Task-2

Part-A

1. Nine Pillars Understanding:-

a- Why is using AI Development Agents (like Gemini CLI) for repetitive setup tasks better for your growth as a system architect?

Using AI Development Agents (like Gemini CLI) for repetitive setup tasks better for growth as a system architect Because AI takes care of repetitive setup work, so you can spend your time on the real skills that make you a system architect like designing the system, thinking about structure, solving big problems, and understanding how everything connects.

b- Explain how the Nine Pillars of AIDD help a developer grow into an M-Shaped Developer.

The Nine Pillars guide a developer through every stage of building software, researching, planning, coding, testing, deploying, and improving because you practice all these areas with AI support, you slowly become good at multiple skills instead of only one.

2. Vibe Coding vs Specification-Driven Development:-

a- Why does Vibe Coding usually create problems after one week?

Vibe coding means code based on feeling with no clear plan or roadmap.

After a week, the code becomes messy, confusing, hard to extend, and you forget why you wrote things

b- How would Specification-Driven Development prevent those problems?

Because you first write a clear structure of what the system should do.
This gives you consistency and a roadmap.
So the code stays clean, predictable, easy to update, and doesn't fall apart after a week.

3. Architecture Thinking

a- How does architecture-first thinking change the role of a developer in AIDD?

When you think about architecture first, you stop acting like someone who just writes code line-by-line. You start acting more like a planner who understands how the whole system should work before building it. Instead of jumping into coding, you make smarter decisions about structure, flow, and responsibilities. It makes you more thoughtful and more in control of the project.

b-Why should developers think in layers and systems instead of raw code?

If you only focus on raw code, everything feels messy. But when you think in layers, you understand how each part of the app talks to the other and what its job is. This makes your projects cleaner, easier to fix, and much easier to grow in the future.

Part B — Practical Task

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write one para specification for an email validation function, the function muct check that the email contains '@' symbol, includes a valid domain such as .com or
.org and returns clear eroor messages when the email is invalid. keep the explanation short and practical

The email validation function shall accept a string email address as input, returning a boolean indicating its validity and a descriptive error message if invalid.
It must verify the presence of a single "@" symbol and ensure the domain part includes a valid top-level domain, such as ".com", ".org", or similar recognized
extensions. The function should produce clear and specific error messages, distinguishing between issues like a missing "@" symbol, an improperly formatted domain,
or an unrecognized top-level domain, to guide the user effectively.
```

Part C — Multiple Choice   Questions

1. What is the main purpose of Spec-Driven Development?

A. Make coding faster

B. Clear requirements before coding begins. **Correct**☐

C. Remove developers

D. Avoid documentation

2. What is the biggest mindset shift in AI-Driven Development?

A. Writing more code manually

B. Thinking in systems and clear instructions**. Correct**☐

C. Memorizing more syntax

D. Working without any tools

3. Biggest failure of Vibe Coding?

A. AI stops responding

B. Architecture becomes hard to extend. `Correct` ☐

C. Code runs slow

D. Fewer comments written

4. Main advantage of using AI CLI agents (like Gemini CLI)?

A. They replace the developer completely

B. Handle repetitive tasks so dev focuses on design & problem-solving. **Correct**☐

C. Make coding faster but less reliable

D. Make coding optional

5. What defines an M-Shaped Developer?

A. Knows little about everything

B. Deep in only one field

C. Deep skills in multiple related domains. **Correct**☐

D. Works without AI tools

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