T1-mns-ra.pdf.

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--Applied Class No: 04_OnCampus

TASK 1: Relational Database Queries - Relational Algebra (9 marks):

List of symbols for copying/pasting as you enter your answers below: project: π, select: σ, join: ⋈, intersect: ∩, union: ∪, minus: -

(a) List the id and description of all items which have never been used in any appointment service.

Solution:

R1 = $\pi_{item_id,\ item_description}$ ITEM
R2 = π_{item_id} APPTSERVICE_ITEM
R = R1 – R2

(b) List the patient number, patient first name, patient last name, emergency contact first name, emergency contact last name and emergency contact phone number of all patients who live in a city named Mooroolbark and had appointment/s on 08 September 2023.

Solution:

R1 = $\sigma_{appt_datetime = '08\ September\ 2023'}$ APPOINTMENT

R2 = $\pi_{patient_no,\ patient_fname,\ patient_lname,\ ec_id}$ ($\sigma_{patient_city = 'Mooroolbark'}$ PATIENT)

R3 = R2 ⋈ [patient_no=patient_no] R1

R4 = $\pi_{patient_no,\ patient_fname,\ patient_lname,\ ec_id}$ (R3 ⋈[patient_no=patient_no] PATIENT)

R = $\pi_{patient_no,\ patient_fname,\ patient_lname,\ ec_id,\ ec_fname,\ ec_lname,\ ec_phone}$ (R4 ⋈[ec_id=ec_id] EMERGENCY_CONTACT)