

## EXAMEN TOEPASSINGEN VAN STATISTIEK 2017

Question 1:

SAS output invullen

- DF, MSR, MSE, F, p-value, Type I, Type III, intercept, coefficients
- Compare means with Tukey method, give difference, confidence interval, significance
- Rare grafiek, Type I en Type II zone aanduiden...
- Multiple choice (True/False): given the output, it is possible to assess following hypothesis
  - $H_0$ : Mean a = Mean C (True) and not  $H_0$
  - $H_0$ : mean A = Mean D (false) and not  $H_0$
  - $H_0$ : B = Mean D (false) And not  $H_0$
  - $H_0$ : all means are equal vs not all means are equal (true)

Question 2:

- Give the name of the model that is assessed here : logistic model
- Compute the probabilities
- Sas statements
- Survival analysis. Given 3 observations, at  $t = 20$ , first one is censored,  $t=35$  observation dies,  $T=45$  other observation dies.

Question 3: Binary Logit Food vs. Non Food

- Sas output invullen FP/TP/Sensitivity/Correct events/incorrect events, enz. Voor  $p = 0$ ,  $P = 0,5$ ,  $P=1$ .
- Multiple choice question True/False
  - 1 and 13 are a discordant pair False: false
  - 1 and 26 are a concordant pair True:true

Question 4

- Compute the total number of accidents given alcohollock + 200 accidents previously
- Plot regression in a graph
- Multiple Choice questions True/False
  - Alcohollock does not help that much to decrease the total number of accidents (True since the P-value  $> 0,05$ )  $\rightarrow$  false, P-value is about difference
  - The best way to decrease the number of accidents is ... ?
  - A model with random effects would be better (true? false?)

Question 5

Question 6

- You want to find out whether a student will study HIR or burgerlijk ingenieur based on IQ and other test. Which model would you use?
  - Anova
  - **Discriminant Analysis**
  - Factor
  - Cluster
- Give the Sas statements

Question 7:

- **A: Exponential B: Weibull with  $\gamma > 1$**
- A: Exponential B: exponential
- **A: Exponential B: Weibull  $\gamma < 1$**
- A: Weibull, B Weibull  $\gamma < 1$

Question 8: Given a table with clusters, draw the dendrogram. How many clusters would you make based on the provided data (3 clusters).