

Question 1

Q.1.1:

1. **Planning and Scheduling:** The project manager must create a detailed project plan, including timelines and milestones for developing the pothole detection mobile app. This applies by ensuring tasks like sourcing, interviewing, and budgeting are scheduled effectively to meet the Department of Road Works' deadlines.
2. **Team Management:** Assigning roles and responsibilities to the team is crucial. In this case, the project manager interviews and assigns tasks to developers, testers, and designers, ensuring a cohesive team effort.
3. **Budget Management:** Drawing up a proposal for the budget involves estimating costs for resources and tools. This applies by securing funding and controlling expenses to deliver the app within the allocated budget.

Q.1.2:

- **Goal of Negotiation:** The goal is to reach mutually beneficial agreements, ensuring project objectives are met while managing stakeholder expectations, resources, and constraints.
- **Helpfulness as a Skill:** Negotiation helps the project manager resolve conflicts, secure resources, and align team and stakeholder priorities. It ensures smooth progress and stakeholder satisfaction.
- **Scenario:** During the pothole detection app project, the project manager negotiates with the Department of Road Works to extend the deadline due to unexpected technical challenges. They use negotiation skills to propose a revised timeline, justifying the need with a cost-benefit analysis, and secure additional resources to maintain quality, ensuring project success.

Question 2

Q.2.1:

1. **Clear Communication:** Team members share ideas and updates openly, ensuring alignment on the pothole detection app's development goals.

2. **Collaboration:** Members work together, pooling skills to solve problems like integrating AI for pothole detection.
3. **Trust:** A trusting environment allows team members to rely on each other, enhancing productivity during tight deadlines.
4. **Adaptability:** The team adjusts to changes, such as new road work regulations, to keep the project on track.
5. **Goal Orientation:** The team focuses on delivering a functional app, aligning efforts with the Department's requirements.

Q.2.2:

1. **Cultural Diversity:** Involves team members from different cultural backgrounds. For example, a team with members from various regions might bring unique perspectives on road conditions, improving the app's accuracy for diverse environments. However, miscommunication due to cultural differences could delay development unless managed with cultural sensitivity training.
2. **Skill Diversity:** Includes varied technical expertise (e.g., AI specialists and UI designers). This can enhance the app's functionality, like optimizing detection algorithms, but may lead to coordination challenges if not integrated effectively, requiring clear role definitions.

Q.2.3:

- **Background:** I managed a website redevelopment project for a local business. The goal was to modernize their online presence within three months. The project faced scope creep and resource shortages but was completed on time with stakeholder support, making it a success.
- **Lessons Learned:**
 - **Scope Control:** Implementing a strict change request process prevented unplanned feature additions.
 - **Resource Planning:** Early identification of resource needs avoided mid-project delays.
 - **Stakeholder Engagement:** Regular updates kept stakeholders aligned, ensuring project support.

Question 4:

- **2 Technical Risks:**

- **Software Bugs:** Undetected errors in the app's code could lead to inaccurate pothole detection, delaying deployment.
- **Hardware Compatibility:** Issues with the mobile devices used for data collection (e.g., camera or GPS) may hinder functionality.
- **2 Human Resources Risks:**
 - **Skill Shortages:** Lack of expertise in mobile app development or AI algorithms could slow progress.
 - **Team Overload:** Overworking the team due to tight deadlines might reduce productivity or increase turnover.
- **1 External Risk:**
 - **Weather Conditions:** Unpredictable weather affecting road access could delay field testing of the app.

Question 5:

Q.5.1:

When working with Microsoft Project, you must remember that the project is a **relational database**. This means the project data (e.g., tasks, resources, timelines) is stored in interconnected tables, allowing dynamic updates and relationships between elements. It is important to note because:

- It enables efficient tracking of dependencies and resource allocation for the pothole detection app.
- Inaccurate data entry can affect the entire schedule, requiring careful management.
- Understanding this helps generate accurate reports for stakeholder updates.

Q.5.2:

Implementing a change request procedure in a project can help minimize scope creep by:

- **Formal Approval:** Requiring all changes (e.g., adding a new feature like traffic analysis) to be reviewed and approved prevents unauthorized additions.
- **Impact Analysis:** Assessing the effect on time and resources ensures changes align with project goals.

- **Documentation:** Tracking changes maintains focus on the original scope, avoiding feature overload.

For the pothole detection app, this would limit scope creep from stakeholder requests, keeping the project on track.