四川大学期末考试试题（闭卷）

（2018~2019 学年第 2 学期）　　B 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 question no longer concerns the modern software engineer? 〔　　〕

(A) Why can't software errors be removed from products prior to delivery?

(B) Why does it cost so much to develop a piece of software?

(C) Why does software take a long time to finish?

(D) Why does computer hardware cost so much?

2. 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

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

4. 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

5. Software feasibility is based on which of the following〔 〕
   (A) business and marketing concerns
   (B) scope, constraints, market
   (C) technology, finance, time, resources
   (D) technical prowess of the developers

6. 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

7. In component-level design, elaboration does not require which of the following elements to be described in detail? 〔 〕
   (A) Attributes
   (B) Operations
   (C) Source code
   (D) Interfaces

8. Acceptance tests are normally conducted by the〔 〕
   (A) developer
   (B) end users
   (C) test team
   (D) systems engineers

9. 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

10. 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

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. The data flow diagram〔 〕
   (A) depicts relationships between data objects
   (B) depicts functions that transform the data flow
   (C) indicates how data are transformed by the system
   (D) indicates system reactions to external events

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

3. Which of the following lists can be used to describe program logic: 〔 〕
   (A) PDL
   (B) nature language
   (C) program chart
   (D) Activity diagram

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. How do you create agile processes to manage unpredictability? 〔 〕
   (A) Requirements gathering must be conducted very carefully
   (B) Risk analysis must be conducted before planning takes place
   (C) Software increments must be delivered in short time periods
   (D) Software processes must adapt to changes incrementally

评阅教师	得分

三、判断改错题（本大题共 5 小题，每小题 2 分，共 10 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. Information hiding makes program maintenance easier by hiding data and procedure from unaffected parts of the program. 〔 〕

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

3. Until I get the program “running” I have no way of assessing(评估) its quality. 〔 〕

4. Software engineering will make us create voluminous and unnecessary documentation and will invariably slow us down. 〔 〕

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

评阅教师	得分

七、问答题（本大题共 1 小题，每小题 15 分，共 15 分）。

What is requirement engineering in your opinion? (15 points)

评阅教师	得分

八、设计及分析题（本大题共 2 小题，每小题 10 分，共 20 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 points)

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

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

2. The department of public works for a large city has decided to develop a Web-based pothole tracing and repair system (PHTRS). A description follows (15 points):

   Citizens can log onto a website and report the location and severity of potholes. AS potholes are reported they are logged within a “public works department repair system” and are assigned an identifying number , stored by street address, size(on a scale of 1 to 10),location(middle, curb, etc.),district(determined from street address),and repair priority (determined from the size of the pothole).Work order data are associated with each pothole and include pothole location and size ,repair crew identifying number, number of people on crew, equipment assigned, hours applied to repair, hole status(work in progress, repaired, temporary repair, not repaired), amount of filler material used, and cost of repair(computed from hours applied, number of people, material and equipment used). Finally, a damage file is created to hole information about reported damage due to the pothole and includes citizen’s name, address, phone number, type of damage, and dollar amount of damage. PHTRS is an online system; all queries are to be made interactively.

   (1) Draw a UML use case diagram for the PHTRS system. You’ll have to make a number of assumptions about the manner in which a user interacts with this system. （10 points）
   (2) Develop a class model for the PHTRS system. （10 points）
   (3) design the PHTRS system’s user interface（10 points）