Code: DC65   **Subject: SOFTWARE ENGINEERING**

DipIETE – 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?

      (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

      (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?

      (A) Initial   **(B)** Defined
      (C) Managed   **(D)** Optimizing

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)**