Code: AC63/AT63/AC114/AT114   **Subject: SOFTWARE ENGINEERING**

AMIETE – CS/IT   (Current & New Scheme)

Time: 3 Hours   **JUNE 2016**   **Max. Marks: 100**

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. The role of an integrated CASE tool in system analysis and design project is _____.

   (A) Providing a CASE study for software development
   (B) To provide an environment that automates key tasks throughout software development process.
   (C) To provide tool for creating a word file.
   (D) None of these.

b. Systems should focus on developing end user input/output methods, data structures and programs and procedures. Select a best fit for this answer.

   (A) System Analysis   **(B)** Functional requirement
   (C) System design   **(D)** User interface, data and process design

c. If every requirement stated in the Software Requirement Specification (SRS) has only one interpretation, SRS is said to be

   (A) Correct   **(B)** Unambiguous
   (C) Consistent   **(D)** Verifiable

d. Which one of the following is not a component of object oriented software engineering?

   (A) Process   **(B)** Method
   (C) Architecture   **(D)** None of these

e. Structural analysis is done using :

   (A) Behavioral modeling   **(B)** Class-based modeling
   (C) Sequence models   **(D)** Finite State machine

f. An architectural style encompasses which of the following elements?

   (A) Constraints   **(B)** Set of components
   (C) Semantic models   **(D)** All of these

g. Which architecture is used when there is a high volume of transactions to be processed by the server?

   (A) Multi-tier client–server architecture
   (B) Master-slave architecture
   (C) Distributed component architecture
   (D) Peer-to-peer architecture

h. Consider the example and categorize it accordingly, "A pattern-matching system developed as part of a text-processing system may be reused in a database management system".

   (A) Application system reuse   **(B)** Component reuse
   (C) Object and function reuse   **(D)** None of these

i. Which of the following term describes testing?

   (A) Finding broken code   **(B)** Evaluating deliverable to find errors
   (C) A stage of all projects   **(D)** None of these

j. Quality Management in software engineering is also known as

   (A) SQA   **(B)** SQM
   (C) SQI   **(D)** SQA and SQM

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

Q.2 a. Is software engineering a science or an art? Justify.   **(6)**

b. What exactly is the present software crisis? What are its symptoms, causes, and possible solutions?   **(5)**

c. Describe the different activities involved in the project planning.   **(5)**

Q.3 a. List and brief five desirable characteristics of a good software requirements specification (SRS) document.   **(5)**

b. Explain in detail the major activities involved in the requirement validation.**(6)**

c. Explain the importance of the DFD in problem analysis.   **(5)**

Q.4 a. Why the waterfall-based software development was becoming difficult to use in project in recent times? Give reasons, and explain how the agile software development model used to overcome the serious shortcoming of the waterfall model.   **(8)**

b. Describe the necessity of the prototyping model.   **(5)**

c. How does RAD facilitate accommodation of change requests?   **(3)**

Q.5 a. Discuss the issues in order to preserving the Integrity of Architecture.   **(10)**

b. What is client-server model? What are the major components of this model?
                                                                           (6)

Q.6   a.   Write down the stages for the object oriented design process.   **(5)**

        b.   Explain the benefits of software reuse and write down the problem of software reuse.   **(7)**

        c.   Write the difference between components and objects.   **(4)**

Q.7   a.   List and explain any six important characteristics of a good user interface.   **(6)**

        b.   Discuss some of the general design issues that have to consider by UI designer.   **(5)**

        c.   Explain the two approaches to software fault tolerance with block diagram. **(5)**

Q.8   a.   Explain the stages involved in static analysis.   **(5)**

        b.   Explain interface testing with block diagram. Write the different types of interfaces between program components and list some interface errors that can occur.   **(7)**

        c.   Write down the factors affecting software engineering productivity.   **(4)**

Q.9   a.   Write down the product standards and process standards of quality assurance.   **(5)**

        b.   Explain different types of classes of software processes.   **(5)**

        c.   Write down the factors that influence system release strategy.   **(6)**