Ujian Kompetensi Dasar

Mata Kuliah : Perancangan Eksperimen
Dosen : Dr. Eko Pujiyanto, S.Si., M.T.
Hari/Tanggal : Kamis, 22 November 2012
Waktu : 14.00 – 14.45 (45 Menit)
Sifat : Buka Buku

Kerjakan di lembar ini
(Coretan di halaman sebaliknya)

Nama :

Nim :

1. Eksperimen Faktorial

5-7 A mechanical engineer is studying the thrust force developed by a drill press. He suspects that the drilling speed and the feed rate of the material are the most important factors. He selects four feed rates and uses a high and low drill speed chosen to represent the extreme operating conditions. He obtains the following results. Analyze the data and draw conclusions. Use $\alpha = 0.05$.

(A)		Feed	Rate (B)	
Drill Speed	0.015	0.030	0.045	0.060
125	2.70	2.45	2.60	2.75
	2.78	2.49	2.72	2.86
200	2.83	2.85	2.86	2.94
	2.86	2.80	2.87	2.88

Lengkapi Anova berikut (sertakan hitungannya) dan ambil kesimpulan.

Source	*df*	*SS*	*MS*	*Fhitung*	*F Tabel*
A	.....	0.15	.....	.....	.....
B	.....	.....	.....	.....	.....
A x B	.....	.....	.....	.....	.....
Error	.....	.....	.....		
Total	.....	0.30			

2. Expected Mean Square

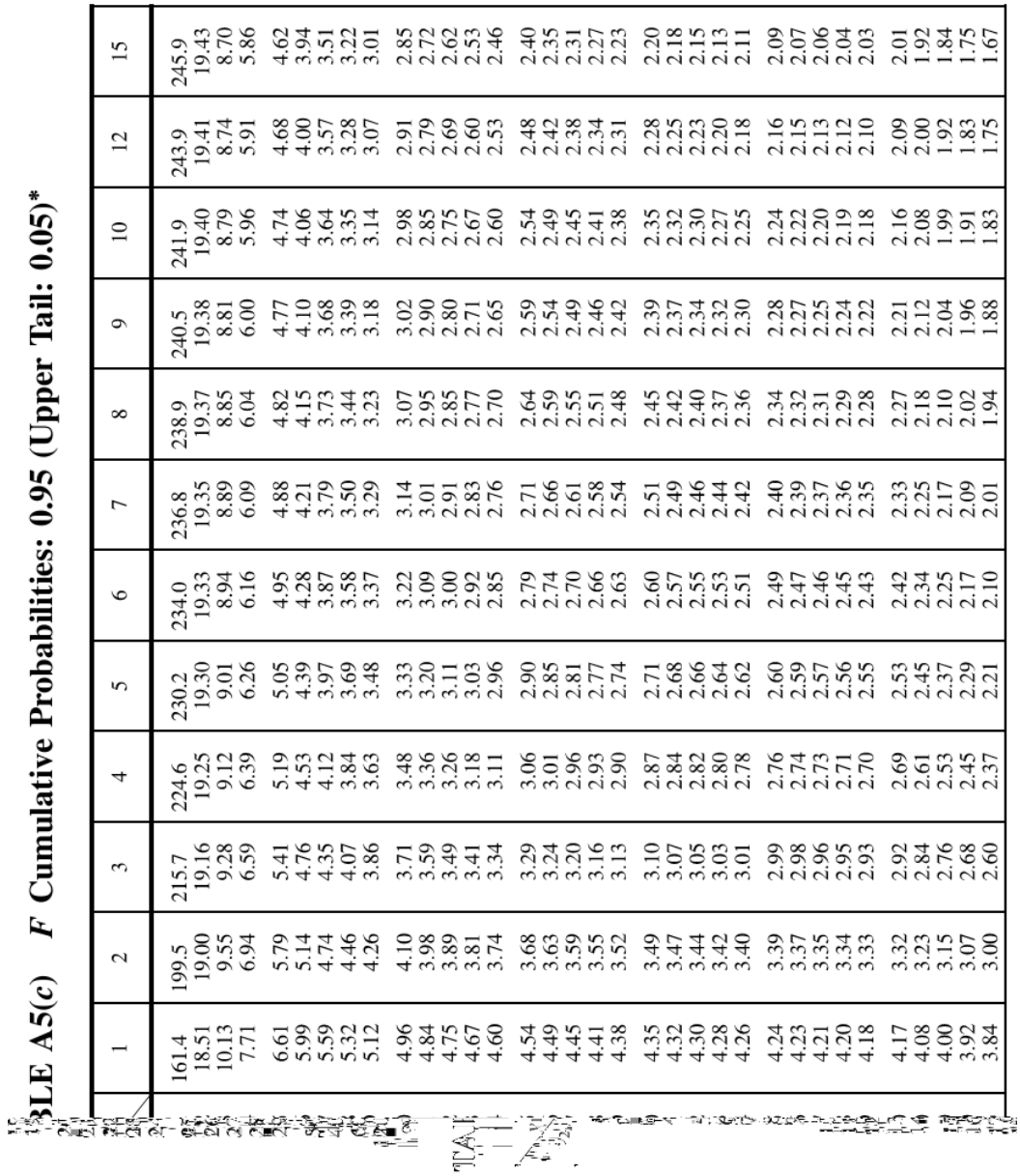
During a random workday, 4 production runs were randomly selected from the large number of daily production runs. Six batches of raw material were randomly selected from the large number of available batches. In each of the 4 runs, the same 6 batches of raw materials were used to make a synthetic fiber. Three random sample were taken from each (production run)*batch combination. The $N = 72$ samples were randomized before taking strength measurements.

Lengkapi Tabel Anova berikut (untuk df = angka , untuk EMS dan F = rumus)

Source	df	*EMS*	*F*
Prod_Run	.....	.....	.....
Batch	.....	.....	.....
Prod_Run x Batch	.....	.....	.....
Error	.....	.....	

Lengkapi (semua dalam angka) Anova berikut dan ambil kesimpulan eksperimen di atas.

Source	df	EMS	F Hitung	F Tabel
Prod_Run	.....	306.88	.....	.....
Batch	.....	264.14	.....	.....
Prod_Run x Batch	.....	3.61	.....	.....
Error	.....	0.26		



BLE A5(*c*) *F* Cumulative Probabilities: 0.95 (Upper Tail: 0.05)*

	1	2	3	4	5	6	7	8	9	10	12	15
	161.4	199.5	215.7	224.6	230.2	234.0	236.8	238.9	240.5	241.9	243.9	245.9
	18.51	19.00	19.16	19.25	19.30	19.33	19.35	19.37	19.38	19.40	19.41	19.43
	10.13	9.55	9.28	9.12	9.01	8.94	8.89	8.85	8.81	8.79	8.74	8.70
	7.71	6.94	6.59	6.39	6.26	6.16	6.09	6.04	6.00	5.96	5.91	5.86
	6.61	5.79	5.41	5.19	5.05	4.95	4.88	4.82	4.77	4.74	4.68	4.62
	5.99	5.14	4.76	4.53	4.39	4.28	4.21	4.15	4.10	4.06	4.00	3.94
	5.59	4.74	4.35	4.12	3.97	3.87	3.79	3.73	3.68	3.64	3.57	3.51
	5.32	4.46	4.07	3.84	3.69	3.58	3.50	3.44	3.39	3.35	3.28	3.22
	5.12	4.26	3.86	3.63	3.48	3.37	3.29	3.23	3.18	3.14	3.07	3.01
	4.96	4.10	3.71	3.48	3.33	3.22	3.14	3.07	3.02	2.98	2.91	2.85
	4.84	3.98	3.59	3.36	3.20	3.09	3.01	2.95	2.90	2.85	2.79	2.72
	4.75	3.89	3.49	3.26	3.11	3.00	2.91	2.85	2.80	2.75	2.69	2.62
	4.67	3.81	3.41	3.18	3.03	2.92	2.83	2.77	2.71	2.67	2.60	2.53
	4.60	3.74	3.34	3.11	2.96	2.85	2.76	2.70	2.65	2.60	2.53	2.46
	4.54	3.68	3.29	3.06	2.90	2.79	2.71	2.64	2.59	2.54	2.48	2.40
	4.49	3.63	3.24	3.01	2.85	2.74	2.66	2.59	2.54	2.49	2.42	2.35
	4.45	3.59	3.20	2.96	2.81	2.70	2.61	2.55	2.49	2.45	2.38	2.31
	4.41	3.55	3.16	2.93	2.77	2.66	2.58	2.51	2.46	2.41	2.34	2.27
	4.38	3.52	3.13	2.90	2.74	2.63	2.54	2.48	2.42	2.38	2.31	2.23
	4.35	3.49	3.10	2.87	2.71	2.60	2.51	2.45	2.39	2.35	2.28	2.20
	4.32	3.47	3.07	2.84	2.68	2.57	2.49	2.42	2.37	2.32	2.25	2.18
	4.30	3.44	3.05	2.82	2.66	2.55	2.46	2.40	2.34	2.30	2.23	2.15
	4.28	3.42	3.03	2.80	2.64	2.53	2.44	2.37	2.32	2.27	2.20	2.13
	4.26	3.40	3.01	2.78	2.62	2.51	2.42	2.36	2.30	2.25	2.18	2.11
	4.24	3.39	2.99	2.76	2.60	2.49	2.40	2.34	2.28	2.24	2.16	2.09
	4.23	3.37	2.98	2.74	2.59	2.47	2.39	2.32	2.27	2.22	2.15	2.07
	4.21	3.35	2.96	2.73	2.57	2.46	2.37	2.31	2.25	2.20	2.13	2.06
	4.20	3.34	2.95	2.71	2.56	2.45	2.36	2.29	2.24	2.19	2.12	2.04
	4.18	3.33	2.93	2.70	2.55	2.43	2.35	2.28	2.22	2.18	2.10	2.03
	4.17	3.32	2.92	2.69	2.53	2.42	2.33	2.27	2.21	2.16	2.09	2.01
	4.08	3.23	2.84	2.61	2.45	2.34	2.25	2.18	2.12	2.08	2.00	1.92
	4.00	3.15	2.76	2.53	2.37	2.25	2.17	2.10	2.04	1.99	1.92	1.84
	3.92	3.07	2.68	2.45	2.29	2.17	2.09	2.02	1.96	1.91	1.83	1.75
	3.84	3.00	2.60	2.37	2.21	2.10	2.01	1.94	1.88	1.83	1.75	1.67

Orang JUJUR lebih baik dari pada orang PINTAR dan orang BEJO