

1. Consider the **COMPANY** schema diagram in Figure 1 overleaf.

- (a) Give an example of a database state that violates one of the key constraints expressed by the **COMPANY** schema. [3]
- (b) Can deletions ever cause a violation of a key uniqueness constraint? Justify your answer. [3]
- (c) Write SQL code to create the following views.
  - i. A view named **RES** that lists the last names of all employees in the ‘Research’ department. [3]
  - ii. A view named **PRO1** that provides the following details for every project: project number, project name and the number of employees employed by the department that controls the project. [6]
  - iii. A view named **PRO2** that reports the following details for each project: project number and the number of employees who do *not* work on the project but who work on a different project controlled by the same department. [10]

**Total mark for this question: 25**