**Database Design**

**Users Table: tblUsers**

| **Field Name** | **Type** | **Validation** |
| --- | --- | --- |
| username | VARCHAR(50) | Primary Key |
| Name | VARCHAR(100) | Not null |
| password | VARCHAR(255) | Not null |
| Role | VARCHAR(20) | Not null (values: "Instructor", "Student") |

**Exam Categories Table: tblExamCategories**

| **Field Name** | **Type** | **Validation** |
| --- | --- | --- |
| category\_id | INT | Primary Key |
| category\_name | VARCHAR(50) | Not null (e.g., "Quiz", "Midterm", "Final") |
| description | TEXT | Optional description of the exam category |

**Exams Table: tblExams**

| **Field Name** | **Type** | **Validation** |
| --- | --- | --- |
| exam\_id | INT | Primary Key |
| exam\_title | VARCHAR(100) | Not null |
| Subject | VARCHAR(50) | Not null |
| category\_id | INT | Foreign Key references tblExamCategories |
| total\_marks | INT | Not null |
| Duration | INT | Not null (exam duration in minutes) |

**Questions Table: tblQuestions**

| **Field Name** | **Type** | **Validation** |
| --- | --- | --- |
| question\_id | INT | Primary Key |
| exam\_id | INT | Foreign Key references tblExams |
| question\_text | TEXT | Not null |
| option\_a | VARCHAR(100) | Not null |
| option\_b | VARCHAR(100) | Not null |
| option\_c | VARCHAR(100) | Not null |
| option\_d | VARCHAR(100) | Not null |
| correct\_option | CHAR(1) | Not null (values: 'A', 'B', 'C', 'D') |

**Requirements**

| **No.** | **Function** | **Description** | **Mark** |
| --- | --- | --- | --- |
| 1 | Login | Validate username and password. On success, navigate to Exam Dashboard; otherwise, show error. | 1 |
| 2 | Welcome | After login, display the logged-in user’s name on the Exam Dashboard. | 1 |
| 3 | Logout | Provide a logout function on the Exam Dashboard, redirecting to the Login page. | 1 |
| 4 | View Exam Categories | Display a list of all exam categories with Category Name and Description. | 1 |
| 5 | View Exams by Category | Allow students to filter and view exams by Category with details like Exam Title, Subject, Total Marks, and Duration. | 2 |
| 6 | Create New Exam with Category | Instructors can create new exams by specifying Exam Title, Subject, Category, Total Marks, and Duration. | 2 |
| 7 | Add Questions | Instructors can add multiple-choice questions to exams, specifying question text and options. | 1 |
| 8 | Take Exam & View Results | Students can take exams, submit answers, and view their scores. | 1 |

**Total Marks:** 10

**Functional Details**

1. **Login Functionality:**

* Both instructors and students should log in with their credentials to access the Exam Dashboard.

**Welcome Message:**

* Display the logged-in user's name on the dashboard.

**Logout:**

* A logout button should be available on each page, redirecting users to the login page and invalidating their session.

**View Exam Categories:**

* Instructors and students can view all available exam categories (e.g., Quiz, Midterm, Final).
* Display columns Category Name and Description.

**View Exams by Category:**

* Students can filter exams by category, viewing details for exams under each category, including Exam Title, Subject, Total Marks, and Duration.

**Create New Exam with Category:**

* Instructors can create new exams by selecting an appropriate Category (e.g., Quiz, Midterm).
* Fields for creation include Exam Title, Subject, Category, Total Marks, and Duration.

**Add Questions:**

* Instructors can add multiple-choice questions to any exam, specifying the Question Text, Options (A, B, C, D), and the Correct Option.

**Take Exam & View Results:**

* Students can select an exam to take, answer multiple-choice questions, and submit their responses.
* Upon completion, the system should display the student’s score.