SVKM's NMIMS

MUKESH PATEL SCHOOL OF TECHNOLOGY MANAGEMENT & ENGINEERING

Programme: MBA Tech (Computer) Year: II Semester: IV

Batch: 2016-2017

Academic Year: 2016-2017

Subject: Software Engineering

Date: 12 July 2017

Marks: 70
Time: 02.00 pm to 05.00 pm
Durations: 3 (hrs)
No. of Pages: 02

Re-Examination

Instructions: Candidates should read carefully the instructions printed on the question paper and on the cover of the Answer Book, which is provided for their use.

1) Question No. **01** is compulsory.
2) Out of remaining questions, attempt any **04** questions.
3) **In all 05 questions to be attempted.**
4) All questions carry equal marks.
5) **Answer to each new question to be started on a fresh page.**
6) **Figures in brackets on the right hand side indicate full marks.**
7) **Assume Suitable data if necessary.**

1.	(a)	What are the two well known principles used in software engineering to tackle the complexity of development of large program?	(7)
	(b)	Explain Spiral Model in detail and under what circumstances is it beneficial.	(7)
2.	(a)	Differentiate between functional and non-functional requirements. With appropriate block diagram explain the requirement engineering process.	(7)
	(b)	How COCOMO Model work for the cost estimation? Explain in detail.	(7)
3.	(a)	Consider a database application project with the following characteristics: **I.** The application has 4 screens with 4 views each and 7 data tables for 3 servers and 4 clients. **II.** The application may generate two report of 6 sections each from 07 data tables for two server and 3 clients. There is 10% reuse of object points. The developer's experience and capability in the similar environment is low. The maturity of organization in terms of capability is also low. Calculate the object point count, New object points and effort to develop such a project.	(7)
	(b)	What are the activities performed during SQA?	(7)
4.	(a)	What is Software Architecture? List the system structuring styles with suitable diagram.	(7)
	(b)	With appropriate block diagram explain Extreme programming process model.	(7)
5.	(a)	Perform the path testing for the following program flow graph by computing cyclomatic complexity:	(7)

(b) Compute the function point value for a project with the following information domain characteristics: (7)

Number of user inputs = 20
Number of user outputs = 32
Number of user enquiries = 04
Number of files = 03
Number of external interfaces = 2
In addition to above, system requires—

1. Significant data communication.
2. Performance is very critical.
3. Designed code should be reusable.
4. System is not designed for multiple installations in different sites.

Other complexity adjustment factors are treated as average.
Compute Function Point for project.

6. (a) Construct Context diagram and DFD level 1 for the following problem statement: (7)
Tic-Tac-Toe is computer game in which a human player and the computer make alternate moves on a 3*3 square. A move consists of marking a previously unmarked square. The player who is first to place three consecutive marks along a straight line (i.e. along a row, column or diagonal) on the square wins. As soon as either the human player or the computer wins, a message congratulating the winner is displayed. The computer always tries to win a game.

(b) Explain the golden rules for the User Interface Design. (7)

7. Write short note on (any two) (14)

(i) Capability Maturity Model
(ii) SCRUM
(iii) Black Box V/s White Box Testing
(iv) McCall's Software Quality Factors