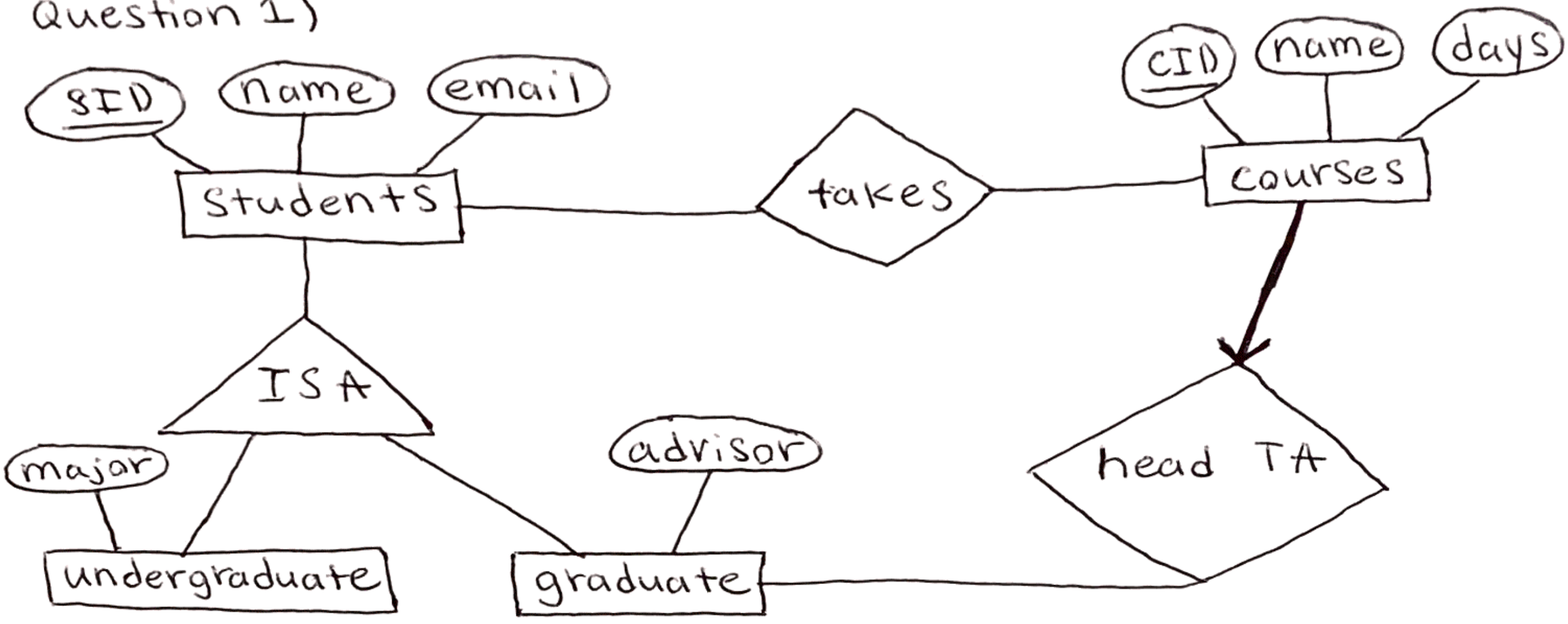
COP 3540 Midterm Exam 7/8/2021 Name: Matthew Acs

Question 1)



Assumptions:

1) Courses may have no students taking them
2) Students must be either an undergraduate or graduate student

Question 2)

```
CREATE TABLE Car
( LicenceNum CHAR(20),
  Province CHAR(20),
  Make CHAR(20),
  Model CHAR(20),
  Year INTEGER,
  VIN CHAR(20),
  PRIMARY KEY (LicenceNum, Province),
  FOREIGN KEY(Make) REFERENCES Manufacturer)
```

Question 3)

1:
```
SELECT E.ename
FROM Emp E, Works W, Proj P
WHERE E.eno = W.eno AND W.pno = P.pno AND P.pname = "Installation"
```

2:
```
SELECT E.eno
FROM Emp E, Pay P
WHERE E.title = P.title AND P.Salary > (SELECT AVG(P1.Salary)
                                       FROM Pay P1)
```

3: SELECT P.city, COUNT(*), SUM(P.budget)
FROM Proj P
GROUP BY P.City

4: SELECT P.name
FROM Proj P
WHERE P.budget>(SELECT MIN(P1.budget)
FROM Proj P1
WHERE P1.city = "Boca Raton")

5:
```
SELECT E.ename
FROM Emp E
WHERE NOT EXISTS(( SELECT P.pno
                   FROM proj P)
                  EXCEPT
                  (SELECT W.pno
                   FROM works W
                   WHERE W.eno = E.eno))
```

6:
```
SELECT P.pname
FROM Proj p
WHERE EXISTS(SELECT W.responsibility
             FROM works W
             WHERE W.pno = P.pno
             GROUP BY W.responsibility
             HAVING COUNT(*) > 2)
```