2. Knowledge check

1. Write your name and surname

2. Which of the following is a disadvantage of object-oriented development?
   a) Easier maintenance
   b) Objects are potentially reusable components
   c) None of the mentioned
   d) Objects may be understood as stand-alone entities

3. Unified Modeling Language (UML) diagrams can be used to represent results of object oriented analysis:
   a) True
   b) False

4. UML Structure diagrams:
   a) represent time invariant truths about the system
   b) represent time variant truths about the system
   c) both a) and b)
   d) neither a) nor b)

5. What type of diagrams represent dynamic parts of UML models?
   a) Annotation diagrams
   b) Structural diagrams
   c) Behavior diagrams
   d) Interaction diagrams

6. Which of the following term is best defined by the statement: ”a structural relationship that specifies that some objects are essential parts of other objects”?
   a) Association
   b) Generalization
   c) Composition
   d) Aggregation

7. What of the following is used, when direct access of object’s internal data structures and behavior is prohibited:
   a) Inheritance
   b) Polymorphism
   c) Extension
   d) Encapsulation

8. Which of the following is a approach to have several hierarchically related objects with differently working methods of the same name?
   a) Aggregation
   b) Inheritance
   c) Polymorphism
   d) All of the mentioned

9. Which of the UML diagrams have time shown explicitly along its axis:
   a) Interaction and Communication diagrams
   b) Sequence and Timing diagrams

c) Timing and Interaction diagrams
d) Activity and State diagrams

10. What is an abstract class?
a) A class that has no direct instances, but its descendants may have direct instances
b) A class that has direct instances, but whose descendants may not have direct instances
c) Interface, which is implemented by one or several concrete classes
d) All of the mentioned

11. Example of data centered architectural design:
a) Multi-layered
b) Repository
c) Client–server
d) Pipe and Filter

12. In design phase, which is the primary area of concern ?
a) Interfaces
b) Architecture
c) Data
d) All of the mentioned

13. Which of the following is a feature of component based software engineering (CBSE)?
a) CBSE increases productivity
b) It increases quality
c) CBSE shortens delivery time
d) All of the mentioned

14. Which of the following generic functionality can be selectively changed by additional code, to create a more specific subsystem or application?
a) Object-oriented programming language
b) Software reuse
c) Framework
d) None of the mentioned

15. A software engineer designs the user interface by applying an iterative process that draws on predefined design principles.
a) True
b) False

16. Which of the following is not included in Architectural design decisions?
a) architectural style of the system
b) distribution of the system
c) type of the system
d) testing of the system

17. Which of the following is an architectural conflict?
a) Introducing redundant data improves availability, but makes security more difficult
b) Localizing safety-related features usually means more communication, so degraded performance
c) Using large-grain components improves performance, but reduces maintainability

d) All of the mentioned

18. Mark all valid statements about coupling:
a) coupling means unintended dependency between objects
b) loose coupling is considered good feature of the design
c) you try to minimize coupling in software design
d) all statements above are true

19. Mark all valid statements about cohesion:
a) data structures and behavior of similar objects are designed in the same class
b) high cohesion is considered good feature of the design
c) you try to maximize cohesion in software design
d) all statements above are true

20. Service Oriented Architecture (SOA) is
a) strongly cohesive
b) loosely cohesive
c) loosely coupled
d) strongly coupled