The Database Engine used is MySQL (using **WAMP server** -> MySQL Console).

**PLEASE NOTE**: in case a query does not work properly, then kindly copy it in a notepad file and replace the single quotes (**‘’**) of MS Word by the single quotes (**' '**) of the notepad, and/or change the font to **Lucida Console**. For some reason the single quotes of the Calibri Font result in syntax error in MySQL of the WAMP server.

**Solution a.**

SELECT dept\_name

FROM instructor

GROUP BY dept\_name

ORDER BY AVG(salary) DESC

LIMIT 1;

**Solution b.**

SELECT course\_id, sec\_id, AVG(tot\_cred)

FROM(

SELECT DISTINCT course\_id, sec\_id, takes.ID, tot\_cred

FROM takes, student

WHERE takes.id=student.id AND takes.course\_id IN

(

SELECT course\_id

FROM takes

WHERE year= 2009

GROUP BY course\_id

HAVING COUNT(DISTINCT ID) > 1

)

) AS t

GROUP BY course\_id, sec\_id;

**Solution c.**

SELECT COUNT(DISTINCT t2.ID)

FROM teaches AS t1, takes AS t2

WHERE t1.ID=10101 AND t1.course\_id=t2.course\_id AND t1.semester=t2.semester AND t1.year=t2.year;

**Solution d.**

SELECT s1.course\_id

FROM section AS s1

WHERE EXISTS(

SELECT course\_id

FROM section

WHERE s1.semester='Fall' AND s1.year=2009 AND s1.course\_id NOT IN(

SELECT course\_id

FROM section

WHERE semester='Spring' AND year=2010

)

);

**Solution e.**

SELECT course\_id

FROM section

WHERE semester='Fall' AND year=2009 AND course\_id IN(

SELECT course\_id

FROM section

WHERE semester='Spring' AND year=2010

);

**Solution f.**

SELECT dept\_name, COUNT(DISTINCT teaches.ID)

FROM course, teaches

WHERE course.course\_id = teaches.course\_id AND teaches.year=2010

GROUP BY dept\_name;

**Solution g.**

SELECT DISTINCT s1.course\_id

FROM section AS s1

WHERE s1.year=2009 AND s1.course\_id IN(

SELECT s2.course\_id

FROM section as s2

WHERE s2.year=2009 AND s1.course\_id=s2.course\_id AND (s1.sec\_id <> s2.sec\_id OR s1.semester <> s2.semester)

);

**Solution h.**

SELECT dept\_name

FROM(

SELECT dept\_name, cid

FROM

(

SELECT dept\_name, AVG(salary) AS avgsal, count(ID) AS cid

FROM instructor

GROUP BY dept\_name

) AS t1

WHERE avgsal > 42000

) AS t2

WHERE dept\_name LIKE '%i%' AND cid > 1

ORDER BY dept\_name DESC;**Solution i.**

