003-007401

M.C.A. Semester-IV

May - 2014

4004 : Software Engineering

TIME: 2.30 Hours   **Marks: 70**

Q-1   Answer the following multiple choice questions.   **15**

(01) Software is _____ system.
    a. Logical
    b. Physical
    c. 1 and 2 both
    d. None of these

(02) Requirements are gathered through_____.
    a. Interviews and brainstorming session
    b. Interviews and FAST
    c. Interviews, brainstorming session and FAST
    d. None of these

(03) The full form of I&T is
    a. Integration and Technology
    b. Information Technology
    c. Integration Testing
    d. Both (1) and (2)

(04) In _____ testing software functions in a manner that can be reasonably expected by the coustomer.
    a. System
    b. Integration Testing
    c. Unit Testing
    d. None of these

(05) In _____ interface errors are removed.
    a. Unit Testing
    b. Validation Testing
    c. System Testing
    d. Integration Testing

(06) _____ are used commonly as placeholder for routines that still need to be developed.
    a. Programs
    b. Stub
    c. Logic of a program
    d. Design of a program

(07) In _____ approach, the child modules are developed first.
   a. Top down
   b. Bottom up
   c. Top down and Bottom up
   d. None of these

(08) _____ is an important strategy for reducing side effects.
   a. Smoke Testing
   b. Integration Testing
   c. Regression Testing
   d. Integration and Regression Testing

(09) _____ is conducted at the developer's site by a customer.
   a. Beta Test
   b. Alpha Test
   c. Both (1) and (2)
   d. None of these

(10) Agile methods emphasize face to face communication over written documents. This statement is
   a. True
   b. False
   c. Cannot Say
   d. None of these

(11) The spiral model of software development is used to deliver software product. Statement is
   a. True
   b. False
   c. Cannot Say
   d. None of these

(12) Full form of EDL
   a. Error in Development Logic
   b. Error in Design Logic
   c. Error in Development and Incomplete
   d. None of these

(13) Component Based Software Engineering (CBSE) is a process that emphasize the design and construction of computer based system using reusable software components. This statement is
   a. True
   b. False
   c. Cannot Say
   d. None of these

(14) _____ methods of Fact-Finding can be especially helpful for gathering information from individuals.
- a. Interview
- b. Record Review
- c. Verification
- d. Questionnaire

(15) Which of the items listed below is not one of the software engineering layers?
- a. Process
- b. Tools
- c. Method
- d. None of these

Q-2   Attempt any five of the following.   **15**
1. What is role of software and list out types of software?
2. Explain System testing with example.
3. What is Object Oriented Analysis in Short?
4. Explain Debugging in Brief
5. Explain Relationships and attributes
6. What are software designing concepts.

Q-3   Attempt any three of the following.   **15**
1. Explain Waterfall Model in Detail
2. Write a short note on Negotiating Requirement and Elaborating Requirement.
3. Differentiate Class base modelling and Behavioral Modeling
4. What will be test strategy for conventional Software.

Q-4   Attempt any two of the following.   **15**
1. Explain System testing and explain black box testing and white box testing.
2. Write a note in Flow Oriented modelling in detail
3. What is requirement Engineering Process? And explain validating requirements in brief.

Q-5   Attempt any one of the following.   **10**
1. Explain Agile Process Model in detail.
2. Explain Pattern Based Software Design and Class base Components in detail.

003-007401

M. C.A. (CBCS Sem. IV) Examination
May-2013
CCA-4001 : Software Engineering

Faculty Code : 003
Subject Code : 007401

Time : 2½ Hours]   [Total Marks : 70

1. Answer the following Multiple choice questions :   **15**

    (1) The nature of software applications can be characterized by their information.
        (a) Complexity   (b) Content
        (c) Determinacy   (d) Both (b) & (c)

    (2) Which of the items listed below is not one of the software engineering layers ?
        (a) Process   (b) Manufacturing
        (c) Methods   (d) Tools

    (3) 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.

    (4) What are the three frame work activities for the Adaptive Software Development (ASD) process model ?
        (a) analysis, design, coding
        (b) feasibility study, functional model iteration, implementation.
        (c) requirements gathering, adaptive cycle planning, iterative development.
        (d) speculation, collaboration, learning.

(5) Agile Modeling(AM) provides guidance to practitioner during which of these software tasks ?

    (a) Analysis   (b) Design

    (c) Coding   (d) Both (a) & (b)

(6) Which of the following is not an objective for building an analysis model ?

    (a) Define set of software requirements that can be validated.

    (b) Describe customer requirements.

    (c) Develop an abbreviated solution for the problem.

    (d) Establish basis for software design.

(7) What types of abstraction are used in software design ?

    (a) Control   (b) Data

    (c) Procedural   (d) All (a), (b) & (c) above

(8) Which of the following is not one of the four principles used to guide component-level design ?

    (a) Dependency Inversion Principle

    (b) Interface Segregation Principle

    (c) Open-Closed Principle

    (d) Parsimonious Complexity Principle

(9) The testing technique that requires devising test cases to demonstrate that each program function is operational is called

    (a) Black box testing   (b) Glass box testing

    (c) Gray box testing   (d) White box testing

(10) 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

(11) The formal methods model of software development makes use of mathematical methods to

    (a) Define the specification for computer-based systems

    (b) Develop defect free computer-based systems

    (c) Verify the correctness of computer-based systems

    (d) All of the above

(12) Three things that make requirements elicitation difficult are problems of

    (a) Scope   (b) Understanding

    (c) Volatility   (d) All of the above

(13) The relationships shown in a data model must be classified to show their

    (a) Cardinality   (b) Directionality

    (c) Modality   (d) Both (a) & (c) above

(14) Evolutionary software process models

    (a) Are iterative in nature.

    (b) Can easily accommodate product requirements changes.

    (c) Do not generally produce throwaway systems.

    (d) All of the above.

(15) Software deteriorates rather than wears out because

    (a) Software suffers from exposure to hostile environments.

    (b) Defects are more likely to arise after software has been used often

    (c) Multiple change requests introduce errors in component interactions.

    (d) Software spare parts become harder to order.

2. Attempt any **five** of the following : **15**

   (1) Define : software testing. What is the objective of software testing ?

   (2) Explain in brief requirement analysis.

   (3) Write a note on validation testing.

   (4) Define: Software. Explain in brief role of software.

   (5) Explain behavioral modeling.

   (6) Explain elements of the analysis model.

3. Attempt any **three** of the following : **15**

   (1) Explain RAD process model for software engineering with its advantages and disadvantages.

   (2) Explain object oriented testing strategies.

   (3) Explain abstraction and modularity design concepts.

   (4) Explain following concepts :

   Data objects, attributes, relationships, cardinality and modality.

4. Attempt any **two** of the following : **15**

   (1) List agile process models. Explain in detail Extreme Programming & Adaptive software development.

   (2) What is requirement engineering ? Explain in brief eliciting and negotiating requirements.

   (3) Write a note on Object Oriented Analysis.

5. Attempt any **one** of the following : **10**

   (1) Explain Concurrent development model and Incremental process model with its advantages and disadvantages.

   (2) Explain control structure testing and black box testing.

MV-835

003-007401

M. C. A. (Sem. IV) (CBCS) Examination

April / May – 2012

CCA - 4001 : Software Engineering

Faculty Code : 003
Subject Code : 007401

Time : $2\frac{1}{2}$ Hours]   [Total Marks : **70**

Q : 1   **Answer the following multiple choice questions:**   [15]

[1]   The concurrent development model is
   a)   Another name for the rapid application development model.
   b)   Often used for the development of client/server applications.
   c)   Only used for development of parallel or distributed systems.
   d)   Used whenever a large number of change requests are anticipated.

[2]   Which of the following is the common method of requirement elicitation
   a)   Transactional Analysis
   b)   Risk Assessment
   c)   Implementation of the system
   d)   Observation

[3]   The result of the requirements engineering elaboration task is an analysis model that defines which of the following problem domain(s)?
   a)   Information
   b)   Functional
   c)   Behavioral
   d)   All of the above

[4]   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

[5]   Polymorphism reduces the effort required to extend an object system by
   a)   Coupling objects together more tightly.
   b)   Enabling a number of different operations to share the same name.
   c)   Making objects more dependent on one another.
   d)   Removing the barriers imposed by encapsulation.

[6]   Which of these is not an element of an object-oriented analysis model?
   a)   Behavioral elements
   b)   Class-based elements
   c)   Data elements
   d)   Scenario-based elements

[7]   The best way to conduct a requirements validation review is to
       a) examine the system model for errors
       b) have the customer look over the requirements
       c) send them to the design team and see if they have any concerns
       d) use a checklist of questions to examine each requirement
[8]   What are the four framework activities found in the Extreme
       Programming (XP) process model?
       a) analysis, design, coding, testing
       b) planning, analysis, design, coding
       c) planning, design, coding, testing
       d) planning, analysis, coding, testing
[9]   The linear sequential model of software development is also known as:
       a) Classic lifecycle model
       b) Spiral model
       c) Waterfall model
       d) Both a and c
[10]   Which of the items listed below is not one of the software engineering
       layers?
       a) Process
       b) Manufacturing
       c) Methods
       d) Tools
[11]   This Testing Technique examines the basic program structure and it
       derives the test data from the program logic; Ensuring that all statements
       and conditions executed at least once. It is called as
       a) Black box testing
       b) White box testing
       c) Grey box testing
       d) Closed box testing
[12]   The OO testing integration strategy involves testing of
       a) Groups of classes that collaborate or communicate in some way
       b) Single operations as they are added to the evolving class
           implementation
       c) Operator programs derived from use-case scenarios
       d) None of the above
[13]   Equivalence Partitioning is a testing technique used in the following
       a) White box testing
       b) Black box testing
       c) Stress testing
       d) Usability testing
[14]   For which of the following pr–actices do requirements engineering
       provide appropriate mechanisms and tools?
       a) Analyzing need
       b) Unambiguous specification of the solution
       c) Validating the specification
       d) All of the above

[15] Which of following is not a UML diagram used creating a system analysis model?
a) Activity Diagram
b) Class Diagram
c) Sequence Diagram
d) Data Flow Diagram

Q : 2   Attempt any five of the following: [15]

[1] Explain in brief elements of analysis model.

[2] Explain class based component designing.

[3] Write a brief note on alpha testing.

[4] Explain taking example when prototyping model is problematic?

[5] Define: Requirement Elicitation.

[6] Explain attributes taking suitable example.

Q : 3   Attempt any three of the following: [15]

[1] Define: Software. Explain software engineering as a layered approach.

[2] Define: Requirement validation. Explain requirement validation process.

[3] Write a note on object oriented analysis.

[4] What is debugging? Explain in details process of debugging.

Q : 4   Attempt any two of the following: [15]

[1] What is Requirement analysis? Explain behavioral model for software analysis.

[2] What is agility? Write a note on adaptive software development

[3] List out various software design concepts and explain in brief any two of the following :

(1) Information Hiding (2) Structural portioning (3) Abstraction.

Q : 5   Attempt any one of the following: [10]

[1] Define: software testing. Explain black box testing and white box testing in detail .

[2] List out various process models of software engineering to build software. Explain RAD model to build software. What are the drawbacks of RAD model?