单元测试-关系代数 参考答案

Student(S#,sname, age,sex)

-----学生（学号，姓名，年龄，性别）

Course(C#, Cname，teacher)

-----课程关系：课程（课程编号，课程名称，任课教师）

SC(S#, C#, Grade)

1. 检索程军老师所授课的课号和课程名称

Select from course where teacher=’程军’

1. 检索年龄大于21岁的男生学号和姓名

Select from student where age>21 and sex=’男’

3.检索选修程军老师所授全部课程的学生姓名

（

)

SELECT Sname FROM Student

WHERE NOT EXISTS

( SELECT \* FROM Course

WHERE NOT EXISTS

(SELECT \* FROM SC WHERE

SC.Sno = Student.Sno AND SC.Cno = Course.Cno and C# in (select C# from course where teacher=’程军’)))

4.检索李强同学没有选修的课程号

Select C# from course

Except

Select C# from student join sc on student.s#=SC.S# where sname=’李强’

或者

Select C# from course where C# not in (Select C# from student join sc on student.s#=SC.S# where sname=’李强’)

5.检索选修课程号k1和k5的学生学号

Select S# from SC where C#=’k1’

Intersect

Select S# from SC where C#=’k5’

或者

Select S# from SC where C#=’k1’

and S# in

(Select S# from SC where C#=’k5’)

6.找出讲授了2门课程的教师姓名

Select teacher from course group by teacher having count(\*)=2

7.找出所有成绩都及格的课程名称和教师

Select cname,teacher from course

Except

select cname,teacher from course join (select \* from SC where grade<60) R on course.C#=R.C#

或者

Select cname,teacher from course where cname not in

(select cname from course join (select \* from SC where grade<60) R on course.C#=R.C#)

8.检索修读了全部课程的学生姓名

SELECT Sname FROM Student

WHERE NOT EXISTS

( SELECT \* FROM Course

WHERE NOT EXISTS

(SELECT \* FROM SC WHERE

SC.Sno = Student.Sno AND SC.Cno = Course.Cno))

9.检索选修了课程名为C语言的所有学生学号和姓名

用笛卡尔积的写法简化多表连接

Select S#,sname from(

Select from course, SC,student where course.C#=SC.C# and student.S#=SC.S# and course.cname=’C语言’) R

10.检索所有课程成绩都及格的学生学号和姓名

Select S#,sname from student

Except

Select S#,sname from student join( select \* from SC where grade<60) R on student.S#=R.s#

或者

Select S#,sname from student where S# not in (

Select S# from SC where grade<60)

11.统计每个课号的及格率（grade>=60为及格)

Select A.C#,(select count(\*) from SC B where grade>=60 and B.C#=A.C#)/(select count(\*) from SC C where C.C#=A.C#) from SC A

12.按性别统计学生人数（结果显示：两列男 \*\* 女 \*\*）

Select sex,count(\*) from student group by sex;

13.找出选课人数最多的课程

))

Select C# from SC group by c# having count(\*)=

(select max(c) as d from (select C#,count(\*) as C from SC group by C#) R )

14.找出没有学生选课的课程名称

Select cname from course

Except

Select cname from course join SC on course.C# = SC.C#

或者

Select cname from course where C# not in(select C# from SC)

15.统计每个任课教师讲授的课程门数

Select teacher,count(\*) from course group by teacher