Final Exam: Database Management Systems – SQL Section

Part A – Basic SQL (Short Questions – 5 Marks)

1. **Write SQL statements** to create the following table `Students` with constraints:
    - `student_id` (Primary Key)
    - `name` (NOT NULL)
    - `email` (UNIQUE)
    - `dob` (DATE)
    - `department_id` (FOREIGN KEY references `Departments(department_id)`)
2. **Insert** two new rows into `Students` for:
    - Student: 101, John Doe, john@example.com, 2002-06-15, Department 2
    - Student: 102, Jane Smith, jane@example.com, 2001-10-30, Department 1
3. Retrieve all **students born after 2002**, sorted by `name` in **descending** order.
4. Display the **total number of students** in each department.
5. Write a query to **delete** all students from the `Students` table whose `dob` is before `2000-01-01`.

Part B – Intermediate SQL (JOIN, GROUP BY, Subquery – 15 Marks)

Schema:

- **Students(student_id, name, dob, department_id)**

- **Departments(department_id, department_name)**
- **Courses(course_id, course_name, department_id)**
- **Enrollments(enrollment_id, student_id, course_id, grade)**

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6. Retrieve the `name` and `department_name` of all students.
7. Find the **average grade** of each course. Only show courses with an average grade **greater than 3.0**.
8. Write a query to display all students who have **not enrolled in any course**.
9. Display the `course_name` and the **number of students enrolled** in each course, ordered from highest to lowest.
10. List all students whose grade in **any course** is above the **average grade** of that course.