

**K. J. SOMAIYA INSTITUTE OF MANAGEMENT STUDIES AND RESEARCH,**  
**Vidyavihar (E), Mumbai- 400077**

Date:  
 11<sup>th</sup>  
 April'  
 18

**Program: MIM – II Sem. (2018-21 Batch)**  
**Subject: Software Engineering**  
**(End Term Examination)**

Time:  
 3 Hrs.

Note: Question 1 is compulsory  
 Attempt any 4 out of remaining 7

Marks  
 : 50

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|------|--|------|
| Q. 1 | Explain role of project manager in SDLC? Explain SDLC in detail.   | 10 M |
| Q. 2 | Explain Reliability metrics in detail with example each to justify.  | 10 M |
| Q. 3 | Explain extreme programming agile methodology in detail with appropriate diagram. Explain pros and cons of using pair programming.   | 10 M |
| Q. 4 | A software project application generator category with estimated 50 KLOC has to be developed. The scale factor (B) has low Precedentedness (4.96), high development flexibility (2.03) and low team cohesion (4.38). Other factors are nominal (RESL=4.24, PMAT=4.38). The early design cost drivers like Platform Difficult (PDIF=1.29) and Personnel Capability (PERS=0.83) are high and others are nominal (1.0) Calculate the effort in person months for the development of the project.  | 10 M |
| Q. 5 | Attempt any two from the following:<br>1. Data Flow anomaly<br>2. Statement, Branch and Path coverage<br>3. Equivalent class partitioning & Boundary Value analysis  | 10 M |
| Q. 6 | Consider a project with the following parameters<br>External Inputs(complexity weights given like complexity(4))<br>15 with low complexity(3), 7 with average complexity(4), 17 with high complexity(6)<br>External outputs<br>9 with low complexity(4),7 with average complexity(5), 13 with high complexity(7),<br>External inquiries<br>3 with low complexity(3),4 with average complexity(4),2 with high complexity(6)<br>Internal logical files<br>5 with low complexity(7), 2 with average complexity(10),1 with high complexity(15)<br>External interface files | 10 M |

3 with low complexity(5), 5 with average complexity(7), 2 with high complexity(10)

In addition, ( system require significant data communication, Performance is very critical, Designed code may be moderately reusable, user experience is very critical, System is not designed for multiple installations in different organizations, Other complexity adjustment factors are treated as average)

Compute the unadjusted and adjusted function points for the project.

Q. 7 A new project with estimated 400 KLOC embedded system has to be developed. 10 M  
Project manager has a choice of hiring from two pools of developers: embedded constants are ( $a_i=2.8, b_i=1.20, c_i=2.5, d_i=0.32$ )

1. Very high application experience (.82) with very little experience in programming language (1.14).

2. Very low application experience (1.29) but lot of experience with the programming language (.95).

What is the impact of hiring all developers from one or the other pool?

Q. 8 Explain any two of the following 10 M

1. SEI CMM
2. Six Sigma quality model
3. Software myths and their counter truths

**ALL THE VERY BEST!!!**