

Task 1

a)

$R2 = (ITEMS \bowtie APPT_SERVICE)$ (joining both items and appt_service to combine both along id)

$R1 = ITEMS - R2$ (Keep items not in appointment service)

$R = \pi_{id, desc}(R1)$ (project id and desc from those filtered items)

b)

$R5 = \pi_{ec_fname, ec_lname, ec_phone, ed_id} EMERGENCY_CONTACT$ (project from ec)

$R4 = \pi_{patient_no, patient_fname, patient_lname, ec_id} (\sigma_{patient_city = 'Mooroolbark'} PATIENT)$ (select the patients)

$R3 = R4 \bowtie R5$ (join)

$R2 = \pi_{patient_no} (\sigma_{appt_datetime = to_date('8-09-2023'; 'DD-MM-YYYY')} APPOINTMENT)$ (show patients on 8/9)

$R1 = R2 \cap R3$ (The patients on 8/9 and at Mooroolbark)

$R = \pi_{patient_no, patient_fname, patient_lname, ec_fname, ec_lname, ec_phone}(R1)$ (Show the necessary attributes)

c)

$R7 = \pi_{patient_no, patient_fname, patient_lname, patient_contactemail} PATIENT$ (Show attributes of patient)

$R6 = \pi_{patient_no, provider_code} APPOINTMENT$ (Show attributes of appointment)

$R5 = \pi_{spec_id, spec_name} (\sigma_{spec_name = 'ENDODONTICS'} SPECIALISATION)$ (select specialists)

$R4 = \pi_{provider_code, spec_id} PROVIDER$ (show providers)

$R3 = R6 \bowtie R7$ (join appt and patient)

$R2 = R4 \cap R5$ (finding ENDODONTICS providers)

$R1 = R2 \bowtie R3$ (Join provider and appointment)

$R = \pi_{patient_no, patient_fname, patient_lname, patient_contactemail}(R1)$ (Show the necessary attributes)