BRAC UNIVERSITY
Department of Computer Science and Engineering

Examination: Quiz 1 Duration: 25 min
Semester: Fall 2024 Full Marks: 10

CSE 470: Software Engineering

Name: **ID:** **Section:**

You are a project manager at **TechWave Solutions**. Your team is approached by **Emma**, the founder of a startup called **HealthHub**, which aims to develop an app to help users improve their wellness through personalized advice.

Emma has a visionary idea but is unsure about all the features the app should include and expects the requirements to evolve over time. Your development team is also uncertain about the best technologies and algorithms to use, needing to explore and adapt during development. The project's success depends on enhancing software quality through repetitive refinement and adapting to new insights.

1.	**CO1**	a. Which software engineering approach would you choose to manage this project? [2] b. Write the pros and cons of your chosen software engineering approach, in the context of the given scenario. [4] c. Compare with other possible software engineering approaches, and why they were not chosen for this project.[4]	**10**

Answer:
a. The Iterative Process Model is the most suitable approach for this project.
b. Pros:

- Risks related to uncertain technologies or algorithms are identified and addressed in early iterations.
- Repetitive iterations improve the software quality over time, aligning with the need for personalized advice.
- Feedback after each iteration helps shape the app according to Emma's vision.
- Inconsistencies among requirements, designs, and implementations are detected early, minimizing long-term issues.

Cons:

- The output of each iteration is not always a fully functional product, which may delay the app's market entry.
- Without a fixed number of iterations, it can be challenging to predict the project's end date.
- Each iteration's phase (design, development, testing) is rigid and doesn't overlap, potentially slowing down progress.

c. Agile - Scrum:
Not chosen because it focuses on frequent delivery of potentially deployable increments, which adds unnecessary overhead for planning, reviews, and sprint management, which are not needed for a project focused on refinement rather than frequent releases.

Agile - Extreme Programming (XP):
Not chosen as XP's practices like releases, test-first development, and pair programming introduce significant overhead, and deployable increments are unnecessary for the project. Also, since the team is uncertain about which technologies to use, it is impossible to guarantee the availability of automated testing, so XP wasn't chosen.

Agile Unified Process (AUP):
Not chosen because AUP combines iterative refinement with Agile principles but has overhead from structured workflows and continuous activity from all developers, which are unnecessary for this project.

Incremental Process Model:
Not chosen as it prioritizes delivering increments, adding overhead for deployment, which does not align with the project's need for refinement without constant deliverables. Also, the incremental process model needs a predetermined final product in order to plan out the various increments, which is impossible in this case.