

DipIETE – CS

Time: 3 Hours

DECEMBER 2014

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. FP-based estimation techniques require problem decomposition based on _____
- (A) information domain values (B) project schedule
(C) software functions (D) process activities
- b. Software feasibility is based on which of the following:
- (A) Business and marketing concerns
(B) Scope, constraints, market
(C) Technology, finance, time, resource
(D) Technical prowess
- c. What types of models are created during software requirements analysis?
- (A) Functional and behavioural
(B) Algorithmic and data structure
(C) Architecture and structural
(D) Usability and reliability
- d. The ISO quality assurance standard that applies to software engineering is _____
- (A) ISO 9000 (B) ISO 9001
(C) ISO 9002 (D) ISO 9003
- e. Which of the following is not an attribute of software engineering?
- (A) Efficiency (B) Scalability
(C) Dependability (D) Usability

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- f. The spiral model of software development _____
- (A) Ends with the delivery of the software product
 - (B) Is more chaotic than the incremental model
 - (C) Includes project risks evaluation during each iteration
 - (D) All of these
- g. Site for Alpha Testing is _____
- (A) Software Company
 - (B) Installation place
 - (C) Any where
 - (D) None of these
- h. FAST stands for _____
- (A) Functional Application Specification Technique
 - (B) Fast Application Specification Technique
 - (C) Facilitated Application Specification Technique
 - (D) None of these
- i. The testing that focuses on the variables is called _____
- (A) black box testing
 - (B) white box testing
 - (C) data variable testing
 - (D) data flow testing
- j. If a program in its functioning has not met user requirements in some way, then it is _____
- (A) an error
 - (B) a failure
 - (C) a fault
 - (D) a defect

Answer any FIVE Questions out of EIGHT Questions.

Each question carries 16 marks.

- Q.2** a. What are the key challenges being faced by software engineering? (3)
- b. What is meant by risk management? Explain risk management process. (1+8)
- c. What are the advantages of incremental development process? (4)
- Q.3** a. Explain the following terms giving suitable example: (3)
- (i) Functional requirement
 - (ii) Non-functional requirement
 - (iii) Domain requirement

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- b. What are the activities involved during the process of developing a formal specification of a sub-system interface? (6)
- c. What is a distributed system? Identify & explain the advantages of using a distributed approach to systems developments. (2+5)
- Q.4** a. What is Pair Programming? What are the advantages of pair programming?(8)
- b. What is requirement elicitation and analysis in requirement engineering process? Why is it difficult to elicit and understand stakeholder requirement? (8)
- Q.5** a. Differentiate between two-tier Client Server approach and three-tier Client Server architecture. (6)
- b. Describe design walk throughs and critical design review. (4)
- c. What is stepwise refinement? Discuss partitioning & abstraction. (6)
- Q.6** a. Explain the reuse maintenance model with the help of a diagram. (6)
- b. Explain the following Software Metrics (3×2)
(i) Lines of Code (ii) Function Count (iii) Token Count
- c. Differentiate between function oriented design and object oriented design. (4)
- Q.7** a. What are essentials of a Component Based Software engineering? List few problems associated with CBSE. (8)
- b. Explain the various ways in which object classes can be identified in the object identification stage of object-oriented design. (8)
- Q.8** a. Explain various types of static and dynamic testing tools. (6)
- b. Differentiate between failures and faults. (2)
- c. What do you understand by black box testing? Explain: (8)
(i) Equivalence class (ii) Equivalence partitioning
- Q.9** a. What is SQA? Discuss different software quality factors. (6)
- b. What do you understand by software configuration? Differentiate among release, version and revision of a software product. (6)
- c. Write a short note on software quality review and review process. (4)