Question 1:

CREATE TABLE STUDENT(StudentID INTEGER PRIMARY KEY autoincrement, FirstName STRING(10), LastName STRING(10), PhoneNumber STRING(15), Email STRING(30));

Question 2:

CREATE TABLE COURSE(CourseCode STRING(10) PRIMARY KEY, CourseName STRING(30), Duration DEFAULT(10), CourseCost DEFAULT(300));

Question 3:

CREATE TABLE STUDENTCOURSE(Student_ID INTEGER,

Course_ID INTEGER, FOREIGN KEY(Student_ID) REFERENCES STUDENT(StudentID), FOREIGN KEY(Course_ID) REFERENCES COURSE(CourseCode), PRIMARY KEY(Student_ID, Course_ID)

);

Question 4:

INSERT INTO STUDENT(FirstName, LastName, PhoneNumber, Email) VALUES ('Mary', 'Murphy', '01-288 8888', 'Murphy@gcd.ie'); INSERT INTO STUDENT(FirstName, LastName, PhoneNumber, Email) VALUES ('Brian', 'Smith', '01-288 7777', 'Bsmith@gcd.ie');

INSERT INTO STUDENT(FirstName, LastName, PhoneNumber, Email) VALUES ('David', 'Honan', '01-288 6677', 'Dhonan@gcd.ie'); INSERT INTO STUDENT(FirstName, LastName, PhoneNumber, Email) VALUES ('Frank', 'Murphy', '01-233 5577', 'Fmurphy@gcd.ie');

INSERT INTO STUDENT(FirstName, LastName, PhoneNumber, Email) VALUES ('Aoife', 'Byrne', '01-233 5599', 'Abyrne@gcd.ie'); INSERT INTO STUDENT(FirstName, LastName, PhoneNumber, Email) VALUES ('Cora', 'William', '01-288 7723', 'Cwilliam@gcd.ie');

INSERT INTO STUDENT(FirstName, LastName, PhoneNumber, Email) VALUES ('Conor', 'James', '01-234 0023', 'Cjames@gcd.ie');

Question 5:

INSERT INTO COURSE(CourseCode, CourseName, Duration, CourseCost) VALUES('ACC20', 'Access

course', '10', '300'); INSERT INTO COURSE(CourseCode, CourseName, Duration, CourseCost) VALUES('WEB20', 'Web design', '10', '200');

INSERT INTO COURSE(CourseCode, CourseName, Duration, CourseCost) VALUES('WORD20', 'Microsoft Word', '8', '310'); INSERT INTO COURSE(CourseCode, CourseName, Duration, CourseCost) VALUES('EXL20', 'Microsoft Excel', '9', '320');

Question 6:

INSERT INTO STUDENTCOURSE(Student_ID, Course_ID) VALUES ('1', 'ACC20'); INSERT INTO STUDENTCOURSE(Student_ID, Course_ID) VALUES ('2', 'ACC20'); INSERT INTO STUDENTCOURSE(Student_ID, Course_ID) VAlUES ('3', 'WEB20'); INSERT INTO STUDENTCOURSE(Student_ID, Course_ID) VAlUES ('3', 'ACC20'); INSERT INTO STUDENTCOURSE(Student_ID, Course_ID) VAlUES ('4', 'WEB20'); INSERT INTO STUDENTCOURSE(Student_ID, Course_ID) VAlUES ('4', 'ACC20'); INSERT INTO STUDENTCOURSE(Student_ID, Course_ID) VAlUES ('5', 'WORD20'); INSERT INTO STUDENTCOURSE(Student_ID, Course_ID) VAlUES ('5', 'EXL20'); INSERT INTO STUDENTCOURSE(Student_ID, Course_ID) VAlUES ('6', 'ACC20'); INSERT INTO STUDENTCOURSE(Student_ID, Course_ID) VAlUES ('7', 'EXL20');

//Here since we have declared the primary key which represents to the unique values so we just need to insert primary keys to enter the respective values.

Question 7:

The names and email addresses of all students:

SELECT FirstName,Email FROM STUDENT;

Mary|Murphy|Murphy@gcd.ie Brian|Smith|Bsmith@gcd.ie David|Honan|Dhonan@gcd.ie Frank|Murphy|Fmurphy@gcd.ie Aoife|Byrne|Abyrne@gcd.ie Cora|William|Cwilliam@gcd.ie Conor|James|Cjames@gcd.ie

The names of all courses, their duration and cost:

SELECT CourseName,Duration,CourseCost FROM COURSE;
Access course|10|300 Web design|10|200 Microsoft Word|8|310

Microsoft Excel|9|320

Question 8:

select STUDENT.FirstName, STUDENT.LastName, COURSE.CourseName from STUDENT JOIN STUDENTCOURSE on STUDENT.StudentID = STUDENTCOURSE.Student_ID JOIN COURSE on COURSE.CourseCode = STUDENTCOURSE.Course_ID WHERE COURSE.CourseName in ('Access course', 'Web design');

Mary|Murphy|Access course Brian|Smith|Access course David|Honan|Web design
David|Honan|Access course Frank|Murphy|Web design Frank|Murphy|Access course
Cora|William|Access course

Question 9:

No, because we have unique information on each of our tables STUDENT and COURSE and to link them we used a mapping table.

Question 10:

We need the foreign key and Primary key restrictions as it acts as a link to connect the data that are in different tables to join together into single database. If we didn't have these instructions, the data won't be able to connect each other which will considered to be NULL since it doesn't do anything. These keys represent unique information's only as well so we need restriction.