231062

臺中健康暨管理學院九十學年度碩士班招生考試試題紙

所　　別	組 別	考試科目	考試日期	節 次	備　　註
健康管理研究所	丙	統計學	5 月 5 日	第三節	

1.選擇題（每小題 2.5 分）

1) The value of of the coefficient of determination is always in the range
   a. 0 to 1　b. –1 to 0　c. –1 to 1

2) The χ^2 goodness-of-fit test are
   a. right-tailed　b. left-tailed　c. two-tailed

3) The smallest level of significance at which a null hypothesis will be rejected is called
   a. α　b. p-value　c. probability of making a type *II* error

4) The standard deviation of the sampling distribution of the sample mean decreases when sample size
   a. decreases　b. constant　c. increases

5) Usually the normal distribution is used as an approximation to the binomial distribution when
   a. $n \geqq 30$　b. $np > 5$ and $nq > 5$　c. $np > 5$ or $nq > 5$

6) The mean and variance of a binomial probability distribution with $n = 25$ and $p = 0.2$
   a. 5 and 4　b. 2 and 4　c. 5 and 2

7) Mutually exclusive events are always
   a. independent　b. complementary　c. dependent

8) Chebyshev's theorem can be applied to
   a. bell-shaped distributions only　b. skewed distributions only
   c. any distribution

9) When using t distribution to make inferences about a single parameter, the degrees of freedom for a multiple regression model with k independent variables and a sample size of n are equal to
   a. $n+k-1$　b. $n-k+1$　c. $n-k-1$

10) If the F test shows an overall significance, which test is used to determine whether each of the individual independent variables is significant
   a. Z test　b. t test　c. χ^2 test

2. 若某醫院急診部門平均每 15 分鐘有 10 位病人到達，其分配服從卜瓦松分配 (Poission distribution)。試問
   a) 兩位病人到達之時間間隔，應服從何種分配？ (10%)
   b) 該醫院急診部門 30 分鐘內，無病人到達之機率？ (15%)

3.某研究為探討性別對特定公共衛生議題的反應態度有否差異，隨機抽取男性 20 位與女性 21 位。根據統計結果男性對特定公共衛生議題的反應態度之變異數為 4.0，女性則為 8.0。試問顯著水準α為 5%時之研究結論為何？ (25%)

※試題隨卷繳回

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4.The following ANOVA table, based on information obtained for three samples selected from three independent populations that are normally distributed with equal variances, has a few missing values.

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	Value of the Test Statistic
Between	2		20	
Within		100		F = ——— =
Total	12			

a) Find the missing values and complete the ANOVA table. (15%)

b) Using α=.025, what is your conclusion for the test with the null hypothesis that the means of the three populations are all equal against the alternative hypothesis that the means of the three populations are not all equal? (10%)

***F* Distribution**

Table of $F_{.025}$ Values

Denominator Degrees of Freedom	Numerator Degrees of Freedom																		
	1	2	3	4	5	6	7	8	9	10	12	15	20	24	30	40	60	120	∞
1	647.8	799.5	864.2	899.6	921.8	937.1	948.2	956.7	963.3	968.6	976.7	984.9	993.1	997.2	1,001	1,006	1,010	1,014	1,018
2	38.51	39.00	39.17	39.25	39.30	39.33	39.36	39.37	39.39	39.40	39.41	39.43	39.45	39.46	39.46	39.47	39.48	39.49	39.50
3	17.44	16.04	15.44	15.10	14.88	14.73	14.62	14.54	14.47	14.42	14.34	14.25	14.17	14.12	14.08	14.04	13.99	13.95	13.90
4	12.22	10.65	9.98	9.60	9.36	9.20	9.07	8.98	8.90	8.84	8.75	8.66	8.56	8.51	8.46	8.41	8.36	8.31	8.26
5	10.01	8.43	7.76	7.39	7.15	6.98	6.85	6.76	6.68	6.62	6.52	6.43	6.33	6.28	6.23	6.18	6.12	6.07	6.02
6	8.81	7.26	6.60	6.23	5.99	5.82	5.70	5.60	5.52	5.46	5.37	5.27	5.17	5.12	5.07	5.01	4.96	4.90	4.85
7	8.07	6.54	5.89	5.52	5.29	5.21	4.99	4.90	4.82	4.76	4.67	4.57	4.47	4.42	4.36	4.31	4.25	4.20	4.14
8	7.57	6.06	5.42	5.05	4.82	4.65	4.53	4.43	4.36	4.30	4.20	4.10	4.00	3.95	3.89	3.84	3.78	3.73	3.67
9	7.21	5.71	5.08	4.72	4.48	4.32	4.20	4.10	4.03	3.96	3.87	3.77	3.67	3.61	3.56	3.51	3.45	3.39	3.33
10	6.94	5.46	4.83	4.47	4.24	4.07	3.95	3.85	3.78	3.72	3.62	3.52	3.42	3.37	3.31	3.26	3.20	3.14	3.08
11	6.72	5.26	4.63	4.28	4.04	3.88	3.76	3.66	3.59	3.53	3.43	3.33	3.23	3.17	3.12	3.06	3.00	2.94	2.88
12	6.55	5.10	4.47	4.12	3.89	3.73	3.61	3.51	3.44	3.37	3.28	3.18	3.07	3.02	2.96	2.91	2.85	2.79	2.72
13	6.41	4.97	4.35	4.00	3.77	3.60	3.48	3.39	3.31	3.25	3.15	3.05	2.95	2.89	2.84	2.78	2.72	2.66	2.60
14	6.30	4.86	4.24	3.89	3.66	3.50	3.38	3.29	3.21	3.15	3.05	2.95	2.84	2.79	2.73	2.67	2.61	2.55	2.49
15	6.20	4.77	4.15	3.80	3.58	3.41	3.29	3.20	3.12	3.06	2.96	2.86	2.76	2.70	2.64	2.59	2.52	2.46	2.40
16	6.12	4.69	4.08	3.73	3.50	3.34	3.22	3.12	3.05	2.99	2.89	2.79	2.68	2.63	2.57	2.51	2.45	2.38	2.32
17	6.04	4.62	4.01	3.66	3.44	3.28	3.16	3.06	2.98	2.92	2.82	2.72	2.62	2.56	2.50	2.44	2.38	2.32	2.25
18	5.98	4.56	3.95	3.61	3.38	3.22	3.10	3.01	2.93	2.87	2.77	2.67	2.56	2.50	2.44	2.38	2.32	2.26	2.19
19	5.92	4.51	3.90	3.56	3.33	3.17	3.05	2.96	2.88	2.82	2.72	2.62	2.51	2.45	2.39	2.33	2.27	2.20	2.13