四川大学期末考试试题（闭卷）

（2016~2017 学年第 1 学期）　　B 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 2015 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(10%)	四(20%)	五(40%)	六(0%)	七(0%)	八(0%)
得　分								
卷面总分		教师签名		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。

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阅卷教师	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 question no longer concerns（关心） the modern software engineer?(　　　　)

   A. Why does computer hardware cost so much？

   B. Why does software take a long time to finish?

   C. Why does it cost so much to develop a piece of software?

   D. Why can’t software errors be removed from products prior to delivery?

2. Software deteriorates（退化） rather than wears out（磨损） because(　　　　)

   A. Software suffers from exposure to hostile environments

   B. Defects are more likely to arise after software has been used often

   C. Multiple change requests introduce errors in component interactions

   D. Software spare parts become harder to order

注：试题字迹务必清晰，书写工整。

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

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

4. Evolutionary software process models(　　)

A. Are iterative in nature
B. Can easily accommodate product requirements changes
C. Do not generally produce throwaway systems
D. All of the above

5. The spiral model for software development (　　)

A. Ends with the delivery of the software product
B.Is more chaotic than the incremental model
C. Includes project risks evaluation during each iteration.
D. All of the above

6. Which one of the following items about agile development is not true?　(　　)

A. Change is the primary driver for agility.
B. It emphasizes rapid delivery of operational software.
C. An agile software process must not adapt incrementally.
D. Deliver working software frequently.

7. Which of the following items does not appear on a CRC card? (　　)

A. class collaborators
B. class name
C. class responsibilities
D. class reliability

8. The result of the requirements engineering elaboration task is an analysis model that defines which of the following problem domain(s)?　(　　)

A. Information
B. Functional
C. Behavioral
D. All of the above

9. Which of these are characteristics of a good design? (　　)

A. exhibits strong coupling between its modules
B. implements all requirements in the analysis model
C. provides a complete picture of the software
D. both b and c

10. Which of the following lists can be used to describe program logic: (　　)

A . Activity diagram
B. nature language
C. program chart

D. all of the above

11. What types of abstraction are not used in software design? (　　)

A. control

B. environmental

C. data

D. procedural

12. What happens when you incorporate modularity into your plan? (　　)

A. It reduces something complex into manageable pieces.

B. It builds modules that talk to each other.

C. Creates systems too large to understand.

D. Parts of your system cannot be independently developed.

13. Encapsulation __? (　　)

A. Allows direct manipulation of things that have been encapsulated.

B. Is often referred to as information hiding.

C. Causes costly and extensive maintenance.

D. Causes changes to affect clients during implementation.

14. In component-level design, elaboration does not require which of the following elements to be described in detail? (　　)

A. Attributes

B. Source code

C. Interfaces

D. Operations

15. Which one of the following is not one of the three golden rules for UI design? (　　)

A. Place the user in control.

B. Reduce the user's memory load.

C. Make the interface consistent.

D. Provide for flexible interaction.

16. 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

17. Bottom-up integration testing has it's major advantage 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

18. Which one of the following items is not software configuration management task? (　　)

A. Configuration auditing

B. Version control

C. Change control

D. Repository

19. Effective software project management focuses on four P's which are　(　　)

A. people, performance, payoff, product

B. people, product, performance, process

C. people, product, process, project

D. people, process, payoff, product

20. Why do we model? (　　)

A. Helps to visualize a system.

B. Gives us a template for constructing a system.

C. Documents our decisions.

D. All of the above.

阅卷教师	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. Software is a product and can be manufactured using the same technologies used for other engineering artifacts. （　　）
2. Software engineering will make us create voluminous and unnecessary documentation and will invariably slow us down. （　　）
3. Change cannot be easily accommodated in most software systems, unless the system was designed with change in mind. （　　）
4. It is generally accepted that one cannot have weak software processes and create high quality end products. （　　）
5. We can modify the reused classes to add some new attributes and operations to meet our new requirements and don’t worry about any side effects. （　　）
6. Cohesion refers to elements in the same module, whereas coupling refers to elements in different modules. （　　）
7. Showing your customer a mockup（实体模型） of the UI（用户界面） is one good way to get feedback while gathering requirements. （　　）
8. Functional testing tests against the specification. （　　）
9. The goal of software testing is to find all error in software prior to delivery to customer. （　　）
10. When designing tests, if partitions are chosen perfectly, there is no point to testing boundary values near the edges of the partition. （　　）

阅卷教师	得分

三、名词解释（本大题共 5 小题，每小题 2 分，共 10 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（共2分）

2. requirements engineering（共2分）

3. Information hiding（共 2 分）

4. Component（共 2 分）

5. regression testing（共 2 分）

阅卷教师	得分

四、问答题（本大题共 2 小题，每小题 10 分，共 20 分）。

1. Describe the 5 generic process framework activities for software engineering.

2. What are the five elements of the design model? Describe each elements' content in one sentence.

(共10分)

阅卷教师	得分

五、分析设计题（本大题共 3 小题，共 40 分）。

1. Describe your opinions of why computer software needs to evolve over time. (共 10 分)

2. There are many stakeholders involved in the software project development, such as business manager, end users, marketing people, software engineer, software support and maintenance people. Different stakeholder has different concerns about the software to be build, please describe their concerns respectively。(共 10 分)

3. Design a software game which is to determine the three edges of triangle is valid or not. The description of this game is as following:

   a.Startup UI is the ranking list of TOP 10 players. Player can press the "OK" button to enter the game.

   b. Three edges of triangle are generated randomly by the system. All the value of three edges are greater than 0.Player can press "Correct" or "Fault" button which are displayed on the screen to make his/her choice.

   c. If the choice is right, the player wins 10 scores， system displays his /her cumulative score(累计得分):

   d. After 10 times, the game is over. If the score is TOP 10 and a Pop-up window will display the message "Congratulation!" and ask the player to input his/her name.

   Please complete all the following designs:

   Question3.1 Design all the User Interfaces of this game （10 分）

   According to the definition of module ValidateTriangle, complete all the following designs:

   Module name: ValidateTriangle(a,b,c)

   Input: three edges of triangle (a>0,b>0,c>0)

   Return Value: if Triangle is valid return true, otherwise return False

Question3.2 Draw the program flow chart(流程图) of this module with simple condition（简单条件） (not need to describe the program code of this module) (5 分)

Question3.3 Compute McCabe cycle complexity（环路复杂度）of this module.（ 2 分）

Question3.4 In order to test the correctness of this module, List a set of independent path for conducting basic path testing. （3 分）