United International University (UIU)

Dept. of Computer Science & Engineering (CSE)

Exam Name: Mid Term Exam   Trimester: Spring 2025
Course Code: PMG 4101, Course Title: Project Management
Total Marks: **30**   Duration: 1 hour 30 minutes

Any examinee found adopting unfair means will be expelled from the trimester / program as per UIU disciplinary rules.

Answer all the questions.

Consider the following Scenario:

The Recent success of BYD and TESLA have inspired a Bangladeshi business group to build an Electric Car Brand. They have picked your company for building the necessary software for their car and company needs. They need a platform to showcase their cars, the features of their cars, selling their cars and necessary functionalities. The client also needs you to develop a system that finds path of the charging station near you and recommend a route. They also required an AI system for self-driving cars but due to budget and time constraint discard this feature.

After market analysis you and the client realized that the EV market is also changing so you must keep adding more feature to stay competitive. So, you decided to make a system that will collect the customer feedback and statistics so your team can identify the most important features and implement them.

The client approved your team's approach and given your team two years to build necessary software. But they asked your team to add new features if they request it in the future and the software might need to increase its scope to more vehicles other than cars.

After realizing the massive scope of the project, you decided to break it into smaller modules. Building one module at a time and evaluating it with the clients and updating it as required. You also realized that there will be a need of data-science specialist to build the statistic systems and AI/ML systems if need arises in the future which the current team lacks. Furthermore, there is risk of network security issues with EVs which might impact some project management variables.

Your team decided to divide the work in platform, EV software, security, AI/ML modules to make sure every component gets proper attention and ease of communication. Also ensure competitiveness with the present market you decided to do a meeting after each module completion to find out if any new feature is needed. This ensures gradual improvement and competitiveness in future. As the project manager, you will need to manage the project. According to this scenario, answer the following questions.

1. Choose a software engineering methodology for developing the above-mentioned project and discuss the rationale for choosing the methodology. Discuss in which situation/type of project, Waterfall methodology will be more appropriate.

    [**CO1**]   **5**

2. Write down the Vision and Scope Document for the project described above following proper outline.   [**CO2**]   **5**

3. As a project manager develop the WBS for the scenario described above and estimate (duration unit of month) for the major **WBS pieces**/ components for the above scenario following the principles and rules.   [**CO3**]   **5**

4. Write down activities of the moderator during the 'Assemble Tasks' for Delphi Wideband Estimation (DWE) technique. Suppose you want to form an estimation team consisting of five members. Show the steps of estimation session (one estimation form and tentative convergence/assemble chart of estimation duration) for the above-described project, according to DWE method.   [**CO3**]   **5**

5. Now as a project manager you are preparing for risk mitigation. Develop a **Risk Plan sheet** showing at least three major risk information for the above scenario.

    [**CO2**]   **5**

6. Progress report submission and presentation on Methodology selection, Risk management, Work Breakdown Structure and Delphi Wideband Estimation Technique etc. for a group project has been evaluated earlier (**Do not answer this question**, **already completed in classroom**).   [**CO3**]   **5**

Sample Risk Plan Sheet Format

Risk ID	Risk Description	Probability		Impact	Risk Priority	Mitigation Strategy	Responsible Person