

# CS 3009: Software Engineering (B)

## Quiz 2

Time: 20 minutes

Max Marks: 20

Roll No. Solution

**Q1.**

**10 Marks**

Relate the concepts of Column 1 with concepts of Column 3. Write the most appropriate match in 'Correct Match' column. Write alphabet only and not the complete entry. Do not repeat the alphabet.

**Note:** There are extra mismatched entries in Column 3 that do not relate with any entry of column 1. Each entry in column 1 must have a match from column 3.

Entries	Correct Match	Mismatched Entries
Testing and Development Phases' Correspondence	B	A. A Science Fiction Film
Spike solutions, refactoring, story values	M	B. V-Model
Four Phases, OO, iterations, mini projects	I/N	C. RAD Model
Four phases, Determine and Evaluate Risks, evolutionary	E	D. Waterfall Model
Requirements well understood, stable and complete	D	E. Spiral Model
Requirements Unclear	H	F. Framework activities
Requirements Well Understood, scope constrained, short development cycle, sufficient human resources	C	G. Incremental Model
Short cycle time, subset of requirements well understood, scope of the project largely known, core product first	G	H. Prototyping Model
Communication, planning, modeling, construction	F	I. Unified Process
Inception	N/I	J. Scrum
		K. Risky Model
		L. Umbrella activities
		M. XP
		N. Unified Process

**Q2.**

**5 Marks**

List the process model that you think will be most appropriate for the following situation. Also, list your reason(s) for choosing a particular model. If you just list the process model without mentioning the reason(s), you will not be awarded any marks.

- Your team is starting work on a new project, but all the requirements and size of the project are not clear at the moment. The internal quality of the project cannot be compromised as it may incur huge financial losses in future. The client requires quarterly releases and will be providing feedback on each release. Your team is not in a position to implement spiral model due to lack of training and exposure.

## Process Model: Prototyping

Reason(s):

- Requirements are unclear.
- Feedback is possible, though not as frequently as in the case of agile projects
- Spiral is not possible
- If the size becomes large, extra effort needs to be employed to keep the entropy lower

**Q3.**

**5 Marks**

A team of software engineers is working on a project following scrum. At the start of each sprint they select a few user stories to work on. Assume that each user story is of 8 story points. Their selected and completed user stories in the first sprints are as follows:

**Sprint 1:** The team committed to complete 6 user stories (i.e. 48 story points). However, the team could complete **4** of the 6 user stories.

**Sprint 2:** The team committed 8 user stories (including the two that were not completed in sprint 1) and completed **5** of the 8 user stories.

**Sprint 3:** The team committed 9 user stories (including the three that were not completed in sprint 2) and completed **6** of the nine user stories.

**Sprint 4:** The team committed 9 user stories (including the three that were not completed in sprint 3) and completed **3** of the 9 user stories.

**To do:** Find project velocity to help the team provide a good estimate of work to be committed for sprint 5. Explicitly state the project velocity and then explicitly mention the number of stories and story points that the team should pick based on the calculated velocity.

Story points completed in sprint 1: 32

Story points completed in sprint 2: 40

Story points completed in sprint 3: 48

Story points completed in sprint 4: 24

Project velocity =  $(32+40+48+24)/4 = 144/4 = 36$  Story points

Should commit around 36 story points (4 to 5 user stories) for sprint 5