四川大学期末考试试题（闭卷）

（2018~2019 学年第 2 学期）　　A 卷

课程号：311232030　课程名称：软件工程导论　任课教师：＿＿＿＿

适用专业年级：软件工程 2017 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(15%)	三(5%)	四(15%)	五(45%)
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 10 小题，每小题 2 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

1. Which of the following characteristics should not be “Golden Rules” of a GUI? 〔　　〕

(A) make the content easy understand

(B) place the user in control

(C) reduce the user’s memory load

(D) make the interface consistent

2. The waterfall model of software development is〔　　〕

(A) An old-fashioned model that cannot be used in a modern context

(B) A good approach when a working program is required quickly

(C) A reasonable approach when requirements are well defined

(D) The best approach to use for projects with large development teams

3. 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

4. Three major categories of risks are〔 〕
   (A) project risks, technical risks, business risks
   (B) business risks, personnel risks, budget risks
   (C) planning risks, technical risks, personnel risks
   (D) management risks, technical risks, design risks

5. Which of the items listed below is not one of the software engineering layers? 〔 〕
   (A) Tools
   (B) Methods
   (C) Manufacturing
   (D) Process

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

7. Which of the following is not an objective for building an analysis model? 〔 〕
   (A) Establish basis for software design
   (B) Describe customer requirements
   (C) Fine set of software requirements that can be validated
   (D) Develop an abbreviated solution for the problem

8. What is the goal of software engineering? 〔 〕
   (A) The development of software that conforms to international standards
   (B) The replacement of hand coding by automatic programming
   (C) The application of engineering techniques to software production
   (D) The production of fault-free software that satisfies the user's needs and that is delivered on time and within budget

9. What is the normal order of activities in which traditional software testing is organized? 〔 〕

(A) integration testing, unit testing, system testing, validation testing

(B) unit testing, integration testing, system testing, validation testing

(C) unit testing, integration testing, validation testing, system testing

(D) system testing, validation testing, integration testing, unit testing

10. Which of the following is not one of the four principles used to guide component-level design? 〔 〕

(A) Open-Closed Principle

(B) Reduce Complexity Principle

(C) Dependency Inversion Principle

(D) Interface Segregation Principle

评阅教师	得分

二、多项选择题（本大题共 5 小题，每小题 3 分，共 15 分）

提示：在每小题列出的多个备选项中有二个至五个是符合题目要求的，请将其代码填写在下表中。错选、多选、少选或未选均无分。

1	2	3	4	5

1. 〔 〕are software configuration management tasks.

(A) Identification

(B) version control

(C) change control

(D) configuration auditing

(E) reporting

(F) repository

2. Effective software project management focuses on〔 〕.

(A) people

(B) problem

(C) product

(D) process

(E) project

3. 〔 〕are the area of concern in the design model?
   (A) architecture
   (B) data
   (C) project scope
   (D) interfaces

4. Black-box testing attempts to find errors in which of the following categories〔 〕.
   (A) incorrect or missing functions
   (B) interface errors
   (C) performance errors
   (D) data errors

5. Which of these are the elements of a requirements model? 〔 〕
   (A) Behavioral elements
   (B) Class-based elements
   (C) Data elements
   (D) Scenario-based elements

评阅教师	得分

三、判断改错题（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，并改正。

1	2	3	4	5

1. The V model is an important design pattern. 〔 〕

2. Cohesion refers to elements in the same module, whereas coupling refers to elements in different modules. 〔 〕

3. Boundary value analysis can only be used to do white-box testing. 〔 〕

4. A stakeholder is anyone who will purchase the completed software system under development. 〔 〕

5. Use-case actors are always people, never system devices. 〔 〕

评阅教师	得分

四、问答题（本大题共 1 小题，每小题 15 分，共 15 分）。

What is software engineering in your opinion? （共 15 分）

评阅教师	得分

五、设计分析题（本大题共 2 小题，共 45 分）。

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

```
int    a, b;
int    x=0;
int    y=0;
if(a>b)
{
   x = a-b;
}
else {x = b-a;}
 while (b<0)
 {
   y += b;
   b++;
 }
```

(1) Draw a picture to show the control flow graph. (5 分)

(2) Compute McCabe cyclomatic complexity（环路复杂度）. (4 分)

(3) To complete the basis path testing, list all of independent paths and test cases. (6 分)

2. Please answer the following questions after finishing reading:

The department of emergence management has decided to develop an accident management system [AMS].

After communicating with customers, we get the following user scenario:

Scenario name: Warehouse On Fire [仓库]	
Participating actors instances:	
Bob, Kitty: Field Officer [实地巡逻人员]	John: Dispatcher [突发事件中心调度员]
Scene description：	
1.	Bob, driving down main street in his patrol car, notice smoke coming out of a warehouse. His partner, Kitty, activates the "Report Emergency" function from her AMS laptop[便携式电脑].
2.	Kitty enters the address of the building, a brief description of its location (i.e., northwest corner), and an emergency level. In addition to a fire unit, she requests[申请] several paramedic[医务人员] units on the scene, given that the area appears to be relatively busy. She confirms her input and waits for an acknowledgment.
3.	John, the Dispatcher, is alerted to the emergency by a beep of his workstation. He reviews[查看] the information submitted by Alice and acknowledges the report. He allocates a fire unit and two paramedic units to the Incident site[场所] and sends their estimated arrival time(ETA) to Kitty.
4.	Kitty receives the acknowledgement and the ETA (estimated arrival time).

You'll have to make a number of assumptions about the manner in which a user interacts with this system.

(1) Please draw a UML use case diagram for the AMS. (10 分)

(2) Develop a class model for the AMS. (10 分)

(3) design its user interface (exclude the login interface). (10 分)