USN | | | | | | | | | | |

10MCA42

Fourth Semester MCA. Degree Examination, Dec.2014/Jan.2015
Software Engineering

Time: 3 hrs. Max. Marks:100

Note: ***Answer any FIVE full questions.***

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.

Highly confidential document EDC 021, @ 12/11/2014 1:05:36 PM

1 a. Define Software Engineering. Describe the essential attributes of a good software. **(06 Marks)**
b. Discuss the professional responsibilities of a software engineer. **(06 Marks)**
c. Define system design. With a neat diagram, explain the various activities involved in the system design process. **(08 Marks)**

2 a. Explain the component – based software engineering process model and state its advantages. **(10 Marks)**
b. With a neat diagram, explain the salient features of the spiral development model. **(10 Marks)**

3 a. What are non – functional requirements? With the help of a neat diagram show the classification of different types of non – functional requirement. **(10 Marks)**
b. Briefly describe the various technique used in the requirement discovery process. **(10 Marks)**

4 a. Mention different types of system models based on different approaches to abstraction and draw a DFD modeling data processing involved when a customer withdraws cash from an ATM. **(10 Marks)**
b. What is the importance of Data Dictionary in a data model? Explain the data dictionary entries. **(10 Marks)**

5 a. What is meant by architectural design? Explain briefly about the repository model and the client server model. **(10 Marks)**
b. What is the difference between subsystems and modules? Describe two strategies to decompose a subsystem into modulus. **(10 Marks)**

6 a. What is Extreme programming? List out the practices in Extreme programming. **(06 Marks)**
b. Explain the rapid application development environment. **(06 Marks)**
c. List Lehman's laws on Program evolution dynamics. **(08 Marks)**

7 a. What is the need for software inspection? What are the advantages of inspection over testing? **(10 Marks)**
b. Explain the different phases involved in system testing. **(10 Marks)**

8 a. Describe the people capability maturity model for managing organization's human assets. **(10 Marks)**
b. Explain how the algorithm approach to cost estimation may be used by project managers for option analysis. **(10 Marks)**

*****