

σ

π

\bowtie

intersect: \cap , union: \cup , minus: $-$

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

R = ((π item_id **ITEM**) $-$ (π item_id **APPTSERVICE_ITEM**)) \bowtie (π item_id, item_desc **ITEM**)

(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.

R1 = π patient_no, patient_fname, patient_lname, ec_id (σ patient_city= 'Mooroolbark' **PATIENT**)

R2= π patient_no (σ appt_datetime = 08-09-2023 **APPOINTMENT**)

R = π patient_no, patient_fname, patient_lname, ec_fname, ec_lname, ec_phone (**R1** \bowtie **R2** \bowtie **EMERGENCY_CONTACT**)

(c) List the number, first name, last name and email address of all patients who have been attended by endodontists (i.e. providers who specialise in ENDODONTICS).