## Task 1

### a)

R2 = (ITEMS ⨝ APPT\_SERVICE) (joining both items and appt\_service to combine both along id)

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

R = π id, desc (R1) (project id and desc from those filtered items)

### b)

R = π patient\_no, patient\_fname, patient\_lname, ec\_fname, ec\_lname, ec\_phone (R1)

R1 = R2 ⋂ R3

R2 = π patient\_no (σ appt\_datetime = 8 september 2023 APPOINTMENT)

R3 = R4 ⨝ R5

R4 = π patient\_no, patient\_fname, patient\_lname, ec\_id ( σ patient\_city = ‘Mooroolbark’ PATIENT)

R5 = π ec\_fname, ec\_lname, ec\_phone, ed\_id EMERGENCY\_CONTACT

### c)

R = π patient\_no, patient\_fname, patient\_lname, patient\_contactemail (R1)

R1 = R2 ⨝ R3 (Join provider and appointment)

R2 = R4 ⋂ R5 (finding ENDODONTICS providers)

R3 = R6 ⨝ R7 (join appt and patient)

R4 = π provider\_code, spec\_id PROVIDER

R5 = π spec\_id, spec\_name (σ spec\_name = ‘ENDODONTICS’ SPECIALISATION)

R6 = π patient\_no, provider\_code APPOINTMENT

R7 = π patient\_no, patient\_fname, patient\_lname, patient\_contactemail PATIENT