四川大学期末考试试题（闭卷）

（2017~2018 学年第 1 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：**计算生物 2016 级**　　　　学号：_____　　姓名：_____

题　　号	一(40%)	二(5%)	三(15%)	四(20%)	五(20%)
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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评阅教师	得分

一、单项选择题（本大题共 20 小题，每小题 2 分，共 40 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. (　　　　) 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.

2. (　　　　) Which of these are the 5 generic software engineering framework activities?
   (A) communication, planning, modeling, construction, deployment
   (B) communication, risk management, measurement, production, reviewing
   (C) analysis, designing, programming, debugging, maintenance
   (D) analysis, planning, designing, programming, testing

3. (　　　　) is not software configuration management task.
   (A)Identification　　(B) version control　　(C)change control
   (D) configuration auditing　　(E)reporting　　(F) repository

4. 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.

5.　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

6.　Which one of following is not a UML diagram used creating a system analysis model?
　　(　　)

　　(A) activity diagram

　　(B) class diagram

　　(C) dataflow diagram

　　(D) state diagram

7. Which one of the following items is TRUE?　(　　)
　　(A) The V model is an important design pattern.
　　(B) Software is a product and can be manufactured using the same technologies used for other engineering artifacts.
　　(C) Cohesion refers to elements in the same module, whereas coupling refers to elements in different modules.
　　(D) The goal of software testing is to find all error in software prior to delivery to customer.

8. One view of requirements modeling called structured analysis, (　　).
　　(A) considers data and the processes that transform the data as separate entities.
　　(B) data objects are modeled in a way that defines their attributes and relationships.
　　(C) processes that manipulate data objects are modeled in a manner that shows how they transform data as data objects flow through the system.
　　(D) All of the above.

9. (　　) is not a work product of requirements elicitation.

　　(A) The project scheduling.
　　(B) A statement of need and feasibility.
　　(C) A list of customers, users, and other stakeholders.
　　(D) A set of usage scenarios that provide insight into the use of the system or product under different operating conditions.

10.The goal of Software Engineering is developing software that (　　).
　　(A)　Meet users' needs
　　(B)　Delivered on time
　　(C)　Within budget
　　(D)　All of above

11. Effective software project management focuses on (　　).
　　(A) people　　(B)　problem　　(C). product　　(D) process　　(E) project

12.Which one of the following items is not an element of a class definition?　(　　)
　　(A)　Class responsibilities (B)　Class attribution
　　(C)　Class name　　　　　　(D)　Class operations

13. Which one of the following is not an area of concern in the design model? (   )
    (A)   architecture
    (B)   project scope
    (C)   data
    (D)   interfaces

14. In component 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 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.

16. (   )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

17. The spiral model of 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

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

    (A)PDL
    (B) nature language
    (C) program chart
    (D) Activity diagram
    (E) all of the above
    (F) a, c and d

19. What is the goal of software engineering? (   )

    (A) The production of fault-free software that satisfies the user's needs and that is delivered on time and within budget

    (B) The development of software that conforms（遵循） to international standards

    (C) The replacement of hand coding by automatic programming
    (D) The application of engineering techniques to software development

20. The main difference between waterfall model and evolutionary model is in (   )
    (A)different activities
    (B) different project size
    (C) different project management manner
    (D) different way of activity organization

评阅教师	得分

二、判断题（本大题共5小题，每小题1分，共5分）

提示：正确打✓，错误打×，将其结果填写在下表中。

1	2	3	4	5

1. The V-model provides a way of visualizing how verification and validation actions are applied to earlier engineering work.   (   )

2. In essence, a use case captures the interactions that occur between producers and consumers of information and the system itself.   (   )

3. Components can be generalized to represent major system elements and their interactions.   (   )

4. The structure of data is a important element of interface design. (   )

5. Quality function deployment (QFD) is a quality management technique that translate the system requirements into the needs of the customer for software.   (   )

评阅教师	得分

三、名词解释题（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. Software

2. The Waterfall Model

3. Requirements engineering

4. Component

5. UML

评阅教师	得分

四、简答题（本大题共3小题，共20分）。

1. List the four design models required for a complete specification of a software design and the role of each. （共4分）

2. What are the differences between the Black-box testing techniques and the white-box testing techniques?   （共6分）

3.What is software engineering in your opinion?（共10分）

评阅教师	得分

五、分析设计题（本大题共 2 小题，共 20 分）。
提示：每小题给出了一个程序设计要求，请按照要求写出源程序代码，如果源程序代码中出现语法错误或逻辑错误，则酌情扣分。

1. A short program section is shown in the following:

$$if (a > b \&\& i > 1 || a > b \&\& i <= 10)　　k = a;$$
$$else　　k = b;$$

　　1) Draw a picture to show the basis path structure. (Hint: consider a structure with 4 simple decisions) (3 分)

　　2) Compute McCabe cyclomatic complexity（环路复杂度）. (2 分)

　　3) To complete the basis path testing, list all of independent paths. (5 分)

2. Draw a use case diagram for a ticket distributor for train system. （共 4 分）

　Develop a class model for the system. （共 6 分）

　　The system includes two actors: a traveler who purchases different types of tickets and a central computer system that maintains a reference database for the tariff (价格).

　　Use cases should include BuyOneWayTicket, BuyWeeklyCard, BuyMonthlyCard, and UpdateTariff. Also include the following exceptional case: TimeOut (i.e., traveler selected the cancel button without amount), TransactionAborted(i.e., traveler selected the cancel button without completing the transaction)，DistributorOutOfChange，and DistributorOutOfPaper.