**TASK 2**

Assume you are a R&D Engineer

For a new Project your company wants a survey. Collect research Publication using lot for SHM.

Identify

(i) What sensor is used

(ii) What controller is used

(iii) What will be the IDE

(iv) What cloud is used

(v) Prepare minimum 3-questions from the reference and discuss

**Ans:** Based on the provided search results, here are the details regarding the use of sensors and technologies in Structural Health Monitoring (SHM):

(i) Sensors Used

piezo-vibrational sensor and accelerometer sensors to monitor the prototype of bridge.

Piezo vibration sensors are devices that generate an electric charge when stressed or vibrated, converting mechanical energy into electrical signals.

Accelerometer sensors are devices that measure acceleration, which is the change in speed (velocity) per unit time.

(ii) What controller is used

Arduino

With Arduino, we can build objects that can respond to and/or control light, sound, touch, and movement. Arduino has been used to create an amazing variety of things, including musical instruments, robots, light sculptures, games, interactive furniture, and even interactive clothing.

(iii) Integrated Development Environment (IDE)

The search results do not specify a particular IDE used in SHM projects. However, common choices include platforms like Arduino IDE.

(iv) Cloud Services Used

Blynk App - allows us to create amazing interfaces for your projects using various widgets we provide.

Blynk Server - responsible for all the communications between the Smartphone and hardware. We can use our Blynk Cloud or run private Blynk server locally. It is open source could easily handle thousands of devices and can even be launched on a Raspberry Pi

Blynk Libraries - for all the popular hardware platforms - enable communication with the server and process all the incoming and out coming commands.

(v) Sample Questions for Discussion

What are the advantages of using smart sensors in SHM compared to traditional sensors?

This question can prompt a discussion on scalability, data management, and real-time monitoring capabilities.

How does the integration of AI enhance the effectiveness of SHM systems?

This can lead to exploring AI's role in predictive maintenance and anomaly detection.

What challenges do researchers face when implementing IoT solutions in SHM?

Discussing issues like sensor reliability, data security, and network connectivity can provide insights into practical applications.

These questions can guide further exploration into the advancements and challenges in SHM technologies.