**Test Plan**

**1. Objective**

To verify the correctness, reliability, and robustness of the IsValidISBN10 SOAP API. The service should accurately determine whether a given ISBN-10 number is valid, based on the standard ISBN-10 validation algorithm.

**2. Scope**

Testing is limited to the IsValidISBN10 operation of the SOAP Web Service, which takes a 10-digit ISBN number and returns a boolean indicating its validity.

**3. Inclusions**

* Functional testing for valid and invalid ISBN-10 numbers.
* Boundary testing (less than/more than 10 digits).
* Negative testing (null, empty, non-numeric input).
* SOAP request and response validation.
* Response content and format verification.
* Error and fault handling.

**4. Test Environments**

| **Environment** | **Description** |
| --- | --- |
| **QA** | Local testing using SOAP UI / Postman |
| **Pre-Prod** | Optional cloud test environment |
| **Tools** | SOAP UI, Postman, optional automation via Python (Zeep) or Java (CXF) |

**5. Defect Reporting Procedure**

* Defects will be logged in a tracking tool like **JIRA** or **Excel**.
* Each defect will include:
  + Summary
  + Steps to reproduce
  + Actual vs Expected Result
  + Screenshot or SOAP Response dump
* Defects will be prioritized and retested upon fix.

**6. Test Strategy**

| **Type of Testing** | **Description** |
| --- | --- |
| Functional Testing | Validate correct results for valid and invalid ISBN-10s |
| Negative Testing | Handle incorrect/invalid inputs gracefully |
| Boundary Testing | Test with min/max and edge cases |
| Format Testing | Ensure correct SOAP XML structure |
| Manual Testing | Initial test coverage using SOAP UI |
| Automation (Optional) | For regression via Python (Zeep) or JUnit |

**7. Test Schedule**

| **Phase** | **Timeline** |
| --- | --- |
| Test Case Design | Day 1 |
| Test Environment Setup | Day 1 |
| Test Execution | Day 2–3 |
| Bug Fix Verification | Day 3–4 |
| Test Closure | Day 5 |

**8. Test Deliverables**

* Test Plan Document
* Test Cases (in Excel, CSV, or test management tool)
* Test Results Report
* Defect Logs
* Final Test Summary Report

**9. Entry and Exit Criteria**

**✅ Entry Criteria:**

* API endpoint and WSDL available.
* Test environment (SOAP UI or Postman) ready.
* Test data (valid and invalid ISBNs) prepared.

**✅ Exit Criteria:**

* All test cases executed.
* All critical defects resolved and verified.
* Final test summary prepared and reviewed.

**10. Test Execution**

**✅ Entry Criteria:**

* Test cases approved.
* SOAP requests and tools configured.
* Team ready to execute test cases.

**✅ Exit Criteria:**

* All planned test cases executed.
* All high/critical severity bugs fixed or deferred with sign-off.

**11. Test Closure**

**✅ Entry Criteria:**

* Final test cycle complete.
* All documentation reviewed.
* Stakeholder review meeting conducted.

**✅ Exit Criteria:**

* All test artifacts stored and versioned.
* Closure report submitted.
* Sign-off received from stakeholders.

**12. Tools**

* **SOAP UI** – for sending and validating SOAP requests.
* **Postman** – optional alternative with raw XML body.
* **Excel/JIRA** – for test case tracking and defect logging.
* **Python Zeep** or **Java Apache CXF** – optional automation.

**13. Risks and Mitigations**

| **Risk** | **Mitigation** |
| --- | --- |
| Service Downtime | Retry or contact service provider |
| Incorrect WSDL parsing in tools | Use updated SOAP tools (SOAP UI/Postman v10+) |
| Test data not covering all edge cases | Review ISBN-10 algorithm and test cases |
| False positives/negatives due to test data issue | Use verified ISBN-10 test samples |

**14. Approvals**

| **Role** | **Name** | **Signature** | **Date** |
| --- | --- | --- | --- |
| Test Lead | [Your Name] | [Sign Here] | [Date] |
| Project Manager | [Manager Name] | [Sign Here] | [Date] |
| QA Reviewer | [Reviewer] | [Sign Here] | [Date] |