Predicted Questions: Wearable Computing

Section A: Objective Questions

A1. Matching Items

- BLE
- Firmware
- Accelerometer
- Gesture Recognition
- Flutter

A2. Multiple Choice Questions

- Which sensor is commonly used to measure acceleration in wearable devices?
- What is a key advantage of BLE (Bluetooth Low Energy) in wearable computing?
- What programming language is commonly used for embedded systems and firmware development in wearables?
- What is the purpose of data preprocessing in wearable ML models?
- Which of the following is a popular framework for cross-platform mobile app development for wearables?

A3. Fill in the Blanks

- A(n) _____ is a sensor that measures acceleration.
- _____ is a wireless technology used for short-range, low-power data transfer.
- _____ is embedded software that controls hardware functions.
- _____ is the process of cleaning and preparing data before using it in machine learning models.
- _____ learning models can be trained on wearable data for predictions.

A4. True or False

- Firmware is embedded software that controls hardware.
- Wi-Fi is typically used for short-range, low-power communication in wearables.
- React Native is a framework for developing native iOS apps only.
- Data preprocessing involves only collecting data from sensors.

Predicted Questions: Wearable Computing

- Cross-platform development helps maintain consistency in user experience.

Section B: Structured Questions

- List and briefly describe the key components of a wearable computing system.
- Explain the process of handling data in wearable machine learning models, from collection to usage.
- Describe the roles of firmware, sensors, and microcontrollers in a wearable device.
- Compare and contrast Bluetooth and Wi-Fi in the context of wearable computing, mentioning their typical uses.
- What are the advantages of using cross-platform development for wearable applications?
- Provide examples of Human-Computer Interaction (HCI) in wearables and explain its importance.

Section C: Essay Questions

- Propose a smart wearable system designed for chronic disease monitoring. Describe its hardware components, connectivity, data flow, and how machine learning could be integrated.
- Outline the steps involved in developing a cross-platform wearable system, from embedded firmware to cloud integration and machine learning.