

AMIETE – CS/IT (NEW SCHEME)

Time: 3 Hours

JUNE 2012

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. A set of activities that ensures that the software built is traceable to customer requirements

(A) verification

(B) validation

(C) corrections

(D) re-engineering

b. What is software engineering?

(A) Set of computer programs, procedures and possibly associated document concerned with the operation of data processing.

(B) Software engineering is Design, Coding, Development

(C) Software engineering implement a single independent function

(D) Software engineering is the establishment and use of sound engineering practice in order to produce economical and reliable software that will perform efficiently on real machine

c. _____ is developed or engineered, not manufactured

(A) Software

(B) Product

(C) System

(D) All of above

d. Which statement about a prototype is true?

(A) It is a functional model of the entire system.

(B) It is the complete untested product ready for final review by the customer.

(C) It is necessary in order to accurately verify that the product is progressing in accordance with requirements specifications.

(D) It is a full-scale model of the entire system at some partial stage in development showing the functional form of the system.

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

- e. Spiral model incorporates:
- (A) Programming (B) Documentation
(C) Risk analysis (D) Prototyping
- f. Which statement about the preliminary design stage of a software development project is true?
- (A) The preliminary design is an internal document used only by programmers.
(B) The preliminary design is the result of mapping product requirements into software and hardware functions.
(C) The preliminary design of the product comes from the initial meetings between the customer and the programmer.
(D) The developers produce the preliminary design by defining the software structure in enough detail to permit coding.
- g. A data dictionary was created during the requirements analysis phase of a software engineering project. What information does it contain?
- (A) content description (B) data type
(C) restrictions (D) all of the above
- h. Which is the last step in classic life cycle paradigm?
- (A) Analysis (B) Design
(C) Coding (D) Maintenance
- i. Undergoing several updates to adapt to the continually changing business needs is called as:
- (A) Testing (B) Implementation
(C) Specification (D) None of above
- j. What is the correct statement with respect to software quality?
- (A) The Capability Maturity Model (CMM) is a scheme to classify a software development organization according to its capability.
(B) The quality management process starts before the design stage of the software development process.
(C) A quality plan sets out the desired product qualities and how they are assessed.
(D) Each deliverable of the software development process is an input to the quality management process.

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

- Q.2** a. What do you mean by system requirements and system design? (6)
b. With the help of a diagram explain the software lifecycle. (6)
c. Explain the risk management process. What are the different categories of risk? (6)
- Q.3** a. Differentiate between the functional and non functional requirements. (8)
b. What are the activities performed during the requirement engineering process? (8)
- Q.4** a. Explain the various stages of software specification and its interface with the design process. (8)
b. Explain the RAD technique in detail. (8)
- Q.5** a. Explain the CASE toolset architecture. (8)
b. Differentiate between two-tier client server approach and three-tier client server architecture. (8)
- Q.6** a. Explain the various stages of object oriented design. (4)
b. What are the benefits and problems of software reuse? (6)
c. Explain the basic elements of a component model. (6)
- Q.7** a. Explain the general principles of user interface design. (8)
b. What are the various characteristics of dependable processes? (8)
- Q.8** a. Discuss the difference between Verification and Validation. (6)
b. What are the different levels of testing? (4)
c. Explain the basic COCOMO model. (6)
- Q.9** a. What are the different levels of CMM? (8)
b. What is SQA (Software Quality Assurance)? Discuss the different software quality factors. (8)