Câu 1: What would you NOT consider when you first determine the scope of your software project?

A. Functions
B. Quality of code
C. Procedures

Câu 2: At what stage would you ask the user how they do their work on the system?

A. Determining Scope
B. Coding
C. Testing
D. Gathering Requirements

Câu 3: What does NOT apply to the requirements specification

A. You can use it to help test your program
B. It is created mostly by the programmers
C. It outlines everything the system is supposed to do
D. It has lots of diagrams in it

Câu 4: Which of these diagrams would NOT be in a requirement specification?

A. Data Flow Diagram
B. Test Sheet
C. Structure Chart

Câu 5: Which of these is generally used in the design process?

A. Pseudocode
B. Diagrams
C. Storyboards
D. All of these

Câu 6: Which of these do NOT help make your code more portable?

A. Using sequences
B. Using objects
C. Using common variable types
D. Using functions

Câu 7: Asking the user to test the program without looking at the code is known as :

A. White Box Testing
B. Black Box Testing

Câu 8: This involves updates and checking the program continues to work ok

A. Testing
B. Gathering Requirements
C. Maintenance
D. Coding

Câu 9:These are small sections of code that are able to hold data

    A. **Procedures**
    B. **Functions**
    C. **Methods**

Câu 10: This involves choosing the level of data you want to show the user

    A. Subtraction of Data
    B. Intraction of Data
    C. Destruction of Data
    D. Abstraction of Data

Câu 11: Which of these does NOT improve code readability?

    A. **Comments**
    B. **Camel casting**
    C. **Indenting**
    D. **Compactness**

Câu 12: Which of these is the best example of how to name a label?

    A. Lblname
    B. LblName
    C. nameLbl
    D. lblName

Câu 13: Which of these would help you identify the start and end of paired statements:

    A. **Comments**
    B. **Spaces between lines**
    C. **Indents**
    D. **Colour coded text**

Câu 14: Checking the program consistency does its calculations correctly is known as testing for..

    A. Robustness
    B. Reliability
    C. Portability
    D. Authenticity

Câu 15: Are you confident you can complete the pass criteria for the assignment

    A. Yes
    B. No

Câu 16: What is the first step in the System Development Life Cycle ?

    A. Design
    B. Feasibility
    C. Identification

D. Analysis

Câu 17: How many stages are there in the SDLC?

A. 9
B. 8
C. 21
D. 10

Câu 18: Which of these is a stage of testing?

A. Omega
B. Alpha
C. Analysis
D. Beta

Câu 19: In which step of SDLC do you actually start to solve the problem?

A. Maintenance
B. Feasibility
C. Identification
D. Design

Câu 20: Which of these is not a changeover method?

A. Pilot
B. Purpendicular
C. Phased
D. Direct

Câu 21: In which step of SDLC is Prototyping used?

A. Implementation
B. Coding
C. Design
D. Maintenance

Câu 22: What does SDLC stand for?

A. System Development Lunch Catering
B. Software Development Life Cycle
C. SDLC
D. System Daily Life Cycle

Câu 23: Which of these are types of maintenance

A. Adaptive
B. Construction
C. Corrective
D. Perceptive

Câu 24: Which of these is possible reason for software development?

A. **Currentsoftware is outdated**
B. **I don't know how to turn it on**
C. **The legal requirements have changed**
D. **The staff spend all day watching cat videos**

Câu 25: White box testing is where …

A. **You test if the box is white**
B. **A programmer tests all code pathways**
C. **It's not tested by a programmer**
D. **You see how much it will cost**

Câu 26: Black box testing is where ..

A. **You test the functionality of the code**
B. **It's done by a programmer**
C. **You don't need to understand programming to do it**
D. **You test a black box**

Câu 27: Which of these is the mnemonic for the SDLC?

A. **I FAD TIME**
B. **TIME FAD**
C. **I FAD C TIME** **(implementation – feasibility – analysis – design – code development – testing – maintenance – evaluation)**
D. **I FACETIME**

Context of Software Architecture

o Requirements

o Design

o Implementation

o Analysis and Testing

o Evolution

o Development Process

*Câu 28: Implementation is …

A. When you carry out your evil plan to take over the world
B. The stage where the system is actually rolled out
C. Where you implement
D. Acquisition and installation of hardware and software

Câu 29: Which of these are tested in the review / evaluation stage ?

A. **Performance**
B. Identification
C. **Usability**
D. **Robustness**

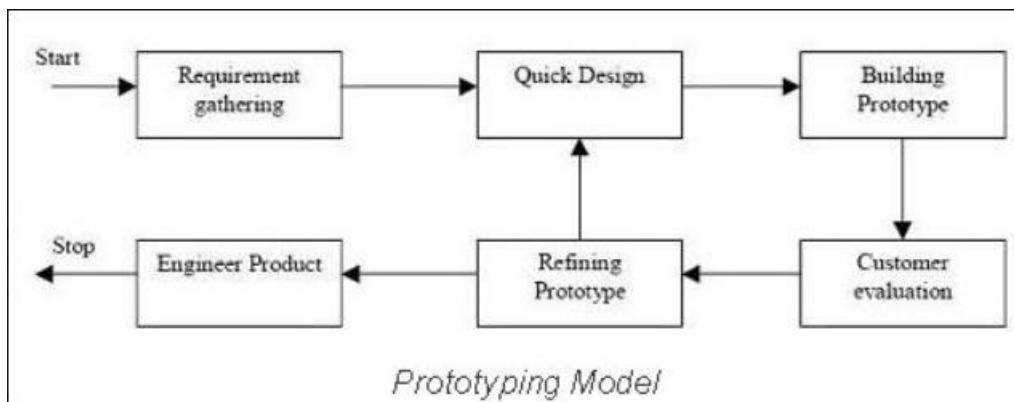**Câu 30: In the real world, who would you create the system with ?**

A. Your imaginary friend
B. **A team of programmers**
C. Yourself
D. Just you and the client

Câu 31: Which one of the following models is not suitable for accommodating any change?

A. Build and Fix Model
B. Prototyping
C. RAD Model
D. **Waterfall Model**

Câu 32: Which one of the following is not a phase of Prototyping Model?

A. Quick Design
B. **Coding**
C. Prototype Refinement
D. Engineer Product

Prototyping Model

Câu 33: Which model can be selected if user is involved in all the phases of SDLC?

A. Waterfall Model
B. Both C and D
C. **RAD model**
D. Prototyping model

Câu 34: What is the major advantage of using Incremental Model?

A. Customer can respond to each increment
B. Easier to test and debug
C. Used when there is need to get products the market early

D. **Both B & c**

Câu 35: The spiral model has two dimensions namely ------ and ---

A. **Diagonal, angular**
B. **Radial, perpendicular**
C. **Radial, angular**
D. **Diagonal, perpendicular**

Câu 36: What are the types of requirements?

A. **Availability**
B. **Reliability**
C. **Usability**
D. **All of the mentioned**

Câu 37: Which one of the following is not a step of requirements engineering?

A. Elicitation
B. Design
C. Analysis
D. Documentation

Câu 38: A use-case actor is always a person having a role that different people may play.

A. True
B. False

Câu 39: A stakeholder is anyone who will purchase the completed software system under development

A. True
B. False

Câu 40: Which tool is use for structured designing?

A. **Program flowchart**
B. **Structure chart**
C. **Data-flow diagram**
D. **Module**

Câu 41: Cohesion is a qualitative indication of the degree to which a module

A. Can be written more compactly
B. Focuses on just one thing
C. Is able to complete its function in a timely manner
D. Is connected to other modules and the outside world

Câu 42: Coupling is a qualitative indication of the degree to which a module

A. Can be written more compactly
B. Focuses on just one thing

C. Is able to complete its function in a timely manner
D. Is connected to other modules and the outside world

Câu 43: Which model shows the flow of object interactions?

A. Sequence model
B. Subsystem model
C. Dynamic model
D. Both Sequence and Dynamic model

Câu 44: Classes and interfaces are a part of

A. Structural things
B. Behavioral things
C. Grouping things
D. Annotational things

Câu 45: What is a physical element that exists at run time in UML?

A. A node
B. An interfa
C. An activity
D. None of the mentioned

Câu 46: Why are Patterns important?

A. They capture expert design knowledge
B. Captured design accessible to both novices and other experts
C. Al of the mentioned
D. None of the mentioned

Câu 47: What benefits does patterns provide?

A. Promoting Communication
B. Streamlining Documentation
C. Increasing Development Efficiency
D. All of the mentioned

Câu 48: What is architectural style?

A. Architectural style is a description of component types
B. It is pattern of run-time control
C. It is set of constraints on architecture
D. All of the mentioned

Câu 49: Which of the following is true?

A. Architecture is low level design
B. Architecture is mid level design
C. Architecture is high level design
D. None of the mentioned

Câu 50: Which class that can have only one instance?

    A. Adaptor Class
    B. Proxy Class
    C. Singleton Class
    D. Factory Class

Câu 51: What are the types of factory pattern?

    A. Factory Method
    B. Abstract Method
    C. All of the mentioned
    D. None of the mentioned

Câu 52: Which of the following can be included as the collection?

    A. Set
    B. List
    C. Array
    D. All of the mentioned

Câu 53: What does collection iteration means?

    A. It is iteration over the collection
    B. Traversal and access of each element in a collection
    C. All of the mentioned
    D. None of the mentioned

Câu 54: A class (Adapter class) may be given new interface by an adapter class in which of these ways?

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

Câu 55: Which of the following is not followed by proxy pattern?

    A. Virtual proxies
    B. Remote proxies
    C. Access Proxies
    D. None of the mentioned

Câu 56: In particular, layers have which of the following characteristics?

    A. Layers are highly cohesive, satisfying Principle Cohesion
    B. Layers doesn't support information hiding
    C. Layers are constrained to use only above layers
    D. All of the mentioned

Câu 57: 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

Câu 58: Which of these are class diagram generation heuristics?

A. Add classes for data types
B. Convert or add container classes
C. Convert or add engineering design relationships
D. All of the mentioned

Câu 59: A design document is a complete engineering design specification composed of ?

A. Software Architecture Document (SAD)
B. Detail Design Document (DDD)
C. All of the mentioned
D. None of the mentioned

Câu 60: UML provides which these levels of visibility that can be applied to attributes and operations?

A. Public
B. Package
C. Protected Private
D. All of the mentioned

Câu 61: What is software architecture?

Câu 62: What are the main elements in the definition of software architecture?

A. Set of structures
B. Software elements
C. Relations
D. Properties

Câu 63: What are the important categories of architectures in the book?

A. Hierarchy
B. Module
C. Component and Connector
D. Allocation

Câu 64: What SWA category focuses on mapping software structures to the system's environment?

A. Allocation
B. Component and Connector
C. Module
D. None

Câu 65: What SWA category focuses on diving systems into implementation units?

A. Allocation
B. Component and Connector
C. Module
D. None

Câu 66: What SWA category focuses on how each module is implemented in detail?

A. Allocation
B. Component and Connector
C. Module
D. None

Câu 67: What SWA category focuses on how elements interact in runtime?

A. Allocation
B. Component and Connector
C. Module
D. None

Câu 68: A structure is architectural if it..

A. Specifies implementation details
B. Specifies programming language
C. Supports large structures

D. Supports reasoning

Câu 69: It was recognized as the first comprehensive framework for enterprise architecture

A. Zachman Framework
B. Model-Driven Architecture
C. The Open Group Architecture Framework (TOGAF)

Câu 70: Migration planning is included in the TOGAF stepwise cycle approach

A. True
B. False

Câu 71: Originated as a generic framework and a methodology for developing technical architectures.

A. The Open Group Architecture Framework (TOGAF)
B. The Zachman Framework
C. The Model-Driven Architecture of Object Management Group (OMG)

Câu 72: This provides the "way of working" for architects

A. Architecture Capability Framework
B. Architecture Content Framework
C. Architecture Development Method

Câu 73: A key feature of MDA, which is a set of rules and techniques used to modify one (1) model to come up with a new model

A. Mapping
B. Platform-Specific Model (PSM)
C. Platform-Independent Model (PIM)

Câu 74: It describes the internal structure of a system while abstracting specific details for a particular platform.

A. Platform-Specific Model (PSM)
B. Platform-Independent Model (PIM)
C. Computation Independent Model (CIM)

Câu 75: Architecture capability framework provides the "way of working" for architects in enterprises architecture?

A. True
B. False

Câu 76: Data and application architecture are under the enterprise consortium of TOGAF

A. True
B. False

Câu 77: Meta-object facility (MOF) provides a standard repository of the MDA model in enterprise architecture

A. True
B. False

Câu 78: This combines the specifications in the PIM and the details on how a system uses a particular type of platform

A. Platform-Specific Model (PSM)
B. Platform-Independent Model (PIM)
C. Computation Independent Model (CIM)

Câu 79: What is type of static structure diagram that describes the structure of a system?

A. Class diagram
B. Object diagram
C. Use case diagram
D. State diagram

Câu 80: What is diagram that shows view of the structure of a modeled system at a specific time?

A. Class diagram
B. Object diagram
C. State diagram
D. Sequence diagram

Câu 81: What diagram can identify the different types of users of a system?

A. Class diagram
B. Use case diagram
C. State diagram
D. Sequence diagram

Câu 82: What diagram shows how processes operate one another and in what order?

A. Class diagram
B. State diagram
C. Sequence diagram
D. Activity diagram

Câu 83: What diagram requires that the system described is composed of a finite number of states?

A. Object diagram
B. State diagram
C. Sequence diagram
D. Activity diagram

Câu 84: What diagram is graphical representations of workflows of stepwise activities and actions?

A. Class diagram
B. State diagram
C. Activity diagram
D. Sequence diagram

Câu 85: Which of the following diagram types below is NOT classified as dynamic diagram?

    A. State diagram
    B. Activity diagram
    C. Sequence diagram
    D. Class diagram

Câu 86: Which of the below diagram is NOT a Unified Modeling Language (UML) diagram

    A. Class diagram
    B. State diagram
    C. Data flow diagram (DFD)
    D. Sequence diagram

Câu 87: In this video, it states "Interaction diagram emphasizes the time ordering of messages"?

    A. True
    B. False

Câu 88: What is a list?

    A. A collection of elements with an inherent order
    B. A collection of elements without an inherent order
    C. An abstraction of a shopping cart
    D. A mythical object boasting infinite storage

Câu 89: What pointers are correct for a fixed size array implementation of a Linked List?

    A. Start, Nextfree, NextInList
    B. Start, End, Nextfree, NextInList
    C. Nextfree, NextInList, End
    D. Start, End

Câu 90: What is the largest amount of research needed for a Linear Search in a 100 length list

    A. 100
    B. 50
    C. Log2(100)
    D. √100

Câu 91: Defind an Abstract Data Type

    A. Specified independently of any programming language
    B. Specified by a particular programming language
    C. A simulator of a data type
    D. A really odd integer

Câu 92: What is NOT a use for a Stack

A. Remembering the memory location of procedure calls
B. Student Canteen Queue
C. Last-in first-out queue
D. A representation of a stack of chairs

Câu 93: What is a dynamic data structure?

A. The memory taken up by the data structure varies at run time
B. Memory required is defined before run time
C. Memory required is defined after run time
D. A data structure that can move freely in the real realm

Câu 93: What pointer is needed for an array implemented Stack?

A. Top
B. Bottom
C. Max
D. Somewhere around the middle

Câu 94: What are the terms used for adding and removing data from the Stack?

A. Push, Pop
B. Poke, Burst
C. Touch, Fizzle
D. Nitwit, Blubber, Oddment and Tweak

Câu 95: if Perter, Bob and Andrew entered the Stack order. Who would leave last?

A. Peter
B. Bob
C. Andrew

Câu 96: What is a Queue?

A. A british thing to do
B. A first-in first-out system
C. A last-in first-out system
D. A linear list

Câu 97: What are the two main pointers used for an array implementation of a circular queue?

A. Front, Rear
B. Top, Bottom
C. Left, Right
D. In, Out, Shake it all about

Câu 98: Which of these are NOT queues?

A. Priority
B. Circular
C. Linear

D. **Dynamic**

Câu 99: Which of these are NOT uses for a queue?

A. **Cinema Booking System**
B. Canteen
C. Deck of Cards

Câu 100: What does a Priority Queue do?

A. **Orders by priority, then by when joined**
B. Orders by when joined, then priority
C. Those with the least priority join the front.

Câu 101: What is Recursion?

A. **A routine defined in terms of itself**
B. Defines itself using others
C. An endless loop

Câu 102: What abstract data-type is used in Recursion?

A. Queues
B. **Stacks**
C. Simulation
D. Recursion

Câu 103: Which of these can be use Recursion?

A. **Binary Search**
B. Linear Search
C. Leonardo Di Caprio
D. **Recursion**

Câu 104: Quality Assurance is

A. **Guarantee that standards will be archived during processing**
B. Conducting tests to make sure products are consistent
C. The level of wellbeing an individual experiences
D. Processing goods to increase their selling value

Câu 105: Quality assurance includes

A. Identifying objective and standards
B. Conducting quality audits
C. Planning for continuous collection of data
D. **All of above**

Câu 106: An example of quality assurance is

A. Leaving guest forms in hotel rooms for feedback

B. Making sure your hair is neat and tidy
C. Ensuring the customer is served with 2 minutes when arriving
D. Asking for a upgrade to first class

Câu 107: Quality assurance is defined as

A. The standardization of product and services
B. A management philosophy on continue improvement
C. A food safety program used to identify hazards
D. A code of conduct used to manage staff behaviors

Câu 108: Quality Assurance and Quality Control are the same

A. True
B. False

Câu 109: Which is not a Quality Assurance technique

A. Walkthroughs and inspections
B. Service Level arguments
C. Post Projects Review
D. Testing driven requirements

Câu 110: Quality audits

A. Are unnecessary if you do it right the first time
B. Must be performed daily for each process
C. Are expensive and not worth doing
D. Is necessary to confirm quality policy is being followed

Câu 111: Quality Control is

A. Guarantee that standards will be archived during processing
B. Conducting tests to check products are meeting standards
C. The level of wellbeing an individual experiences
D. The processing of foods to increase their selling value

Câu 112: Software Quality Assurance provides confidence that a product confirms to requirements by a

A. Planned and systematic pattern of actions
B. Ad-hoc and systematic pattern of actions
C. Ad-hoc and random pattern of actions
D. Planned and random pattern of actions

Câu 113: What is meant by the term Quality Assurance?

A. A term used to add value to the product
B. A term used to ensure that production works effectively
C. A system to ensure that quality control runs effectively
D. A term that will keep all customers happy

Câu 114: What is meant by Quality Control?

A. Administration checks in the office
B. The checks performed on a product during its manufacture
C. How the customer makes the right decision
D. Checks performed after the product is completed

Câu 115: The definition of quality is refered to as?

A. Expensive
B. Right first time
C. Fitness for purpose
D. Rolls Royce

Câu 116: What is the first question that needs to be answered when doing quality planning?

A. Where do we want to go?
B. Where are we?
C. How are we going to get there?
D. Who is responsible for what?

Câu 117: Who within the IT organization has the responsibility for developing IT policies?

A. Quality assurance function
B. Human resource function
C. Quality control function
D. IT management

Câu 118: Quality is a lower priority than project scope, time, and cost

A. True
B. False

Câu 119: What is the advantage of pipe and filter architecture style?

A. They interact with the environment in limited ways
B. None of them
C. They simplify the systems maintenance and enhance its reuse
D. Interactive applications are encouraged by the style

Câu 120: Spring Boot:

A. Web development software
B. Plugin of Spring framework
C. Tool to work with Spring framework easier
D. Java web framework

Câu 121: We must add ------- dependency for user login & logout in Spring Boot

A. Spring Authentication
B. Spring Security

C. Authentication
D. Security

Câu 122: We can write manual SQL query in Spring Boot:

A. True
B. False

Câu 123: What is the folder name to store html files in Spring project?

A. Views
B. Template
C. View
D. Templates

Câu 124: What is the default server port in Spring Boot

A. 8080
B. 8000
C. 8081
D. None of them

Câu 125: How many main cultures in software engineering nowadays?

A. 4
B. 5
C. 3 (agile, object-oriented, process)
D. 6

Câu 126: @Controller & @RestController annotations are similar

A. True
B. False

Câu 127: In UML class diagram

A. + is used for private, - is used for public
B. + is used for operation, - is used for data
C. + is used for data, - is used for operation
D. + is used for public, - is used for private

Câu 128: The nonfunctional components consists of

A. Reliability
B. All of them
C. Reusability
D. Adaptability

Câu 129: How to bridge the gap between requirements & solutions

A. Software development

B. Software architecture
C. Software engineering
D. Software design

Câu 130: In linked list implementation of a queue, the item is deleted from

A. At the center of linked list
B. None is correct
C. At the head of linked list
D. At the tail of linked list

Câu 131: How many main methods which can be used for software testing?

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

Câu 132: Select the correct statement

A. Stack ADT: LIFO, Queue ADT: FIFO
B. Stack ADT: FIFO, Queue ADT: FIFO
C. Stack ADT: LIFO, Queue ADT: LIFO
D. Stack ADT: FIFO, Queue ADT: LIFO

Câu 133: Which one is correct about Thymeleaf

A. Can work in both web and non-web environment
B. All of them
C. Is a Java template engine
D. Replace for JSP

Câu 134: In Stack ADT

A. All the operation takes place at the top of the stack
B. None is correct
C. All the operation takes place at the bottom of the stack
D. All the operation takes place at both top & bottom of the stack

Câu 135: How many phases in software project management?

A. 2
B. 4
C. 1
D. 3 (planning, execution, closure)

Câu 136: Architectural styles is composed of which of the following

A. A set of semantic constraints
B. All of them
C. A set of component types that performs some function at run time

D. A topological layout of these components indicating their run-time interrelationship

Cau 137: ORM stands for

A. Object Relational Mapper
B. Object Relational Mapping
C. Oriented Relationship Mapping
D. None of them

Cau 138: Which of the following is correct about layered style?

A. All of them
B. The dynamic structure of layered is to partition software units into modular types
C. None of them
D. The static structure of layered style is nothing more than a constraint of interactions between layers

Cau 139: Which is not a valid step in SDLC framework?

A. Software design
B. Requirement gathering
C. None is correct
D. System analysis

Cau 140: Which of these notations are followed under type of specification as decomposition?

A. Box and line diagram
B. All of them
C. Sequence and communication diagram
D. State diagram

Cau 141: What is the folder name to store web resources (images, css, js,…) in Spring Boot project?

A. Resources
B. Static
C. Dynamic
D. Resource

Cau 142: Which UML diagram is used to show interactions between messages classified as?

A. Sequence
B. State chart
C. Collaboration
D. Activity

Cau 143: Insertion an item into the stack when stack is not full is called ------ operation. Deletion of item from the stack when stack is not empty is called --- operation.

A. Pop, push
B. Insert, delete
C. Delete, insert

D. Push, pop

Cau 144: Which statement is correct about MVC design pattern for a Java web application?

A. Java objects work as Model, JSP works as Controller, Servlet work as View

Cau 145: What is architecture of a software based on

A. Design
B. None of them
C. All of them
D. Requirements

Cau 146: ---- dependency in Spring Boot is used for setting up website template

A. Thymeleaf layout dialect
B. Thymeleaf layout
C. Thymeleaf dialect
D. Thymeleaf template

Cau 147: What is a sequence diagram?

A. All of them

Cau 148: What is JPA used to ?

A. None of them
B. Work with database more effectively
C. Create database automatically
D. Setup connection to database

Cau 149: How many main stages in software development lifecycle?

A. 5
B. 7
C. 6
D. 8

Cau 150: All dependencies in Spring Boot project were included in pom.xml

A. False
B. True

Cau 151: In Queue ADT

A. Both insertion&amp, deletion are done at the rear-end
B. Insertion is done at the rear-end while deletion is done at the front-end
C. Both insertion&amp, deletion are done at the front-end
D. Insertion is done at the front-end while deletion is done at the rear-end

Cau 152: How many types of entity relationship in Hibernate

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

Cau 153: What is the drawback of layered styles?

A. Multi-layerd program can be hard to debug because operations tend to be implemented through a series of calls across layers
B. It is often necessary to pass data through many layers, which can slow performance significantly
C. Layers support information hiding
D. None of them

Cau 154: API stans for

A. Architecture Programming interface
B. None of them
C. Architecture Product interface
D. Application Programming interface

Cau 155: Spring Boot supports automatic database creation

A. False
B. True

Cau 156: The final output of --- phase is a fully developed and tester software system along with complete documentation and testing results:

A. System implementation
B. System design
C. System development
D. System analysis

Cau 157: ---- file is used to config Spring Boot project

A. System configuration
B. Application properties
C. Project.connfig
D. Application.property

Cau 158: It is not recommended to handle the application on JSP

A. False
B. True

Cau 159: How many types of UML visibility specification?

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

Cau 160: We can not change the default server port in Spring Boot

A. True
B. False

Cau 161: What happends when a constructor is defined for an interface

A. Compilation failure

Cau 162: Users should be allowed to directly access to JSP page

A. True
B. False

Cau 163: What does an interface contain

A. Method declaration

Cau 164: Which among these are the notations which are used to represent software architecture?

A. UML use case diagram
B. UML activity diagram
C. All of them
D. UML class diagram, interaction diagram

Cau 165: Which one of the following is a functional requirement?

A. Portability
B. Business needs
C. Reliability
D. Maintainability

Cau 166: --- is an architectural style for developing web services

A. REST
B. SOAP
C. RESTful
D. Jersey

Cau 167: We can use both array and linked list to implement Java ADT including List, Stack, Queue

A. True
B. False