

四川大学期末考试试题（开卷）

（2017~2018 学年第 2 学期）

A 卷

课程号： 311082030 课程名称： 软件设计与体系结构 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(10%)	二(20%)	三(10%)	四(10%)	五(50%)
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。
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评阅教师	得分

一、单项选择题（共 10 题，每题 1 分，共 10 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. What is the relation between the elements of deployment structure? ()
(A) Use
(B) Is a
(C) Allocate to
(D) Stored in
2. Which quality attribute is related to time? ()
(A) Modifiability
(B) Performance
(C) Testability
(D) Usability
3. Which one of the following statements is wrong? ()
(A) Requirements decide the software architecture
(B) Technical environment affects software architecture
(C) Software architecture inhibits or enables the achievement of quality
(D) Architect's professional knowledge impacts on software architecture

4. Which one of the following structures supports modifiability? ()
- (A) Decomposition structure
 - (B) Concurrency structure
 - (C) Deployment structure
 - (D) Work assignment structure
5. What is the most important principle to design software architecture? ()
- (A) Realizing function
 - (B) Quality
 - (C) Constraint
 - (D) Conceptual integrity
6. Which category of design decision does caring about the interact mechanism among different component? ()
- (A) Allocation of responsibilities
 - (B) Coordination model
 - (C) Binding time decisions
 - (D) Management of resource
7. Which quality attribute is related to change ? ()
- (A) Availability
 - (B) Modifiability
 - (C) Performance
 - (D) Testability
8. Which quality attribute is supported by redundancy tactic? ()
- (A) Availability
 - (B) Modifiability
 - (C) Performance
 - (D) Usability
9. Which pattern of the following belongs to module pattern? ()
- (A) Pipe and Filter
 - (B) Map Reduce
 - (C) P2P
 - (D) Layer
10. Which pattern of the following takes distributed entities as the same? ()
- (A) MVC
 - (B) Broker
 - (C) P2P
 - (D) Layer

评阅教师	得分

二、多项选择题（共 10 题，每题 2 分，共 20 分）

提示：在每小题列出的五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	6	7	8	9	10

- Why does the software structure must be abstraction? ()
 - It's requirement of design
 - Easy to understand
 - Reduce the complexity
 - It is written in book
 - Nothing
- Which quality attributes were supported by the tactic "high cohesion"? ()
 - Availability
 - Modifiability
 - Performance
 - Security
 - Testability
- What characteristics are the CIA about the security? ()
 - Confidentiality
 - Integrity
 - Authentication
 - Authorization
 - Availability
- What activities are needed for creating software architecture? ()
 - Making a business case
 - Understanding the requirement
 - Analyzing or evaluating the architecture
 - Documenting the architecture
 - Ensuring the implementation conforms to the architecture
- What properties of product does the organization care about if it wants to get the long-term profits? ()
 - Availability
 - Modifiability
 - Cost
 - Short-term benefit
 - Usability

6. Why does the software architecture include many structures? ()
- (A) Reduce complexity of designing a system
 - (B) Observe the system from different insight
 - (C) There are many structures about the software architecture
 - (D) It is cool using many structures
 - (E) Software architecture should have a deployment structure
7. Which quality attributes of the following are runtime qualities? ()
- (A) Performance
 - (B) Usability
 - (C) Modifiability
 - (D) Testability
 - (E) Availability
8. What factors do you take account of when you choose a technology? ()
- (A) Available tools
 - (B) Extent of internal familiarity
 - (C) Technical documents
 - (D) The side effects
 - (E) Compatible with the existing technology stack
9. Which items of the following are comprised in the solution of pattern? ()
- (A) Element
 - (B) Relation
 - (C) Environment
 - (D) Topological layout
 - (E) Constraint
10. What tactics are included in the layer patterns? ()
- (A) Increase semantic coherence
 - (B) Abstract common services
 - (C) Encapsulate
 - (D) Detect fault
 - (E) Restrict communication paths

评阅教师	得分

三、判断改错题（共 5 题，每题 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. The tactic “control and observe system state” supports the performance quality attribute. ()

改错：

2. The availability of High Availability Level is 99.99%. ()

改错：

3. The spare tactic is used to support the availability quality attribute ()

改错：

4. In map-reduce pattern, the reduce procedure named “reduce” because the output set is almost always much smaller than the input sets in reduce function. ()

改错：

5. Client-Server structure belongs to the module structure ()

改错：

评阅教师	得分

四、名词解释（共5题，每题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. Tactic (total 2points)
2. Layer bridging (total 2points)
3. ATAM (Architecture tradeoff analysis method) (total 2points)
4. Product lines (total 2points)
5. software architecture (total 2points)

评阅教师	得分

五、问答题（共5题，每题10分，共50分）

1. List the six parts of quality attributes scenario according to the following description and determine what quality attribute is the description? (total 10 points)

A human registers the degraded system for become a member but the system notify network was broken and not be registered.

2. Do you care about the dynamic structure when you design a software system? Why? (total 10 points)
3. I want to design perfect software, it can support the all quality attributes, for example, support the availability, modifiability, performance and security etc. Whether or not can I realize the system? Why? Illustrate some examples. (total 10 points)
4. Broker pattern not only prevents but also supports the availability. How do you understand the contradiction? (total 10 points)
5. Which quality attributes are supported by High cohesion. How does it support these quality attributes? (total 10 points)