

DiplETE – 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. To produce a good quality product, process should be _____
- (A) Complex (B) Efficient
(C) Rigorous (D) None of these
- b. Reliability of software is usually estimated at _____
- (A) Analysis Phase (B) Design Phase
(C) Coding Phase (D) Testing Phase
- c. Multiple inheritance _____
- (A) Supports only base class default constructors
(B) Cannot have virtual functions
(C) Can include virtual classes
(D) None of the above
- d. The main aim of software engineering is to produce _____
- (A) Program
(B) Executable code
(C) Within budget
(D) Efficient Software
- e. _____ is the process of defining the current problem, determining why a new system is needed, identifying the objectives of the proposed system.
- (A) Feasibility analysis
(B) System analysis
(C) System definition
(D) System requirements

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- f. A context diagram _____
- (A) describes the context of a system
 - (B) is a DFD which gives an overview of the system
 - (C) is a detailed description of a system
 - (D) is not used in drawing a detailed DFD
- g. _____ is a tabular method for describing the logic of the decisions to be taken.
- (A) Decision tables
 - (B) Decision tree
 - (C) Decision Method
 - (D) Decision Data
- h. Which of the following are the level(s) of documentation?
- (A) Documentation for management
 - (B) Documentation for user
 - (C) Documentation for data processing department
 - (D) All of the above
- i. _____ level supply information to strategic tier for the use of top management.
- (A) Operational
 - (B) Environmental
 - (C) Competitive
 - (D) Tactical
- j. The main ingredient of the report documenting the _____ is the cost benefit analysis.
- (A) System Analysis
 - (B) Feasibility Study
 - (C) System Analyst
 - (D) System Design

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

- Q.2** a. What are the differences between internal and external users of an Information System ? Give examples. (8)
- b. Describe the four knowledge building blocks of an information system. (8)
- Q.3** a. Explain any two strategies for each of the following:- (2x4=8)
- (i) Alternative routes and strategies
 - (ii) Automated tools and technology
- b. Explain the following system development process :- (2x4=8)
- (i) Cross life-cycle activities
 - (ii) Sequential versus iterative development

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- Q.4** a. Define briefly :- (8)
 (i) System Analysis (ii) System Design
 (iii) Information System Analysis (iv) Repository
- b. Explain various tasks for any two of the following:- (8)
 (i) Requirements analysis phase
 (ii) Logical design phase
 (iii) Decision analysis phase
- Q.5** a. Explain the four steps required in the process of Use Case Modeling. (8)
- b. Define Data Modeling. Explain the process of Logical Data Modeling and give an illustration. (8)
- Q.6** a. Describe the four steps for organizing the objects & identifying their relationships using class diagram. Give an illustration. (8)
- b. Explain the following System design approaches :- (4x2=8)
 (i) Model – Driven Approach
 (ii) Rapid Application Development
- Q.7** a. Explain the type of users, human factors and human engineering guidelines that effect the user interface design. (6)
- b. Explain the features of any three Graphical User Interface Styles and Considerations. (6)
- c. Explain in brief the role of automated tools for User Interface Design and Prototyping. (4)
- Q.8** a. Explain the following object-oriented system features :- (2x4=8)
 (i) Persistence class (ii) Interface class
 (iii) Method Visibility (iv) Object Responsibility
- b. Explain the features of design patterns. (2)
- c. Explain briefly the following and give an illustration for each : (3x2=6)
 (i) Strategy Pattern
 (ii) Organization Pattern
 (iii) Adapter Pattern
- Q.9** a. Explain in detail various implementation phase tasks . Give the illustration of system implementation tasks. (6+2=8)
- b. Define : (i) system maintenance (ii) technical support (8)
 (iii) system recovery (iv) system enhancement