**Comprehensive Test Strategy for VWO.com**

**I. Scope**

The testing scope for VWO.com includes:

* **A/B Testing Functionality** (Creation, execution, reporting, and analysis of A/B tests)
* **User Authentication** (Login, account creation, password recovery)
* **User Dashboard** (Metrics display, navigation, customization, and usability)

**II. Objectives**

1. Ensure **A/B testing functionality** works as expected (variation creation, traffic allocation, goal tracking, and accurate reporting).
2. Verify **user authentication** (seamless account creation, login, session management, and security).
3. Validate **user dashboard** functionality (real-time data, intuitive navigation, customization).
4. Identify defects impacting usability, performance, or security.
5. Ensure compliance with business and technical requirements.

**III. Testing Approach**

**A/B Testing Functionality**

* **Functional Testing:**
  + Verify test creation (variations, goals, targeting rules).
  + Validate traffic allocation (percentage splits, segmentation).
  + Test reporting accuracy (statistical significance, conversion tracking).
* **Integration Testing:**
  + Ensure A/B tests integrate with analytics tools (Google Analytics, CRM).
* **Performance Testing:**
  + Assess impact of multiple concurrent A/B tests on server load.
* **Validation of Results:**
  + Compare test results against expected outcomes (manual vs. automated checks).

**User Authentication**

* **Account Creation:**
  + Test mandatory fields, error messages, email confirmation.
  + Validate OAuth integrations (Google, Facebook login).
* **Login Functionality:**
  + Test valid/invalid credentials, session timeout, brute-force protection.
  + Verify password reset flow (email link, token expiry).
* **Security Testing:**
  + Check for SQL injection, XSS, CSRF vulnerabilities.

**User Dashboard**

* **Functional Testing:**
  + Verify real-time data updates (test results, analytics).
  + Test dashboard widgets (drag-and-drop, customization).
* **Usability Testing:**
  + Ensure intuitive navigation and responsiveness.

**Regression Testing**

* Automated regression suite for critical flows (login, test creation, reporting).
* Manual regression for UI/UX changes.

**Automation Testing**

* Automate repetitive test cases (login, A/B test creation, basic reporting).
* Use **Selenium/Cypress** for UI automation, **Postman/Newman** for API testing.

**Performance Testing**

* Load testing with **JMeter/LoadRunner** (simulate 1000+ concurrent users).
* Measure response times for dashboard rendering under high traffic.

**Security Testing**

* **OWASP ZAP/Burp Suite** for vulnerability scanning.
* **Penetration testing** for authentication flaws.

**IV. Test Environment**

* **Hardware:** Cloud-based (AWS/Azure) with scalable resources.
* **Software:** Latest browsers (Chrome, Firefox, Safari, Edge), mobile (iOS/Android).
* **Test Data:** Synthetic & production-like data (masked PII).
* **Staging Environment:** Mirrors production with test accounts.

**V. Test Deliverables**

* Test Plan
* Test Cases & Scripts
* Test Data Sets
* Execution Reports
* Defect Logs
* Test Summary Report

**VI. Roles & Responsibilities**

* **Test Manager:** Strategy, coordination, reporting.
* **QA Engineers:** Test design, execution, defect logging.
* **Automation Engineers:** Script development & maintenance.
* **DevOps:** Environment setup & CI/CD integration.

**VII. Test Schedule**

| **Phase** | **Duration** |
| --- | --- |
| Test Planning | 1 Week |
| Test Design | 2 Weeks |
| Test Execution | 3 Weeks |
| Defect Resolution | Ongoing |
| Test Sign-off | 1 Week |

**VIII. Risk Analysis**

| **Risk** | **Mitigation** |
| --- | --- |
| Delayed test environment | Early setup & cloud provisioning |
| Flaky automated tests | Regular maintenance & reviews |
| Performance bottlenecks | Early load testing |

**IX. Entry & Exit Criteria**

* **Entry:** Requirements approved, environment ready, test cases reviewed.
* **Exit:** All critical tests passed, defects resolved/reviewed, sign-off obtained.

**X. Tools & Technologies**

| **Category** | **Tools** |
| --- | --- |
| Test Management | Jira, TestRail |
| Automation | Selenium, Cypress, Postman |
| Performance | JMeter, LoadRunner |
| Security | OWASP ZAP, Burp Suite |