## 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)

R5 = π ec\_fname, ec\_lname, ec\_phone, ed\_id EMERGENCY\_CONTACT *(project from ec)*

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

R3 = R4 ⨝ R5 *(join)*

R2 = π patient\_no (σ appt\_datetime = to\_date(‘8-09-2023’,’DD-MM-YYYY’ APPOINTMENT) *(show patients on 8/9)*

R1 = R2 ⋂ R3 *(The patients on 8/9 and at Mooroolbark)*

R = π patient\_no, patient\_fname, patient\_lname, ec\_fname, ec\_lname, ec\_phone (R1) *(Show the necessary attributes)*

### c)

R7 = π patient\_no, patient\_fname, patient\_lname, patient\_contactemail PATIENT (*Show attributes of patient)*

R6 = π patient\_no, provider\_code APPOINTMENT *(Show attributes of appointment)*

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

R4 = π provider\_code, spec\_id PROVIDER *(show providers)*

R3 = R6 ⨝ R7 *(join appt and patient)*

R2 = R4 ⋂ R5 *(finding ENDODONTICS providers)*

R1 = R2 ⨝ R3 *(Join provider and appointment)*

R = π patient\_no, patient\_fname, patient\_lname, patient\_contactemail (R1) *(Show the necessary attributes)*