ROLL NO. _____

Code: AC63/ AT63 Subject: SOFTWARE ENGINEERI

AMIETE – CS/IT

Time: 3 Hours **DECEMBER 2013** **Max. Marks: 10**

PLEASE WRITE YOUR ROLL NO. AT THE SPACE PROVIDED ON EACH PAGE IMMEDIATELY AFTER RECEIVING THE QUESTION PAPER.

NOTE: There are 9 Questions in all.

- **Question 1 is compulsory and carries 20 marks. Answer to Q.1 must be written in the space provided for it in the answer book supplied and nowhere else.**
- **The answer sheet for the Q.1 will be collected by the invigilator after 45 Minutes of the commencement of the examination.**
- **Out of the remaining EIGHT Questions, answer any FIVE Questions. Each question carries 16 marks.**
- **Any required data not explicitly given, may be suitably assumed and stated.**

Q.1 Choose the correct or the best alternative in the following: (2×10)

a. Description of communicating objects and classes that are customized to solved a general problem in a particular context is called

(A) Design Pattern **(B)** System Pattern
(C) System Design **(D)** None of these

b. Thin Client model is one of the configurations of _____ model.

(A) Data Centred **(B)** Client-Server
(C) Layered **(D)** Reference

c. If requirements are frequently changing, which model is best suited.

(A) Water fall **(B)** Spiral
(C) Prototype **(D)** RAD

d. Statistically, the maximum percentage of errors belong to the following phase of SDLC

(A) Coding **(B)** Design
(C) Specifications **(D)** Installation and maintenance

e. 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) grey-box testing **(D)** white-box testing

f. Which one is not tester responsibilities?

(A) Assure the process for contracting software is adequate
(B) Review the adequacy of the contractors test plan
(C) Perform acceptance testing on the software
(D) Assure the ongoing operation and maintenance of the contracted software

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g. The testing technique that requires devising test cases to exercise the inter logic of a software module is called

(A) Behavioural testing **(B)** black-box testing
(C) grey-box testing **(D)** white-box testing

h. A data model consists of the following information?

(A) Data Object
(B) The attributes that describe data object
(C) Relationship that connect data object to one another
(D) All of these

i. Testing OO class operations is made more difficult by

(A) Encapsulation **(B)** Inheritance
(C) Polymorphism **(D)** Both **(B)** and **(C)**

j. How is an application's "version" different from its "release"?

(A) A release is a small change to an earlier release.
(B) A version is a small change made to an earlier version.
(C) A version is the one made available to customers and a release is a change to a previous version.
(D) A release is the one made available to customers and a version is a change to a previous release**.**

Answer any FIVE Questions out of EIGHT Questions.
Each question carries 16 marks.

Q.2 a. What is a risk? Is it economical to do risk management? What is the effect of this activity on the overall cost of the project? **(4)**

b. Differentiate between generic and customised software products. Also give a brief note on legacy system. **(4)**

c. Describe the various phases of a software development life cycle model. Compare evolutionary development model and iterative enhancement model. **(8)**

Q.3 a. Discuss the general format of a SRS document and discuss its main components in detail. **(8)**

b. Explain the types of feasibility in requirement engineering? Discuss the validity of using cost benefit analysis, especially in socially useful applications. **(4)**

c. Differentiate between a context model and a data model. How are they represented? **(4)**

Q.4 a. Give key characteristics of agile models. How is extreme programming an important tool in software engineering discipline? Explain. **(4)**

b. What is a formal specification in software engineering? Give its uses an limitations. **(4)**

c. Perform the requirements workflow for a library management system with respect to a rapid application model. **(8)**

Q.5 a. Explain distributed object architectures with the help of an example. Write down advantages of the distributed object model. **(8)**

b. Briefly describe event-driven control models. Differentiate between following two event-driven control models: Broadcast models and Interrupt-driven models. **(8)**

Q.6 a. Differentiate between function oriented design and object oriented design. Explain various stages of an object-oriented design. **(8)**

b. What do you mean by component composition? Explain different types of composition. **(8)**

Q.7 a. Provide a diagram for user interface design life cycle. Explain its steps in brief. **(6)**

b. Write about various essential characteristics of dependable processes. **(6)**

c. Give a detailed description on fault tolerant architectures. **(4)**

Q.8 a. "System testing can be considered as a pure black box test". Justify your answer. What are the drivers and stub modules in the context of integration and unit testing of software product? Why are they required? **(6)**

b. Under what different situations are Cost Estimation Models and COCOMO Models used? Give a brief description of COCOMO-II model. **(6)**

c. Explain, with the help of a diagram the process of software validation. **(4)**

Q.9 a. Discuss various key process areas of CMM at various maturity levels. **(5)**

b. Describe following static software product metrics:
(i) Fan-in / Fan-out
(ii) Length of code
(iii) Length of identifiers **(6)**

c. Explain the following terms: **(5)**

(i) Change request form
(ii) Change Control process