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University of Palestine

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Student No.: _____
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Faculty: Faculty Information
Technology
Department:

Question 1: (10 marks)

Define each of the following terms

- a) Normalization

- b) Composite Primary Key.

- c) Partial dependency

- d) Transitive dependency

- e) Derived Attributes

Question 2: (10 marks)

Consider the following schema definitions:

- **Branch** (branchNo, street, city, postcode)
- **Staff** (staffNo, fName, lName, position, sex, DOB, salary, branchNo)
- **PropertyforRent** (propertyNo, street, city, postcode, type, rooms, rent, ownerNo, staffNo, branchNo)
- **Client** (clientNo, fName, lName, telNo, prefType, maxRent)
- **PrivateOwner** (ownerNo, fName, lName, address, telNo)
- **Viewing** (clientNo, propertyNo, viewDate, comment)
- **Registration** (clientNo, branchNo, staffNo, dateJoined)

For each case below, fill in the blanks such that the SQL queries correspond to the English language queries stated.

- List the address of all branch offices in Gaza or Rafah.
 SELECT _____ FROM _____
 WHERE city='Gaza' _____
- List the staff with a salary between \$10000 and \$30000.
 SELECT staff_No FROM Staff
 WHERE _____
- Give all managers 5% increase to their salary
 UPDATE _____ SET _____ WHERE position='Manager'
- Delete all viewings that belong to property with property number 333.
 DELETE FROM _____ WHERE _____

Question 3: (15 marks)

staffNo	dentistName	patientNo	patientName	Date	time	surgeryNo
1011	Tony Smith	P100	Gillian White	12-Aug-03	10.00	10
1011	Tony Smith	P105	Jill Bell	13-Aug-03	12.00	15
1024	Helen Pearson	P108	Ian Mackay	12-Sept-03	10.00	10
1024	Helen Pearson	P108	Ian Mackay	14-Sept-03	10.00	10
1032	Robin Plevin	P105	Jill Bell	14-Oct-03	16.30	15
1032	Robin Plevin	P110	John Walker	12-Sept-03	18.00	13
1032	Robin Plevin	P111	Sally Rob	12-Sept-03	10.00	14

Describe and illustrate the process of normalizing the table shown above from 1NF to 3NF. State any assumptions that you can make based on the data shown in this table.

Answer of Question3:

Question 4: (15 marks)

Using the results of Question 3, draw the Crow's Foot ERD.

هذا السؤال للمتغبين عن الامتحان "النصفى الثانى" الذين قبلت أعارهم فقط

You need to design a database for XYZ corporation in Palestine. Each of the XYZ Corporation's divisions is composed of many departments. Each of the departments has many employees assigned to it, but each employee works for only one department. Each department is managed by one employee, and each of these managers can manage only one department at a time. Sketch the conceptual Model of the ERD and show all of the possible attributes of each Entity. In addition, show the relationships between the entities.

END OF QUESTIONS