## Functional & Performance Testing Template

**Model Performance Test**  
**Date:** 26 June 2025  
**Team ID:** LTVIP2025TMID32000  
**Project Name:** Sustainable Smart City Assistant Using IBM Granite LLM  
**Maximum Marks:** 2

**Test Scenarios & Results**

| **Test Case ID** | **Scenario (What to test)** | **Test Steps (How to test)** | **Expected Result** | **Actual Result** | **Pass/Fail** |
| --- | --- | --- | --- | --- | --- |
| FT-01 | Policy Document Upload | Upload valid and invalid policy text files | Valid files parsed; errors shown for corrupt files | Valid .txt parsed and error shown for corrupt files | Pass |
| FT-02 | Policy Summarization | Upload document and trigger summarization | Summary generated using Watsonx | Concise summary returned by IBM Granite LLM | Pass |
| FT-03 | KPI Forecasting | Upload CSV and trigger forecasting | Future trend values shown for selected KPIs | Water/Energy forecasts generated accurately | Pass |
| FT-04 | Citizen Feedback | Submit categorized feedback from UI | Feedback logged and categorized correctly | Message stored with proper tags | Pass |
| FT-05 | Eco Tips Generation | Enter topic prompt in eco tips module | Relevant, actionable eco tip returned | AI returned relevant eco suggestions | Pass |
| FT-06 | Semantic Search | Search uploaded docs with query | Most relevant document chunk returned | Matched accurate chunk using Pinecone | Pass |
| FT-07 | Anomaly Detection | Upload time-series KPI data | Spike or abnormality flagged | Sector-wise energy spike flagged correctly | Pass |
| FT-08 | Report Generation | Upload city name and KPIs | Generate formatted sustainability report | Granite LLM created city report | Pass |
| PT-01 | AI Response Time | Record time from prompt to summary/chat | Output in <5 seconds | Average: 3.2 seconds | Pass |
| PT-02 | Concurrent User Load | Multiple users submit inputs simultaneously | System responds without crashes | Handled 10+ inputs with no issues | Pass |
| PT-03 | Session State Preservation | Switch modules while retaining inputs | Text inputs preserved across modules | Chat and KPI history retained | Pass |