaborations,a central focus of engineering design.

67. What are the different interaction diagram notations does UML have?

a) A sequence diagram

b) A communication diagram

c) An interaction overview diagram

d) All of the mentioned

Answer: d

Explanation: UML has Four different interaction diagram notations – A sequence diagram, A communication diagram, An interaction overview diagram, A timing diagram.

68. What is a sequence diagram?

a) A diagram that shows interacting individuals along the top of the diagram and messages passed among them arranged in temporal order down the page

b) A diagram that shows messages super imposed on a diagram depicting collaborating individuals and the links among them

c) A diagram that shows the change of an individual's state over time

d) All of the mentioned

Answer: a

Explanation: A sequence diagram shows interacting individuals along the top of the diagram and messages passed among them arranged in temporal order down the page.

69. Which of the following is true about Sequence frames?

a) A sequence diagram has a frame consisting of a rectangle with a pentagon inits upper left-hand corner

b) The pentagon is its name compartment ; the interaction is represented inside the rectangle.

c) The string in the name compartment has the form sd interaction Identifier where interaction Identifier is either a simple name or an operation specification with the same format as in a class diagram

d) All of the mentioned

Answer: d

Explanation: All of the mentioned statements are followed in sequence frames.

70. What is a lifeline?

a) It is a frame consisting of a rectangle with a pentagon inits upper left-hand corner

b) It is a rectangle containing an identifier with a dashed line extending below the rectangle

c) It is a name compartment ; the interaction is represented inside the rectangle

d) None of the mentioned

Answer: b

Explanation: Lifeline is a rectangle containing an identifier with a dashed line extending below the rectangle.

71. What does a message mean?

a) It Passes all communications from one object to another and are represented by message arrows in sequence diagrams

b) Message goes from the sending object's lifeline to the receiving object's lifeline

c) It is a rectangle containing an identifier with a dashed line extending below the rectangle

d) All of the mentioned

Answer: a

Explanation: All communications from one object to another are called messages and are represented by message arrows in sequence diagrams.

72. What are the three different types of message arrows?

a) Synchronous, Asynchronous, Asynchronous with instance creation

b) Self, Multiplied,Instance generator

c) Synchronous, Asynchronous, Synchronous with instance creation

d) None of the mentioned

Answer: c

Explanation: Three different types of message arrows are- Synchronous, Asynchronous, Synchronous with instance creation.

73. Which of these are true with respect to the message arrows?

a) The synchronous message arrow is used when a sending individual continues execution after sending the message

b) The asynchronous message arrow is used when a sending individual suspends execution after sending the message

c) The dashed arrow is used either to show the return of control from a synchronous message or to create a new entity

d) All of the mentioned

Answer: c

Explanation: The asynchronous message arrow is used when a sending individual continues execution after sending the message and The synchronous message arrow is used when a sending individual suspends execution after sending the message.

74. When is the operation executing, suspended and active?

a) An operation is executing when some process is actually running its code

b) An operation is suspended when it sends a synchronous message and it is waiting for the message to return

c) An operation is active when it is either executing or suspended

d) All of the mentioned

Answer: d

Explanation: All of the mentioned statements are true and respond to operations executing, suspended and active states.

75. What is interaction fragments?

a) A fragment which is a rectangular frame with a pentagonal operation compartment in the upper left-hand corner

b) A fragment which has a marked part of an interaction specification

c) The regions resulting from these divisions hold the interaction fragment operations

d) a, b

e) a, c

Answer: d

Explanation: Interaction fragment is a fragment which is a rectangular frame with a pentagonal operation compartment in the upper left-hand corner and A fragment which has a marked part of an interaction speci?cation.

76. Which of the following is true for optional fragments?

a) An optional fragment is a portion of an interaction that may be done

b) The fragment operator name is opt

c) Optional fragments have only a single operand, which must contain a guard

d) As in other UML diagrams, a guard is a Boolean expression enclosed in square brackets

e) All of the mentioned

Answer: e

Explanation: All of the mentioned statements are true with respect to optional fragments.

77. What is break fragment?

a) An fragment which has one or more guarded operands whose guards are mutually exclusive—that is, at most one of them can be true at any time

b) A fragment which has a single operand that is performed instead of the remainder of the enclosing fragment or diagram if the operand guard is true

c) A fragment which has a single operand that may or may not have a guard

d) None of the mentioned

Answer: b

Explanation: A break fragment has a single operand that is performed instead of the remainder of the

enclosing fragment or diagram if the operand guard is true.

78. What are the heuristics which sequencing diagram follows?

a) Put pairs of lifelines that interact heavily next to one another

b) Position lifelines to make message arrows as short as possible

c) Position lifelines to make message arrows go from left to right

d) All of the mentioned

Answer: d

Explanation: Sequencing diagram follows all the mentioned heuristics.