**Student-courses**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Sid** | **Sname** | **Phone** | **Course-id** | **Course-description** | **Credit-hours** | **Grade** |
| 100 | John | 487 2454 | IS380 | Database Concepts | 3 | A |
| 100 | John | 487 2454 | IS416 | Unix Operating System | 3 | B |
| 200 | Smith | 671 8120 | IS380 | Database Concepts | 3 | B |
| 200 | Smith | 671 8120 | IS416 | Unix Operating System | 3 | B |
| 200 | Smith | 671 8120 | IS420 | Data Net Work | 3 | C |
| 300 | Russell | 871 2356 | IS417 | System Analysis | 3 | A |
|  |  |  |  |  |  |  |

1. **Find the Functional Dependency’s of the above table?**

Sid → Sname, phone

Course-id → course-description, credit-hours

Sid, Course-id → Grade

1. **List all candidate key’s in relation R(A,B,C,D,E) with functional dependencies: D → C, CE → A, D → A, AE → D?**

ABE

BDE

BCE

1. **List all candidate key’s in relation R (A,B,C,D,E,F) with functional dependencies: CDE → B, ACD → F, BEF → C, B → D?**

ABCE

ABEF

ACDE