

Ollscoil na hÉireann, Gaillimh  
National University of Ireland, Galway

Summer Examination 2001

**Diploma in Health Services Research**

**Paper 2**

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Answer 1 question from each Section  
45 minutes for each question

Use one answer book for *each question*

Time Allowed: 2 hours 15 minutes

**Section A: Epidemiology**

- Q1. Large scale longitudinal studies like that of Whitehall civil servants provide important information on all cause and disease specific mortality. Explain why, taking particular account of concepts of risk in your answer.
- Q2. What is the purpose of an intention to treat design in the case of experimental studies? How does such a design affect the validity and applicability of the study findings. Illustrate with examples in the case of clinical, field or community studies.

(C. Kelleher)

**Section B: Research Methodology in Social Sciences**

- Q3. Discuss the main issues you would need to consider when planning a study employing either:  
Focus group methods; or  
A self-completion questionnaire
- Q4. Why is the research question so important for preparing and conducting a research study.

(S. NicGabhainn)

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**Section C: Advanced Computing**

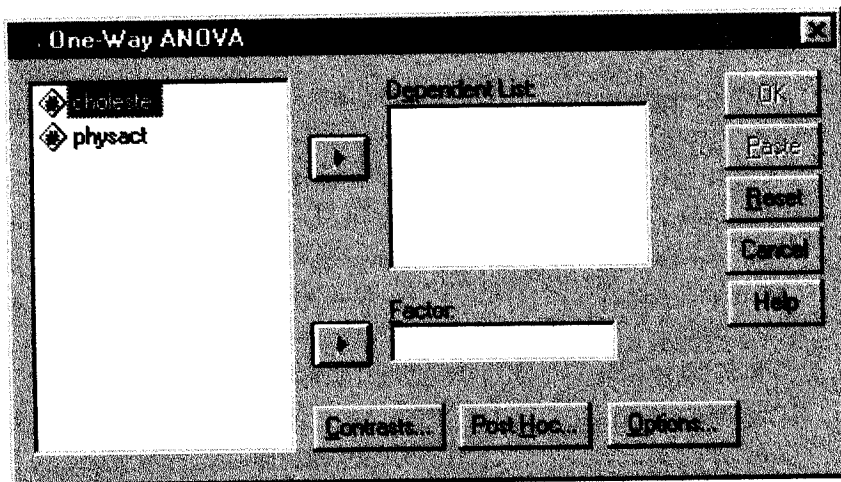
- Q5. Health research is to a large extent aimed at determining the association between two variables.

Table 1 summarises hypothetical data relating to mean serum cholesterol by physical activity and gender.

Table 1: Mean serum cholesterol (mg/100ml) by Physical Activity level and Gender

	Males		Female		Total	
	N	Mean	N	Mean	N	Mean
Heavy Activity	25	220	25	215	50	218.3
Moderate	25	240	25	220	50	230.0
Light Activity	50	240	50	235	100	237.0
Overall	100	230	100	230	200	230.0

- Describe the Scales of Measurement used for each of the three variables Serum Cholesterol, Physical Activity and Gender.
- If entering this data into the computer package, SPSS, describe how you would set up each variable e.g. coding system and labels.
- What type of analysis would you use to test whether cholesterol varies across physical activity level?
  - The Dependent Variable in the test in c) above
  - The Factor in the test in c) above



(S. Friel)

Q6.

- a) Multiple Linear Regression involves the regression of independent predictor variables on a quantitative dependent variable.

Which scales of measurement are appropriate for the dependent and independent variables?

- b) Individual rating of health status may be affected by a number of health-related behaviours such as smoking and alcohol consumption.

Which type of statistical analysis would you use to predict level of health state (on a scale of 0-100) based on both the number of cigarettes smoked and amount of alcohol consumed?

- c) From the SPSS printout below, explain the meaning of R Square, the F statistic and its significance level.
- d) Interpret the Standardised Beta coefficients and their significance levels. What is the main difference between B and Beta?

## Regression

### Variables Entered/Removed

Model	Variables Entered	Variables Removed	Method
1	NUMBER OF DRINKS, NUMBER OF CIGARETTES	.	Enter
1	NUMBER OF DRINKS, NUMBER OF CIGARETTES	.	Enter

- a All requested variables entered.
- b Dependent Variable: LEVEL OF HEALTH

(Q6 continued on next page):

(Q6 continued):

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.109	.012	-.008	38.66
1	.109	.012	-.008	38.66

a Predictors: (Constant), NUMBER OF DRINKS, NUMBER OF CIGARETTES

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	1755.499	2	877.749	.587	.558
	Regression	1755.499	2	877.749	.587	.558
	Residual	146463.630	98	1494.527		
	Residual	146463.630	98	1494.527		
	Total	148219.129	100			
	Total	148219.129	100			

a Predictors: (Constant), NUMBER OF DRINKS, NUMBER OF CIGARETTES

b Dependent Variable: LEVEL OF HEALTH

Coefficients

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
	B	Std. Error	Beta		
(Constant)	47.160	7.976		5.913	.000
(Constant)	47.160	7.976		5.913	.000
NUMBER OF DRINKS	-.131	.469	-.028	-.280	.780
NUMBER OF DRINKS	-.131	.469	-.028	-.280	.780
NUMBER OF CIGARETTES	.442	.410	.110	1.078	.284
NUMBER OF CIGARETTES	.442	.410	.110	1.078	.284

a Dependent Variable: LEVEL OF HEALTH

(S. Friel)