

DiplETE – CS

Time: 3 Hours

DECEMBER 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. Which is not a software life cycle model?

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|-------------------------|-------------------------------|
| (A) Waterfall model | (B) Spiral model |
| (C) Quick and fix model | (D) Capability maturity model |

b. If the requirements are frequently changing, which model is best suited

- | | |
|---------------------|-----------------------|
| (A) Waterfall model | (B) Prototyping model |
| (C) RAD model | (D) Spiral model |

c. Outcome of the requirements specification phase is

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|---------------------|---|
| (A) Design document | (B) Software requirements specification |
| (C) Test document | (D) None of these |

d. Requirement elicitation means

- | | |
|-----------------------------------|-------------------------------|
| (A) Gathering of requirements | (B) Capturing of requirements |
| (C) Understanding of requirements | (D) All of these |

e. The extent to which different modules are dependent upon each other is called

- | | |
|----------------|---------------|
| (A) Coupling | (B) Cohesion |
| (C) Modularity | (D) Stability |

f. Which level of CMM is for process control?

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|-------------|----------------|
| (A) Initial | (B) Defined |
| (C) Managed | (D) Optimizing |

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g. Cyclomatic complexity is equal to

- (A) Number of independent paths (B) Number of paths
(C) Number of edges (D) None of these

h. Equivalence class partitioning is related to

- (A) Structural testing (B) Black box testing
(C) Mutation testing (D) All of these

i. An ATM system is an example of

- (A) Thin Client architecture (B) Fat Client architecture
(C) Distributed object architecture (D) Multiprocessor architecture

j. Debugging is the technique of

- (A) Locating errors (B) Locating and correcting errors
(C) Correcting errors (D) None of these

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

- Q.2** a. Explain the concept of socio-technical systems. What are the characteristics of socio-technical systems? (8)
- b. Explain the Waterfall model. Illustrate your answer with the help of Block diagram. (8)
- Q.3** a. Explain various stages of Requirement Engineering process. Illustrate your answer with the help of Block Diagram. (8)
- b. What is Software Requirement Specification (SRS)? List five desirable characteristics of a good SRS document. (8)
- Q.4** a. Explain the various stages in the general process of an object-oriented design. (8)
- b. Explain various key factors that are considered when planning application system reuse. (8)
- Q.5** a. Explain the process of Formal specifications in the software process. List various activities that are performed while developing formal specifications of sub system interface. (8)

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- b. Define and explain Agile Methods. What are Principles of Agile Methods? Illustrate with the help of taking example of widely used Agile methods. (8)
- Q.6** a. Describe Client-Server architecture. What are various types of Client-Server Architecture? Explain. (8)
- b. Write advantages and disadvantages of a shared repository. (8)
- Q.7** a. What are different approaches used for user interface prototyping. Explain. (8)
- b. Components are usually developed using object oriented approach. Explain how components differ from objects. (8)
- Q.8** a. What are different levels of testing? List various goals of different levels, for each level specify which of the testing approaches is most suitable. (8)
- b. Explain the term “Software Inspection”. List major advantages of inspection over testing. (8)
- Q.9** a. Define and explain Release Management. Explain various factors that influence system release strategy. (8)
- b. Define and explain various static software product metrics. (8)