四川大学期末考试试题（闭卷）

（2017~2018 学年第 2 学期）　　A 卷

课程号：311078040　课程名称：软件工程导论　任课教师：＿＿＿＿

适用专业年级：软件工程 2016 级　学号：＿＿＿＿　姓名：＿＿＿＿

考生承诺

我已认真阅读并知晓《四川大学考场规则》和《四川大学本科学生考试违纪作弊处分规定（修订）》，郑重承诺：

1、 已按要求将考试禁止携带的文具用品或与考试有关的物品放置在指定地点；

2、 不带手机进入考场；

3、 考试期间遵守以上两项规定，若有违规行为，同意按照有关条款接受处理。

考生签名：

题　　号	一(20%)	二(10%)	三(15%)	四(20%)	五(35%)
得　　分					
卷面总分			阅卷时间		

注意事项：1. 请务必将本人所在学院、姓名、学号、任课教师姓名等信息准确填写在试题纸和添卷纸上；

2. **请将答案全部填写在本试题纸上；**

3. 考试结束，请将试题纸、添卷纸和草稿纸一并交给监考老师。

评阅教师	得分

一、单项选择题（本大题共 20 小题，每小题 1 分，共 20 分）

提示：在每小题列出的四个备选项中只有一个是符合题目要求的，请将其代码填写在下表中。错选、多选或未选均无分。

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20

1. Which of the items listed below is not one of the software engineering layers? (　)

   A. Programming　B. Process　C. Methods　D. Tools

2. The incremental model of software development is　(　)

   A. A reasonable approach when requirements are well defined.

   B. A good approach when a working core product is required quickly.

   C. The best approach to use for projects with large development teams.

   D. A revolutionary model that is not used for commercial products.

3. The waterfall model of software development is (　　)

   A.　A reasonable approach when requirements are well defined.

B. A good approach when a working core product is required quickly.

C. The best approach to use for projects with large development teams.

D. A revolutionary model that is not used for commercial products.

4. Which of these are the 5 generic software engineering framework activities? ( )

A. Analysis, designing, programming, debugging, maintenance

B. Analysis, planning, designing, programming, testing

C. Communication, risk management, measurement, production, reviewing

D. Communication, planning, modeling, construction, deployment

5. Most software continues to be custom built because （ ）

A. Component reuse is common in the software world.

B. Reusable components are too expensive to use.

C. Software is easier to build without using someone else's components.

D. Off-the-shelf software components are unavailable in many application domains.

6. Which of following are UML diagram(s) used creating an analysis model? ( )

A. activity diagram B. swimlane diagram C. state diagram D. All of A B C

7. During the process of modeling the system in context, systems that interact with the target system are not represented as ( )

A. Peer-level systems B. Subordinate systems

C. Super-ordinate systems D. Working systems

8. Which of the following is not necessary to apply agility to a software process? （ ）

A. Eliminate the use of project planning and testing

B. Only essential work products are produced

C. Process allows team to streamline tasks

D. Uses incremental product delivery strategy

9. Which of the following is NOT the characteristic of a good design? ( )

A. exhibits strong coupling between its modules

B. implements all requirements in the analysis model

C. produce a model or representation that exhibits firmness, commodity, and delight

D. provides a complete picture of the software

10. Cohesion（内聚）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

11. Which of the following is not an objective for building an analysis model? （ ）
    A. define set of software requirements that can be validated
    B. describe customer requirements
    C. develop an abbreviated solution for the problem
    D. establish basis for software design
12. Which model depicts the image of a system that an end user creates in his or her head? ( )
    A. design model B. user model C. system model D. system perception
13. Which of the following is not one of the four principles used to guide component-level design? ( )
    A. Dependency Inversion Principle B. Parsimonious Complexity Principle
    C. Interface Segregation Principle D. Open-Closed Principle
14. What is the normal order of activities in which traditional software testing is organized? ( )
    A. integration testing, unit testing, system testing, validation testing
    B. validation testing, unit testing, integration testing, system testing
    C. unit testing, integration testing, validation testing, system testing
    D. system testing, validation testing, integration testing, unit testing
15. Bottom-up integration testing has as it's major advantage (s) that ( )
    A. major decision points are tested early
    B. no drivers need to be written
    C. no stubs need to be written
    D. regression testing is not required
16. Which of the following tests is a system test that forces the software to fail in a variety of ways and verifies that software is able to continue execution without interruption? ( )
    A. security testing B. performance testing
    C. stress testing D. recovery testing
17. The testing technique that requires devising test cases to exercise the internal logic of a software module is called? ( )
    A. behavioral testing B. white-box testing
    C. black-box testing D. grey-box testing
18. Which of these are objectives for software testing? ( )
    A. uncover software errors
    B. determine the productivity of programmers
    C. eliminate (消除)the need for future program maintenance
    D. eliminate every error prior to release

19. Which of the following items does NOT appear on a CRC card? (　　)

A. class collaborators　　B. class name

C. class responsibilities　　D. class attributes

20. The use of traceability tables helps to （　）

A. debug programs following the detection of run-time errors

B. determine the performance of algorithm implementations

C. identify, control, and track requirements changes none of the above

D. none of the above

评阅教师	得分

二、判断题（本大题共 10 小题，每小题 1 分，共 10 分）

提示：正确打✓，错误打×。

1	2	3	4	5	6	7	8	9	10

1. In win-win negotiation, the customer's needs are met even though the developer's need may not be.
2. Attributes cannot be defined for a class until design has been completed.
3. When testing object-oriented software it is important to test each class operation separately as part of the unit testing process.
4. Drivers and stubs are not needed for unit testing because the modules are tested independently of one another
5. It is sometimes possible that the interface designer is constrained by environmental factors that mitigate against ease of use for many users
6. Information hiding makes program maintenance easier by hiding data and procedure from unaffected parts of the program
7. Process technology tools allow software organizations to compress（压缩）schedules by skipping unimportant activities.
8. The functionality of most computer systems need to be enhanced the lifetime of the system
9. If I decide to outsource the software project to a third party, I can just relax and let that firm build.
10. Data design actually begins during the creation of the analysis model, not the architectural model.

评阅教师	得分

三、名词解释（本大题共 5 小题，每小题 3 分，共 15 分）

提示：解释每小题所给名词的含义，若解释正确则给分，若解释错误则无分，若解释不准确或不全面，则酌情扣分。

1	2	3	4	5

1. Software Engineering
2. Software process.
3. Separation of Concerns
4. Software Architecture
5. Usability

评阅教师	得分

四、问答题（本大题共 2 小题，每小题 10 分，共 20 分）。

1. List the types of models that might be used in requirements modeling and explain the role of each type of model.
2. What is umbrella Activities? List at least five of umbrella activities

评阅教师	得分

五．分析设计题（本大题共2小题，共35分）。

There is a simple online store system. Customer can access, browse and buy all products on it. The product information includes its ID, brand, model, unit price and maker, etc. The customer information includes his/her ID, username, password and card type, address, etc. If any customer wants to buy any product, just chooses it and input the amount, the total price will be displayed immediately on the screen and the order will also be created and saved automatically by the system.

1. Assume that costumer had already login this system. Please describe the Scenario of customer purchasing product(10 分), and design its user interface (exclude(除了) the login interface).（10 分）

2. The customers are divided into three classes, such as Gold, Silver and None. According to the decision table as following, design a module to calculate the total Price of one order.

Card Type	Purchase Amount	Discount
Gold	1	0.7
Gold	>1	0.65
Silver	1	0.8
Silver	>1	0.75
None	1	1
None	>1	0.9

Module name: CalculateProductTotalPrice(Card Type, Purchase Amount, UnitPrice)
Input Paramater: Customer Type, Purchase Amount, UnitPrice
Return Value: the total price of this order. (TotalPrice= PurchaseAmount * UnitPrice * Discount)

- Draw the program flow chart of this module with simple condition (NOT need to describe the program code of this module) （5 分）
- Compute McCabe cycle complexity（环路复杂度）of this module.(5 分)
- In order to test the correctness of this module, List a set of independent path for conducting basic path testing.(5)