重庆理工大学本科生课程考试试卷

一、Single Choice Question（only one answer is right, 2 points for each question）

1. Which of the following statements about software is true?

A. Software is a kind of concrete physical entity.

B. Software is something mysterious mastered by some geniuses.

C. Software is portable.

D. The faults in a software system are due to wearing out.

2. The series of phases that software undergoes, from concept exploration to final retirement, is termed its _____.

A. business

B. logic

C. paradigm

D. life cycle or process

3. In which of the following phases of software process is it the cheapest to fix a fault?

A. The implementation phase

B. The integration phase

C. The maintenance phase

D. The design phase

4. The relationship between a super-class and subclasses is called

A. inheritance

B. composition

C. aggregation

D. association

5. Which software lifecycle model is suitable for only large-scale or in-house project?

A. Waterfall model

B. Spiral model

C. Rapid prototype model

D. Incremental model

6. Which one of the following is not a symptom of the present software crisis:

A. Software is expensive.

B. It takes too long to build a software product.

C. Software is delivered late.

D . Software products are required to perform very complex tasks

7. Model building is a form of which one of the following:

A. Abstraction

B. Decomposition

C. Aggregation

D. Composition

8. Agile model advocates which one of the following approaches?

A. In each increment, get something "quick and dirty" delivered and thereby save time

B. In each increment, get something simple released as quickly as possible

C. In each increment, get something of business-value delivered as quickly as possible,
consistent with the right level of quality

D. In each increment, get something delivered once it has been fully documented and the documentation has been signed off as complete

9. Which one of the following is not a requirements gathering technique?

A. Task analysis

B. Scenario analysis

C. Form analysis

D. SRS document review

10. Unit testing is carried out during which phase of the waterfall model?

A. Implementation phase

B. Testing phase

C. Maintenance phase

D. Design phase

二、True (T) or False (F) Questions (1 points for each question)

1. A system context model is a object oriented model that demonstrates the other systems in the environment of the system being developed.

2. Interface design is concerned with specifying of the interface to an object or to a group of objects, it doesn't need to be detailed.

3. There are four fundamental configuration management activities: Version management, System integration, Problem tracking and Release management.

4. Software engineering is a spiral process with requirements, design, implementation, and testing going on throughout the lifetime of the system.

5 The most appropriate evolution process for a software system depends on the type of software being maintained, the software development processes used in an organization, and the skills of the people involved .

6 When you are assessing a legacy system, you have to look at it from both a business perspective and a technical perspective.

7. The dependability of systems is usually more important than their detailed functionality because that system failures affect a large number of people，users often reject systems that are unreliable, unsafe, or insecure，system failure costs may be enormous and undependable systems may cause information loss.

8. The relationship between software reliability and related cost is linear.

9. Analyzing source code is a step of the general model of software evolution process.

10. Software systems are not isolated

systems but are part of more extensive systems that have a human, social, or organizational

purpose.

三、Short Answer（36 points）

1. Suppose you are working as a software engineer involved in the development of an e‐commerce website. What are the 2 most important characteristics your software must have?（3 point）

2. Suggest why it is important to make a distinction between developing the user requirements and developing system requirements in the requirements engineering process.(6 point)

3. What is the purpose of collaboration diagrams? （3 point）

4. Please describe   the main activities in the requirements engineering process.（ 6 point)

5. Extreme programming expresses user requirements as stories, with each story written on a card. Discuss the advantages and disadvantages of this approach to requirements description. （4 point)

6. Please describe several reasons why it is expensive and risky to replace legacy systems with new systems.(4 point)

7. Suggest six reasons why software dependability is important in most Socio technical systems.(6 point)

8. What is the difference between Aggregation and Association?（4 point）

四、Comprehensive application questions （34 point）

1. Please draw a DFD according to the following processes. a) The *Order Food process* receives the order, forwards it to the Kitchen, store it in the order data store, and store the updated Inventory details in the Inventory data store. The process also delivers a Bill to the Customer. b) The Manager can receive Reports through the *Generate Reports process*, which takes Inventory details and orders as input from the Inventory and Order data store respectively. c) The Manager can also initiate the *Order Inventory process* by providing Inventory order. The process forwards the Inventory order to the Supplier and stores the updated Inventory details in the Inventory data store. (12 point)

2. Develop a sequence diagram showing the interactions involved when a student registers for a course in a university. Courses may have limited enrolment, so the registration process must include checks that places are available. Assume that the student accesses an electronic course catalog to find out about available courses. (10 point)

3. Based on your experience with a bank ATM, draw an activity diagram that models the data processing involved when a customer withdraws cash from the machine. （12 point）