a/

A -> BC

DE -> F

ADE -> G

b/

|  |  |  |  |
| --- | --- | --- | --- |
| Relation | Fd | Key | Note |
| ABCDEFG | A -> BC  DE -> F  ADE -> G | ADE | A -> BC violate BCNF  LHS is not key |
| ABC | A -> BC | A | ABC is in BCNF, only 1 relation |
| ADEFG | DE -> F  ADE -> G | ADE | DE->F violates BCNF  LHS is not key |
| DEF | DE->F | DE | DEF is in BCNF, only 1 relation, LHS is key |
| ADEG | ADE -> G |  | In BCNF, 1 relation, LHS is key |
|  |  |  |  |
|  |  |  |  |

Therefore, ABCDEFG is broken down into BCNF relations of: ABC, DEF, ADEG

c/

ABC: describe student detail and the program they are in

DEF: describe the assessment for each course

ADEG: describe what the student achieves for each assessment of the course