



**COLLEGE OF BUSINESS AND ECONOMICS**  
**JANUARY SUPPLEMENTARY EXAMINATION**  
**2018**

**DEPARTMENT INDUSTRIAL PSYCHOLOGY & PEOPLE MANAGEMENT**

**PROGRAMME IN INDUSTRIAL PSYCHOLOGY**

**MODULE:** Psychometric Theory  
**CODE :** IPS8x07  
**DATE:** Janaury 2018  
**TIME:** 3 HOURS  
**TOTAL MARKS:** 100

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**EXAMINER:** Prof Carin Hill  
**EXTERNAL EXAMINER:** Ms Leoni van der Vaart  
**NUMBER OF PAGES:** 4

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**INSTRUCTIONS**

- Question papers must be handed in
  - Read the questions carefully and answer only what is asked
  - The general University of Johannesburg policies, procedures and rules pertaining to written assessments apply to this assessment
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**WRITTEN EXAM (CLOSED BOOK)**

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**Question 1**

**(5)**

You contacted 750 people to complete your survey. 150 people declined to participate. Calculate your response bias percentage and comment on whether it is a high or a low response rate.

**Question 2**

**(18)**

Name and describe six (6) types of validity that you could investigate during instrument development.

**Question 3**

**(20)**

Name and discuss the four (4) issues that you could encounter during pilot testing.

**Question 4**

**(3)**

Name three (3) methods of sampling.

**Question 5**

**(4)**

Name four (4) ethical issues in recruiting samples for a research study.

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## PRACTICAL EXAM (OPEN BOOK)

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Use the provided data file (Exam 1.sav) to conduct the relevant analyses in SPSS in order to answer the questions below.

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### Question 6: Descriptive statistics

(15)

The first step in the analysis of any data file is to obtain descriptive statistics on each of your variables. These can be used to check for out-of-range cases, to explore the distribution of the scores, and to describe your sample in the Method section of a report.

Using Appendix 5 from your Loewenthal textbook, answer the following questions concerning the variables included in the Exam 1.sav data file.

- a) What is the mean number of **cigarettes** smoked by the sample?
- b) What is the **age** range of the sample (minimum and maximum values)?
- c) What is the percentage of people **with children living with them** and **without children living with them** in the sample?
- d) Did any of the sample fail to indicate whether they **smoked**?
- e) Run Frequencies on the variable **marital status** (marital) and report how many people fall into each of the marital categories.
- f) What percentage of the sample were **male**?

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### Question 7: Reliability

(5)

If you use scales or standardised measures in your research (this is common in psychological research) it is important to assess the reliability (internal consistency) of the scores on the scale in your sample.

Follow the procedure in Appendix 5 from your Loewenthal textbook to assess the reliability of the following scales:

- a) Mastery scale (mast1 to mast7)
- b) Life Satisfaction scale (lifsat1 to lifsat5)
- c) Self-esteem scale (sest1 to sest10)

Report each scale's reliability and indicate if the reliability could be improved by deleting any of the items.

**Question 8: Factor analysis****(30)**

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One of the scales included in the Exam 1.sav data file is the Positive and Negative Affect scale (PANAS: Watson, Clark, & Tellegen, 1988). The PANAS comprises of twenty adjectives relating to various mood states, ten positive (proud, active, determined) and ten negative (nervous, irritable, upset). Watson et al. (1988) suggest that the PANAS consists of two underlying dimensions (or factors) namely positive affect and negative affect.

Conduct a factor analysis using the instructions given during class to explore the factor structure of the PANAS (pn1 to pn20). Report on the following:

- a) The suitability of the data for factor analyses
- b) How many factors should be extracted? Give reasons for your answer
- c) Comment on the strength of the relationship between your extracted factors

Print your output and hand in for examination.

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**End of Exam**

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