CS 3009: Software Engineering (D)

Quiz-1

Time: 20 minutes Max Marks: 25 Roll No: \_\_\_\_\_\_\_\_\_\_\_\_

Question 1: (15 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 to any entry of column 1. Each entry in column 1 must have a match from column 3.

| **Entries** | **Correct Match** | **Mismatched Entries** | |
| --- | --- | --- | --- |
| Deliver software in timely manner | C | A. | Agile process |
| Requirements complete and frozen | E | B. | Unified Process |
| Quick plan, quick design, quick review. Lack of focus on internal quality s.a. maintainability | R | C. | Intent of software process |
| Iterative nature of prototyping, systematic aspect of waterfall, evolutionary, risk identification | J | D. | Inception, Reception, Collaboration, Transition |
| Four phases, work on almost all disciplines in each phase, use of UML, mini projects | B | E. | Expectation of the Waterfall model |
| Core product first, scope largely known | O | F. | XP |
| Product backlog, user stories, sprints | P | G. | Maintenance |
| User stories, test driven development, pair programming, CRC cards | F | H. | Agile manifesto |
| Human resource hungry, short cycle time, parallel development of modules | N | I. | Problem with Waterfall Model |
| Respond to change, focus more on working software | H | J. | Spiral Model |
| Reduced cost of change during software development | A | K. | Framework activities |
| Visualizing workflow, limiting the amount of work in progress (WIP) | L | L. | Kanban |
| A phase in software lifecycle | G | M. | Umbrella Activities |
| User available for daily review of work, frequently changing requirements | Q | N. | RAD |
| Long wait before a running software can be seen | I | O. | Incremental Model |
|  |  | P. | Scrum |
|  |  | Q. | Select agile process |
|  |  | R. | Prototyping Model |

Question 2: (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.

* An existing software needs to be developed in a newer and better technology and your company has been assigned this task. The software has been running successfully for a few years and does not require any major changes in its functionalities in the newer technology i.e. same functions that are available in the current version will also exist in the updated version.

Process Model: Waterfall

Reasons:

* Requirements complete.
* Requirements stable.
* Requirements clear.
* No explicit mention of quick review or feedback.

Question 3: (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 has 5 story points. Their selected and completed user stories in the first sprints are as follows:

Sprint 1: The team committed to complete 12 user stories. However, the team could complete 9 of the 12 user stories.

Sprint 2: The team committed 8 user stories and completed 5 of the 8 user stories.

Sprint 3: The team committed 6 user stories and completed 6 user stories.

Sprint 4: The team committed 15 user stories and completed 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 explicitly then mention the number of stories and story points that the team should pick based on the calculated velocity.

**Sprint 1: 9 \* 5 story points = 45 story points**

**Sprint 2: 5 \* 5 story points = 25 story points**

**Sprint 3: 6 \* 5 story points = 30 story points**

**Sprint 4: 9 \* 5 story points = 45 story points**

**Total story points completed = 45 + 25 + 30 + 45 = 145 story points**

**Total sprints = 4**

**= 145 / 4**

**= 36.25 story points per sprint**

**Number of stories to pick = 36 / 5 ≈ 7**