TAREA 2

1- 1 kg de alimentación que contiene 45% de A y 55% B fue destilado diferencialmente en una unidad de destilación batch. La separación fue parada cuando 200 g del destilado fueron obtenidos
   a) determine la concentración del destilado
   b) Cual es la temperatura de burbuja del destilado y del residuo
   c) Si en vez de parar la destilación cuando 70 g de destilado fueron obtenido se destila hasta que 25% del producto A es recuperado, cual es la composición del destilado bajo estas condiciones.

	Componente A		Componente B
A	Benceno	1	Benceno
B	Etanol	2	Etanol
C	n-heptano	3	n-heptano
D	Tolueno	4	Tolueno
E	Agua	5	Agua
F	Metanol	6	Metanol
G	n-butano	7	n-butano
H	iso-butano	8	iso-butano
I	Metano	9	Metano
J	Etano	10	Etano

1 V012038781	Araujo Briceño, Gustavo Benito	E	1
2 V009313923	Arraez Peña, Argenis Gregorio	E	3
3 V014928900	Borjas Quintero, Jonás Caronte	E	4
4 V016376913	Briceño Colmenter, Jesús Alejandro	E	5
5 V016664954	Durán Escalante, Carlos Daniel	E	6
6 V015824093	Durán Matos, Alejandro Rutilio	E	7
7 V017093660	González Díaz, Yensy Jossué	E	8
8 V012347362	González Ramírez, Raul José	E	9
9 V016533949	González Torrealba, Norla del Carmen	E	10
10 V017321453	Gutiérrez Rosáles, María José	A	4
11 V015323529	Martínez Rosales, Otnihel Moisés	A	5
12 V010048545	Medina Ledezma, María Eloisa	A	6
13 V016651560	Mendez Hernandez, Carelis Josefina	A	7
14 V013098264	Méndez, Daniel Leonardo	A	8
15 V011417243	Millán Lárez, Luis Eduardo	A	9
16 V015235658	Molina Morán, Luis Yoel	F	1
17 V014400168	Montilva Mora, Rosio Elena	F	2

18 V014328798	Nardín Rivas, Yamileth Virginia	F	3
19 V009580046	Núñez García, Juvenal Enrique	F	4
20 V013983022	Ospina González, Andrés Mauricio	F	5
21 V015754747	Palacios Márquez, Rubén Dario	F	7
22 V014718286	Peña Pabón, Carmen Virginia	F	8
23 V012780656	Peña Rojas, Deyanira	D	1
24 V015595603	Pérez Chacón, Nardy Elena	D	2
25 V016019037	Pérez Molina, Nolan Adalberto	D	3
26 V016201800	Pérez Zambrano, Yesenia Karina	D	5
27 V016200882	Plaza Alarcón, Rosisbeth Santiary	D	6
28 V015516453	Quintero Uzcátegui, Mayerly Elena	C	1
29 V014244236	Quintero Wilchez, Jairo	C	2
30 V015242297	Rincón Zambrano, Viviana Eglee	C	4
31 V013997523	Rivas Villareal, Licino Alberto	C	5
32 V015296642	Sosa González, Janishe Paola	C	6
33 V016533270	Torres Araujo, Merlyn Antonieta	C	7
34 V016805380	Torres Hernández, Elimar Margarita	C	8
35 V017347994	Vielma Andrade, Yonar Enrique	C	9
36 V014459764	Villasmil, Darwin Alirio	C	10

Table 2-1. Normal boiling point (at p = 1.013 bar) and vapor pressure of some selected substances (selected from Gmehling et al. 1977: Reid et al. 1987)

Antoine equation for vapor pressure: $\frac{p_i^\circ}{\text{bar}} = \exp\left(A_i - \frac{B_i}{t/\text{K} + C_i}\right)$

Formula	Name	B.P. K	A_i	B_i	C_i	Range of Validity, K
Ar	argon	87.3	9.31039	832.778	2.361	73–133
CCl_4	tetrachloromethane	349.70	9.22001	2790.781	−46.741	287–350
$CHCl_3$	chloroform	334.40	9.39360	2696.249	−46.918	263–333
CH_2Cl_2	dichloromethane	313.20	10.44014	3053.085	−20.53	233–313
CH_2O	formaldehyde	254.00	9.94883	2234.878	−29.026	164–373
CH_2O_2	formic acid	373.70	9.37044	2982.446	−55.150	299–381
CH_3NO_2	nitromethane	374.30	10.14657	3331.696	−45.550	329–409
CH_4O	methanol	337.80	11.98705	3643.314	−33.424	288–357
CO	carbon monoxide	81.60	9.26679	769.935	1.637	52–121
CO_2	carbon dioxide	185.50	10.77151	1956.255	−2.112	146–285
C_2H_3N	acetonitrile	354.80	10.28058	3413.099	−22.627	246–355
C_2H_4O	acetaldehyde	293.70	9.97724	2532.406	−39.205	191–293
$C_2H_4O_2$	acetic acid	391.10	11.84896	4457.828	−14.699	291–391
C_2H_6	ethane	184.50	9.27428	1582.178	−13.762	145–284
C_2H_6O	ethanol	351.50	12.05896	3667.705	−46.966	293–366
C_2H_7N	ethylamine	289.70	10.38728	2618.730	−37.300	215–316
C_3H_6O	acetone	329.40	9.76775	2787.498	−43.486	260–328
C_3H_8	propane	231.10	9.10434	1872.824	−25.101	192–331
C_3H_8O	1-propanol	370.40	11.21152	3310.394	−74.687	333–378
C_3H_8O	2-propanol	355.40	13.82295	4628.956	−20.514	247–356
$C_3H_8O_2$	2-methoxy-ethanol	397.60	11.45476	4130.796	−36.273	290–447
C_4H_8O	2-butanone	352.80	9.64438	2904.340	−51.181	316–361
C_4H_8O	tetrahydrofuran	339.10	9.48686	2768.375	−46.896	296–373
$C_4H_8O_2$	1,4-dioxane	374.50	10.49171	3579.781	−32.813	293–378
$C_4H_8O_2$	butyric acid	436.40	13.43588	5602.222	−17.961	293–423
$C_4H_8O_2$	ethylacetate	350.30	9.73241	2866.606	−55.269	289–349
C_4H_9NO	morpholine	401.40	9.86713	3333.452	−63.150	317–443
C_4H_{10}	n-butane	272.70	9.05814	2154.897	−34.420	196–292
C_4H_{10}	isobutane	261.40	9.15169	2133.243	−28.162	165–345
$C_4H_{10}O$	diethylether	307.70	9.91763	2847.722	−20.110	308–432
$C_4H_{10}O_2$	2-ethoxyethanol	408.30	11.38407	4149.028	−43.150	336–407
C_5H_5N	pyridine	388.40	9.52860	3124.447	−60.495	254–388
C_5H_{12}	pentane	309.15	9.21312	2477.075	−39.945	223–331
C_6H_5Cl	chlorobenzene	404.90	9.77659	3485.354	−48.327	260–335
$C_6H_5NO_2$	nitrobenzene	484.00	9.79835	4032.655	−71.814	317–484
C_6H_6	benzene	353.20	9.22142	2755.642	−53.989	281–353
C_6H_6O	phenol	455.00	9.33802	3183.669	−113.657	336–455
C_6H_{12}	cyclohexane	353.90	9.15600	2778.000	−50.014	280–354
$C_6H_{12}O$	cyclohexanol	434.30	12.61197	5200.527	−21.526	317–434
$C_6H_{12}O_2$	butylacetate	399.20	9.79073	3293.659	−62.405	333–399
C_6H_{14}	hexane	341.90	9.29213	2738.418	−46.870	243–443
C_7H_8	toluene	383.80	9.38490	3090.783	−53.963	246–384
C_7H_{16}	heptane	371.60	9.25363	2911.320	−56.510	270–400
C_8H_{10}	ethylbenzene	409.30	9.41928	3291.661	−59.383	263–409
C_8H_{18}	octane	399.15	9.34011	3128.752	−63.295	259–399
H_2O	water	373.10	11.96481	3984.923	−39.724	274–373
NH_3	ammonia	239.80	10.88865	2363.237	−22.621	200–379
N_2	nitrogen	77.40	8.74393	648.592	−2.976	65–115
O_2	oxygen	90.20	8.43907	674.588	−10.093	60–125