

DipIETE – CS

Time: 3 Hours

JUNE 2013

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 ensure that the software that has been built is traceable to customer requirements:-

- (A) verification (B) validation
(C) corrections (D) re-engineering

b. Which of the following statement is best defining software engineering?

- (A) It is 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 these

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.

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 these
- 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 these
- j. Effort is measured in terms of
- (A) person-months (pm) (B) persons (p)
(C) months (m) (D) wages (w)

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

- Q.2** a. What do you mean by system requirement and system design? (4)
- b. With the help of a suitable 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)

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- b. What are the various 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. With the help of a neat diagram, draw and explain the RAD model. (8)
- Q.5** a. Explain Modular Decomposition Style. Also write various properties of a modular system. (8)
- b. Differentiate between two-tier Client Server approach and three-tier Client Server architecture. (8)
- Q.6** a. Explain different stages of an object oriented design process. Use suitable examples wherever necessary. (8)
- b. Discuss the benefits and problems of software reuse. (8)
- Q.7** a. Explain the general principles of user interface design. (8)
- b. Explain the basic elements of a component model. Write a brief note on CBSE. (8)
- Q.8** a. Differentiate between Verification and Validation. (4)
- b. What are the different levels of testing? Explain briefly. (6)
- c. Write a note on “Automated Static Analysis”. (6)
- Q.9** a. What do you mean by version and release management? What are the basic techniques for component version identification? (8)
- b. What is SQA? Discuss different software quality factors. (8)