ROLL NO. _____

**Code: AC63/ AT63 Subject: SOFTWARE ENGINEERI**

**AMIETE – CS/IT**

**Time: 3 Hours** **JUNE 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.**

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

a. Name the risks that derive from changes to the customer requirements and the process of managing the requirements change?

**(A)** Customer risks **(B)** Requirements risks
**(C)** Technology risks **(D)** Estimation risks

b. Which of the following is a metric for specifying non-functional requirements?

**(A)** Speed **(B)** Line of codes
**(C)** POWER **(D)** None of these

c. Name the approach where the system is described in terms of operations and their relationships?

**(A)** Model-based approach **(B)** Interface approach
**(C)** Algebraic approach **(D)** System modelling approach

d. COTS stands for

**(A)** Commercial-of-the-self
**(B)** Commercial-on-the-self
**(C)** Commercial-off-the-shelf
**(D)** Commercial-on-the-shelf

e. _____ architectures are decentralized architectures where there are no distinguished clients and servers.

**(A)** Service-oriented **(B)** Distributed object
**(C)** Middleware **(D)** Peer-to-peer

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f. Which model shows how individual objects change their state in response to events?

**(A)** Sequence models **(B)** State machine models
**(C)** Subsystem models **(D)** Object interface models

g. Software _____ is work done to enhance software functionality, correct errors and improve the performance of software.

**(A)** Design **(B)** Maintenance
**(C)** Reverse engineering **(D)** Corrections

h. _____ involves using programming constructs and techniques that contribute to fault avoidance and fault tolerance.

**(A)** Extreme programming **(B)** Safe programming
**(C)** Exception handling **(D)** Dependable programming

i. In which testing the test teams have access to the source code of the system?

**(A)** Integration testing **(B)** Release testing
**(C)** Beta testing **(D)** Functional testing

j. Name the metrics that are collected by measurements made of a program in execution?

**(A)** Static **(B)** Dynamic
**(C)** Project **(D)** Quality

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

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**Q.2** a. Define software process. Explain the software process model. **(8)**

b. List the different steps of management activities. **(4)**

c. What are the advantages of incremental development process? **(4)**

**Q.3** a. Give example of the type of system models that you might create during the analysis process? **(4)**

b. Give the structure suggested by IEEE/ANSI 830 – 1998 for requirements documents. **(4)**

c. What do you understand by requirement elicitation? Discuss any two techniques in detail? **(8)**

**Q.4** a. What are the activities involved during the process of developing a form specification of a sub-system interface? **(6)**

b. What is Pair Programming? What are the advantages of pair programming? **(5)**

c. What do you mean by RAD? What are the tools included in RAD environment? **(5)**

**Q.5** a. What are the non-functional system requirements that may be chosen for an application for a particular style and structures? **(6)**

b. Write the advantages and disadvantages of broadcast model approach? **(5)**

c. Discuss the important characteristics of distributed approach to system development? **(5)**

**Q.6** a. What are the key factors that one should consider while planning for software reuse? **(8)**

b. Define component? How components are different from objects? **(8)**

**Q.7** a. What do you mean by user interaction? What are the different styles in which forms of interaction can be classified? Give one advantage, disadvantage and an example of each style. **(2+4+4)**

b. For small and medium sized systems, what is the software engineering approach to develop tool, techniques and methods that leads to the production of fault-free software? **(6)**

**Q.8** a. What do you mean by software inspection? Write major advantages of inspection over testing? **(5)**

b. What are Test Principles and what are the attributes of a "good" test? **(7)**

c. Describe two metrics that have been used to measure software productivity? **(4)**

**Q.9** a. Explain the different types of CASE Tools. **(8)**

b. With the help of a figure, explain the key stages of software measurement process which is a part of a quality control process? **(8)**