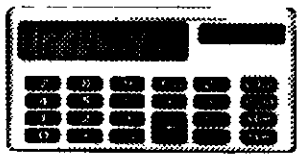
UNIVERSITY EXAMINATIONS



UNIVERSITEITSEKSAMENS

UNISA university of south africa

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PSYCHOLOGICAL RESEARCH (PSYCHOLOGY)

Duration 2 Hours 70 Marks

EXAMINERS

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Use of a non-programmable pocket calculator is permissible

This paper consists of 19 pages plus 2 blank pages for rough work (pp 20 & 21) plus 1 page (i) of formulae and tables(ii-v) as well as instructions for the completion of a mark reading sheet

After completing your answers, you must hand in the following

(i) The mark reading sheet
(ii) The question paper (All the pages must be handed in)

This exam paper consists of seventy items Your mark will be converted to a mark out of 90 and 10% of your assignment mark will be added, to produce a mark out of 100 [Note that if your mark is less than 40% the assignment mark will not be added]

ENSURE THAT YOU HAVE WRITTEN YOUR **STUDENT NUMBER** AND **COURSE CODE** ON THE MARK READING SHEET

Please complete the attendance register on the back page, tear off and hand to the invigilator

NOTE: An adjustment will be made for guessing based on the number of items answered incorrectly

[TURN OVER]

ANSWER THE FOLLOWING SEVENTY MULTIPLE CHOICE QUESTIONS ON THE MARK READING SHEET. READ THE ATTACHED INSTRUCTIONS AND FOLLOW THEM CAREFULLY.

Question 1

Which of the following best describes "latent"?

1 observable
2 manifest
3 hidden

Question 2

An operational definition defines a - - - - - in terms of - - - - -

1 manifest variable, observable behaviour
2 theoretical construct, observable consequences
3 observable construct, other constructs

Question 3

The building blocks of psychological theories are most accurately described as - - - - -

1 concepts
2 constructs
3 variables

Use the following scenario to answer Questions 4 and 5

Ross' explanation of size perception in the natural environment indicates how the estimated size of a distant object is affected by its true size, distance from the observer, and transparency of the atmosphere He decides to investigate whether estimated size increases with haziness

Question 4

"Estimated size increases with haziness" is - - - - -

1 an observed relation between two variables
2 a research hypothesis
3 an operational definition

Question 5

The independent variable in Ross' research is - - - -

1 haziness
2 estimated size
3 size perception in the natural environment

Question 6

"A manic episode is a period of at least a week during which a person experiences an abnormal and persistent cheerful or irritated mood" This statement - - - - -

1 is a prediction based on a psychological theory of behaviour
2 describes the latent implications of a construct
3 is an operational definition of a construct

Question 7

A psychological theory is best defined as - - - - -

1 a set of observations
2 postulated relations between variables
3 statistical predictions

Question 8

The (a) - - - - - variable can be said to "cause" the (b) - - - - - variable

1 (a) dependent (b) independent
2 (a) operational (b) measured
3 (a) independent (b) dependent

Question 9

In a study, the relationship between anxiety (high and low) and test performance (measured in terms of pass and fail) is considered A suitable hypothesis for the study can be viewed as a - - - - -

1 rule associating the values of 'anxiety' with the values of 'test performance'
2 correlation between the constants 'anxiety' and 'test performance'
3 rule correlating the values of the variable 'test performance'

Question 10

A psychologist is conducting a study about the self-concepts of university students He makes the assumption that students' concepts of themselves can be used to predict their willingness to participate in class discussions In order to be able to do a scientific study of this (a) - - - - - question, he would have to provide a (an) (b) - - - - - definition of the (c) - - - - - called "self-concept"

1	(a) scientific	(b) experimental	(c) concept
2	(a) experimental	(b) research	(c) operational concept
3	(a) research	(b) operational	(c) construct

Question 11

Select the most appropriate definition of a psychological theory

1 Psychological theories are sets of observations about human nature
2 Psychological theories are best defined as statements about the principles underlying human behaviour, but these statements are not testable
3 Psychological theories make predictions about relations between variables

Question 12

Operational definitions enable us to - - - - -

(a) make observations of constructs
(b) link constructs to observable phenomena

1 (a) but not (b)
2 (b) but not (a)
3 (a) and (b)

Question 13

If 5000 students wrote an exam, 3000 passed with 50% or more and 250 obtained exactly 50%, what is the value of p(50%|pass) for randomly selected students?

1 0,025
2 1/12
3 1

Question 14

The area under the standard normal curve equals - - - - -

1 its mean
2 its standard deviation
3 one

Question 15

John received 45 marks for his psychology test The average mark for this test is 35, and the standard deviation is 10 What is John's z-score?

1 1
2 0,34
3 0,16

Question 16

A probability distribution of the ages in months of South African Grade 1 children indicates for each - - - - what the corresponding - - - - - is

1 child, age of that child
2 age in months, number of children of that age
3 age in months, relative frequency at that age

Question 17

John scored 15 in English (class mean 12, standard deviation 3) and 18 in Geography (class mean 13, standard deviation 5) Use z-scores to decide which statement is true Relative to the rest of his class John does - - - - -

1 better in English than in Geography
2 equally well in English and Geography
3 better in Geography than in English

Question 18

Why is the central limit theorem of importance in inferential statistics?

1 Because it informs us how sampling error will increase as the population increases
2 Because it tells us that sampling error will begin to approximate a normal distribution as samples grow larger
3 Because it shows that the sampling distributions of certain sampling statistics will approach a normal distribution as sample sizes increase

Question 19

If you select one marble randomly from a bag containing 18 red , 17 blue, and 12 green marbles, what is the probability of the marble being green?

1 0,26
2 0,38
3 0,36

Question 20

Which statement best represents an application of the law of large numbers? If I flip a coin 1000 times it will fall heads up - - - - - 500 times

1 approximately
2 exactly
3 at least

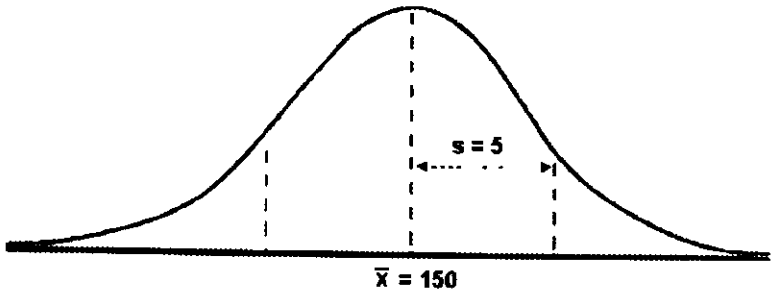
Question 21

Statistics that are used to convey information about a population are called

1 parameters
2 inferential statistics
3 samples

Question 22

Study the following figure of the normal curve



What is the size of the area under the curve, to the right side of the mean?

1 100%
2 0,50
3 5

Question 23

What is the probability of selecting a boy in a class with 63 girls and 5 boys

1 0, 07
2 0,08
3 0,01

Question 24

The expression "0,05 ≤ p ≤ 0,10" denotes a probability value - - - - -

1 larger than 0,05 and smaller than 0,10
2 larger than or equal to 0,10, or smaller than or equal to 0,05
3 larger than or equal to 0,05 and smaller than or equal to 0,10

Question 25

When applying a statistical test, the p-value represents the probability of obtaining the - - - - -

1 sample statistic under the alternative hypothesis
2 population parameter under the null hypothesis
3 sample statistic under the null hypothesis

Question 26

The hypothesis "H_1 $\mu < 30$" is a - - - - - hypothesis and requires a - - - - - statistical test

1 non-directional, one-tailed
2 directional, two-tailed
3 directional, one-tailed

Question 27

When applying a statistical test a decision is reached by comparing the - - - - - to the - - - - -

1 p-value, level of significance
2 test statistic, population parameter
3 test statistic, level of significance

Question 28

The lower we set the level of significance, the greater the probability of - - - - -

1 rejecting the null hypothesis
2 a type I error
3 a type II error

Base your answers to Questions 29 to 32 on the following scenario

A researcher hypothesizes that babies born prematurely will be somewhat less intelligent as young adults than their peers She uses the records of various maternity hospitals to identify a random sample of 25 persons who are now young adults, but who were born more than four weeks prematurely She measures the IQ of each, using the SAWAIS (IQ scores on this test are distributed normally in the general population, with a mean of 100 and a standard deviation of 15) Suppose she finds that the mean IQ score of her sample is 97,9 and the standard deviation of the scores is 17

Question 29

Which of the following best describes the theoretical hypothesis to be tested?

1 Low intelligence is caused by premature birth
2 Premature birth is associated with low intelligence
3 Premature birth is not associated with lower intelligence

Question 30

Which research design did the researcher use?

1 Correlational design
2 Single-sample groups design
3 Two-sample groups design

Question 31

Which is the appropriate test statistic to calculate?

1 The t-statistic for the difference between the means of two independent groups
2 The t-statistic for the mean of a single group
3 The z-statistic for the mean of a single group

Question 32

What are the requirements with regard to the type of statistical test that may be required to interpret the research results?

1 No statistical test is required
2 A one-tailed statistical test should be performed
3 A two-tailed statistical test should be performed

Question 33

Suppose the level of significance is set at 0,05, and the appropriate p-value is calculated as 0,04 **What is the** probability that the researcher will be making a Type I error should he decide to reject H_0 ?

1 0,04
2 0,05
3 Normally not possible to estimate

Question 34

When a statistical test yields a small p-value, which of the following statements is most correct?

1 The alternative hypothesis is probably false
2 The null hypothesis is probably true
3 The null hypothesis is probably false

Question 35

If we assume that the alternative hypothesis "The population mean is smaller than 50" is true, which of the following statements is true of the sampling distribution of the mean?

1 It is assumed to be the same as under the null hypothesis
2 It cannot be derived
3 It is assumed to correspond to the lower half of a normal distribution

Question 36

A type II error occurs when - - - - -

1 the null hypothesis is wrongly rejected
2 the null hypothesis is wrongly not rejected
3 the alternative hypothesis is wrongly accepted

Question 37

If a research result looks psychologically important but is found to be not statistically significant, what might the researcher consider doing when repeating the research?

1 Use a larger sample
2 Set a lower level of significance
3 Use a less powerful statistical test

Questions 38 and 39 are based on the following case

Lisa is a human resource consultant and her boss asks her to test if the employees in their company (population A) have a more positive attitude towards work than the average worker in South Africa (population B) Lisa decides to use a standardized test which measures work attitude (a high score indicates a positive attitude) with a mean score of 120 for the population (population B)

Question 38

Which of the following statements translates the research hypothesis into the correct statistical hypotheses?

1 Ho $\mu = 120$
H_1 $\mu < 120$

2 Ho $\mu = 120$
H_1 $\mu > 120$

3 Ho $\mu = 120$
H_1 $\mu \neq 120$

Question 39

Lisa finds that the employees in her company obtained a score of 130 Which of the following statements is true about the result?

The employees in Lisa's company - - - - -

1 do not have a more positive attitude towards work and it is not needed to test this any further
2 obviously have a more positive attitude towards work than employees of other companies and it is not necessary to test this difference statistically
3 have a more positive attitude towards work than employees in other companies and she will have to test this difference further for significance

Question 40

Suppose you find that the value of the z_c-statistic calculated for your research results is zero Which conclusion is appropriate?

1 The null hypothesis should be rejected
2 The null hypothesis is likely to be true
3 The alternative hypothesis is likely to be true

Questions 41 and 42 are based on the following case

Peter is a human resource consultant and his boss asks him to test the workers in their company (representative of population A, say) and to determine if their attitudes towards workers with AIDS differ from that of the general worker in South Africa (population B) Suppose that on the basis of previous studies it is accepted that the mean attitude score of the population of workers in South Africa is 55 (the higher the score the more positive) and that the standard deviation is 16

Question 41

Which of the following statements translates the research hypothesis into the correct statistical hypotheses?

1 H_0 $\mu = 55$
H_1 $\mu < 55$

2 H_0 $\mu = 55$
H_1 $\mu > 55$

3 H_0 $\mu = 55$
H_1 $\mu \neq 55$

Question 42

Peter finds that the workers in his company have a mean attitude score of 50, based on a sample of n=40 What statistical test procedure is most appropriate to test the relevant hypothesis?

1 A t-test of a single sample mean
2 A z-test of a single sample mean
3 A t-test of two sample means

Question 43

Which one of the following alternative hypotheses requires a non-directional test of significance?

1 The mean anxiety score for boys is greater than that of girls
2 The mean verbal ability score for boys is lower than that of girls
3 The correlation between test marks and examination marks is not the same for boys and girls

Question 44

A researcher wants to determine whether a significant relationship exists between measurements of high risk behaviour and general anxiety levels in a sample of 200 people who have been diagnosed as HIV positive. She decides to use a very conservative level of significance of $\alpha = 0,001$ She is probably doing this to avoid committing a - - - -

1 type I error
2 type II error
3 standard error

Base your answers to Questions 45 and 46 on the following scenario

A researcher hypothesizes that chess-playing students are better at non-verbal reasoning than students in general. He draws a random sample of 25 students from the members of the chess clubs of South African universities and measures their non-verbal reasoning ability by means of a test developed for this purpose The scores of a large group of students on this test were found in earlier research to be distributed normally with a mean of 20 Suppose the researcher finds that the mean score of his sample is 20, and the standard deviation of the scores 6

Question 45

Which research design did the researcher use?

1 Single-sample groups design
2 Two-groups design
3 Two-groups design with a known population mean

Question 46

Which is the appropriate test statistic to calculate?

1 The z-statistic for the mean of a single sample
2 The t-statistic for the difference between the means of two independent samples
3 The t-statistic for the mean of a single sample

Question 47

Consider the following statistical hypothesis

H_0 $\mu = 120$
H_1 $\mu > 120$

If a sample of n=64 is drawn from the relevant population and it is found that $\bar{x}$=124,2 and s = 25, what is the value of the standard error ($s_{\bar{x}}$)?

1 25

2 $\frac{25}{\sqrt{64}}$

3 $\frac{25}{64}$

Question 48

Suppose you find that the value of a t-test statistic calculated for your research results is 3,0 and the appropriate p-value 0,02 Assume that the level of significance was set at 0,05 Which conclusion is appropriate?

1 Reject the null hypothesis
2 Do not reject the null hypothesis
3 Reject the alternative hypothesis

Question 49

The null hypothesis should be rejected when the ----- is smaller than -----

1 the test statistic, the level of significance
2 the p-value, the level of significance
3 the level of significance, the p-value

Question 50

Suppose H_0 $\mu = 100$ is tested against H_1 $\mu \neq 100$ at the 0,05 level of significance If the t-statistic is -3,20 and the one-tailed p-value is 0,04, what decision regarding the statistical hypothesis can be taken?

1 Reject H_0 and accept H_1
2 Reject H_1 and accept H_0
3 Do not reject H_0

Base your answers to Questions 51 and 52 on the following scenario

A marriage counsellor expects that second marriages more often end in divorce than first marriages She tests this hypothesis by following up 200 marriages that were all registered five years ago, 50 in which at least one partner had been married before and 150 in which neither partner had been married before Of the 150 first marriages 30 ended in divorce, of the 50 second marriages 10 ended in divorce

Question 51

Which constructs feature in the researcher's hypothesis?

1 Type of marriage (first/second), divorced (yes/no)
2 First marriage, second marriage, divorced (yes/no)
3 First marriage, second marriage, divorced, not divorced

Question 52

What type of statistical test is required?

1 A one-tailed statistical test
2 A two-tailed statistical test
3 No statistical test is necessary

Base your answers to Questions 53 and 54 on the following scenario

To validate a new depression scale a researcher applies it to 50 patients diagnosed with depression and 50 patients diagnosed with stress She predicts that the depression sample will score higher (more depression) than the stress sample The mean scores of the two samples are found to be 30 (standard deviation 10) and 25 (standard deviation 10) respectively

Question 53

Which is an appropriate alternative hypothesis for the analysis of the results?

1 $\mu > 25$
2 The population mean of the difference scores is larger than 25
3 $\mu_1 > \mu_2$

Question 54

What type of statistical test is required?

1 A one-tailed test
2 A two-tailed test
3 A two-directional test

Question 55

A teacher investigates the effect of extra classes on the performance of pupils in mathematics A group of 20 pupils receives the extra classes while a control group of 20 pupils receives singing lessons For each of the 40 pupils the teacher calculates the increase or decrease in his or her mathematics performance from an examination before the extra classes to an examination after the extra classes

Which research design is the teacher most likely to use?

1 A single-sample groups design
2 A two-sample groups design
3 A correlational design

Base your answers to Questions 56 and 57 on the following scenario

A politician asks his audience of 100 whether they will vote for him Of the 60 men present 33 say yes, of the 40 women present 18 say yes

Question 56

The null hypothesis is - - - - -

1 $P_{men} = P_{women} = 0$
2 $P_{men} = P_{women}$
3 $P_{men} \neq P_{women}$

Question 57

The observed sample statistic for the males is - - - - - while it is - - - - - for the females

1 0,60, 0,40
2 33, 18
3 0,55, 0,45

Question 58

A researcher plans to use the t-test to compare two independent samples of data of only 15 individuals each What minimum assumption needs to be met before she may proceed?

1 the sample standard deviations have to be equal
2 the data from both samples has to come from populations that are normally distributed
3 both of the above

Question 59

The difference score indicating differences between each pair of results in two samples ($d = X_2 - X_1$) is used in the calculation of the test statistic in the case of - - - - -

1 the t-test for independent samples
2 the t-test for dependent samples
3 the Pearson correlation coefficient

Question 60

The z_c statistic for comparing proportions should be used - - - - -

1 for comparing proportions in two samples from populations that are dependent
2 for comparing proportions in two samples from populations that are independent
3 irrespective of whether the data comes from dependent or independent populations

Question 61

Which of the following can take on a value of -0,5?

1 a probability
2 a level of significance
3 a correlation coefficient

Question 62

A contingency table is used to summarize the relationship between two variables measured on - - - - - scale

1 a nominal
2 an ordinal
3 an interval or ratio

Question 63

A negative correlation between variables X and Y implies that persons scoring low on X will generally score - - - - - on Y

1 low
2 either low or high
3 high

Question 64

Which of the following is suitable for representing the ages versus the heights of a group of children?

1 A scatter plot
2 A contingency table
3 A histogram

Question 65

What is the correlation coefficient between the following values of X and Y?

X	0	0	0
Y	-1	0	+1

1 -1
2 0
3 +1

Question 66

As the sample size (n) increases - - - - -

1 a smaller value of the Pearson's correlation coefficient r will reach significance
2 a larger value of the Pearson's correlation coefficient r is required before the result will be significant
3 there are no implications for the significance of the value of the Pearson's correlation coefficient r

Question 67

If there is no relationship at all between two variables, what would be the most likely value of Pearson's correlation coefficient r, out of the following?

1 -1,0
2 0,5
3 0,0

Question 68

Which of the following does **NOT** represent a valid value for a Pearson's r?

1 0,00
2 -1,00
3 10,00

Question 69

Which of the following Chi-square values is more likely to be significant?

1 - 20
2 +10
3 0

Question 70

Pearson's r represents - - - - -

1 a comparison between the observed frequencies and the expected frequencies for two categorical variables
2 a measurement of the extent to which two variables vary together
3 a measurement of the way in which two variables are distributed if the null hypothesis is true

END OF EXAM PAPER

List of formulae:

$$Z_{\bar{X}} = \frac{\left(\overline{X} - \mu_{\overline{X}}\right)}{\frac{\sigma}{\sqrt{n}}}$$

$$t_C = \frac{\left(\overline{X_1} - \overline{X_2}\right)}{\sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}}}$$

$$t_{\bar{d}} = \frac{\overline{X}_1 - \overline{X}_2}{\sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2} - 2r\, s_1\, s_2}}$$

$$z_C = \frac{\left(p_1 - p_2\right)}{\sqrt{\frac{p_1\left(1 - p_1\right)}{n_1} + \frac{p_2\left(1 - p_2\right)}{n_2}}}$$

$$r = \frac{\operatorname{cov}(X,Y)}{\sqrt{\operatorname{var}(X)\operatorname{var}(Y)}}$$

$$r = \frac{N\sum XY - \left(\sum X\right)\left(\sum Y\right)}{\sqrt{\left[N\sum X^2 - \left(\sum X\right)^2\right]\left[N\sum Y^2 - \left(\sum Y\right)^2\right]}}$$

$$t_r = \frac{r\sqrt{N-2}}{\sqrt{1-r^2}}$$

$$\chi_p^2 = \sum_{ij} \frac{\left(O_{ij} - E_{ij}\right)^2}{E_{ij}}$$

$$t_{\overline{X}} = \frac{\left(\overline{X} - \mu_{\overline{X}}\right)}{s_{\overline{X}}}$$

$$Z_p = \frac{\left(p - P_O\right)}{\sqrt{P\left(1 - P_O\right)/n}}$$

The standard normal distribution

z	Mean to z	Larger Portion	Smaller Portion	z	Mean to z	Larger Portion	Smaller Portion
00	0 0000	0 5000	0 5000	45	0 1736	0 6736	0 3264
01	0 0040	0 5040	0 4960	46	0 1772	0 6772	0 3228
02	0 0080	0 5080	0 4920	47	0 1808	0 6808	0 3192
03	0 0120	0 5120	0 4880	48	0 1844	0 6844	0 3156
04	0 0160	0 5160	0 4840	49	0 1879	0 6879	0 3121
05	0 0199	0 5199	0 4801	50	0 1915	0 6915	0 3085
06	0 0239	0 5239	0 4761	51	0 1950	0 6950	0 3050
07	0 0279	0 5279	0 4721	52	0 1985	0 6985	0 3015
08	0 0319	0 5319	0 4681	53	0 2019	0 7019	0 2981
09	0 0359	0 5359	0 4641	54	0 2054	0 7054	0 2946
10	0 0398	0 5398	0 4602	55	0 2088	0 7088	0 2912
11	0 0438	0 5438	0 4562	56	0 2123	0 7123	0 2877
12	0 0478	0 5478	0 4522	57	0 2157	0 7157	0 2843
13	0 0517	0 5517	0 4483	58	0 2190	0 7190	0 2810
14	0 0557	0 5557	0 4443	59	0 2224	0 7224	0 2776
15	0 0596	0 5596	0 4404	60	0 2257	0 7257	0 2743
16	0 0636	0 5636	0 4364	61	0 2291	0 7291	0 2709
17	0 0675	0 5675	0 4325	62	0 2324	0 7324	0 2676
18	0 0714	0 5714	0 4286	63	0 2357	0 7357	0 2643
19	0 0753	0 5753	0 4247	64	0 2389	0 7389	0 2611
20	0 0793	0 5793	0 4207	65	0 2422	0 7422	0 2578
21	0 0832	0 5832	0 4168	66	0 2454	0 7454	0 2546
22	0 0871	0 5871	0 4129	67	0 2486	0 7486	0 2514
23	0 0910	0 5910	0 4090	68	0 2517	0 7517	0 2483
24	0 0948	0 5948	0 4052	69	0 2549	0 7549	0 2451
25	0 0987	0 5987	0 4013	70	0 2580	0 7580	0 2420
26	0 1026	0 6026	0 3974	71	0 2611	0 7611	0 2389
27	0 1064	0 6064	0 3936	72	0 2642	0 7642	0 2358
28	0 1103	0 6103	0 3897	73	0 2673	0 7673	0 2327
29	0 1141	0 6141	0 3859	74	0 2704	0 7704	0 2296
30	0 1179	0 6179	0 3821	75	0 2734	0 7734	0 2266
31	0 1217	0 6217	0 3783	76	0 2764	0 7764	0 2236
32	0 1255	0 6255	0 3745	77	0 2794	0 7794	0 2206
33	0 1293	0 6293	0 3707	78	0 2823	0 7823	0 2177
34	0 1331	0 6331	0 3669	79	0 2852	0 7852	0 2148
35	0 1368	0 6368	0 3632	80	0 2881	0 7881	0 2119
36	0 1406	0 6406	0 3594	81	0 2910	0 7910	0 2090
37	0 1443	0 6443	0 3557	82	0 2939	0 7939	0 2061
38	0 1480	0 6480	0 3520	83	0 2967	0 7967	0 2033
39	0 1517	0 6517	0 3483	84	0 2995	0 7995	0 2005
40	0 1554	0 6554	0 3446	85	0 3023	0 8023	0 1977
41	0 1591	0 6591	0 3409	86	0 3051	0 8051	0 1949
42	0 1628	0 6628	0 3372	87	0 3078	0 8078	0 1922
43	0 1664	0 6664	0 3336	88	0 3106	0 8106	0 1894
44	0 1700	0 6700	0 3300	89	0 3133	0 8133	0 1867

The standard normal distribution

z	Mean to z	Larger Portion	Smaller Portion	z	Mean to z	Larger Portion	Smaller Portion
90	0 3159	0 8159	0 1841	1 35	0 4115	0 9115	0 0885
91	0 3186	0 8186	0 1814	1 36	0 4131	0 9131	0 0869
92	0 3212	0 8212	0 1788	1 37	0 4147	0 9147	0 0853
93	0 3238	0 8238	0 1762	1 38	0 4162	0 9162	0 0838
94	0 3264	0 8264	0 1736	1 39	0 4177	0 9177	0 0823
95	0 3289	0 8289	0 1711	1 40	0 4192	0 9192	0 0808
96	0 3315	0 8315	0 1685	1 41	0 4207	0 9207	0 0793
97	0 3340	0 8340	0 1660	1 42	0 4222	0 9222	0 0778
98	0 3365	0 8365	0 1635	1 43	0 4236	0 9236	0 0764
99	0 3389	0 8389	0 1611	1 44	0 4251	0 9251	0 0749
1 00	0 3413	0 8413	0 1587	1 45	0 4265	0 9265	0 0735
1 01	0 3438	0 8438	0 1562	1 46	0 4279	0 9279	0 0721
1 02	0 3461	0 8461	0 1539	1 47	0 4292	0 9292	0 0708
1 03	0 3485	0 8485	0 1515	1 48	0 4306	0 9306	0 0694
1 04	0 3508	0 8508	0 1492	1 49	0 4319	0 9319	0 0681
1 05	0 3531	0 8531	0 1469	1 50	0 4332	0 9332	0 0668
1 06	0 3554	0 8554	0 1446	1 51	0 4345	0 9345	0 0655
1 07	0 3577	0 8577	0 1423	1 52	0 4357	0 9357	0 0643
1 08	0 3599	0 8599	0 1401	1 53	0 4370	0 9370	0 0630
1 09	0 3621	0 8621	0 1379	1 54	0 4382	0 9382	0 0618
1 10	0 3643	0 8643	0 1357	1 55	0 4394	0 9394	0 0606
1 11	0 3665	0 8665	0 1335	1 56	0 4406	0 9406	0 0594
1 12	0 3686	0 8686	0 1314	1 57	0 4418	0 9418	0 0582
1 13	0 3708	0 8708	0 1292	1 58	0 4429	0 9429	0 0571
1 14	0 3729	0 8729	0 1271	1 59	0 4441	0 9441	0 0559
1 15	0 3749	0 8749	0 1251	1 60	0 4452	0 9452	0 0548
1 16	0 3770	0 8770	0 1230	1 61	0 4463	0 9463	0 0537
1 17	0 3790	0 8790	0 1210	1 62	0 4474	0 9474	0 0526
1 18	0 3810	0 8810	0 1190	1 63	0 4484	0 9484	0 0516
1 19	0 3830	0 8830	0 1170	1 64	0 4495	0 9495	0 0505
1 20	0 3849	0 8849	0 1151	1 65	0 4505	0 9505	0 0495
1 21	0 3869	0 8869	0 1131	1 66	0 4515	0 9515	0 0485
1 22	0 3888	0 8888	0 1112	1 67	0 4525	0 9525	0 0475
1 23	0 3907	0 8907	0 1093	1 68	0 4535	0 9535	0 0465
1 24	0 3925	0 8925	0 1075	1 69	0 4545	0 9545	0 0455
1 25	0 3944	0 8944	0 1056	1 70	0 4554	0 9554	0 0446
1 26	0 3962	0 8962	0 1038	1 71	0 4564	0 9564	0 0436
1 27	0 3980	0 8980	0 1020	1 72	0 4573	0 9573	0 0427
1 28	0 3997	0 8997	0 1003	1 73	0 4582	0 9582	0 0418
1 29	0 4015	0 9015	0 0985	1 74	0 4591	0 9591	0 0409
1 30	0 4032	0 9032	0 0968	1 75	0 4599	0 9599	0 0401
1 31	0 4049	0 9049	0 0951	1 76	0 4608	0 9608	0 0392
1 32	0 4066	0 9066	0 0934	1 77	0 4616	0 9616	0 0384
1 33	0 4082	0 9082	0 0918	1 78	0 4625	0 9625	0 0375
1 34	0 4099	0 9099	0 0901	1 79	0 4633	0 9633	0 0367

The standard normal distribution

z	Mean to z	Larger Portion	Smaller Portion	z	Mean to z	Larger Portion	Smaller Portion
1.80	0.4641	0.9641	0.0359	2.25	0.4878	0.9878	0.0122
1.81	0.4649	0.9649	0.0351	2.26	0.4881	0.9881	0.0119
1.82	0.4656	0.9656	0.0344	2.27	0.4884	0.9884	0.0116
1.83	0.4664	0.9664	0.0336	2.28	0.4887	0.9887	0.0113
1.84	0.4671	0.9671	0.0329	2.29	0.4890	0.9890	0.0110
1.85	0.4678	0.9678	0.0322	2.30	0.4893	0.9893	0.0107
1.86	0.4686	0.9686	0.0314	2.31	0.4896	0.9896	0.0104
1.87	0.4693	0.9693	0.0307	2.32	0.4898	0.9898	0.0102
1.88	0.4699	0.9699	0.0301	2.33	0.4901	0.9901	0.0099
1.89	0.4706	0.9706	0.0294	2.34	0.4904	0.9904	0.0096
1.90	0.4713	0.9713	0.0287	2.35	0.4906	0.9906	0.0094
1.91	0.4719	0.9719	0.0281	2.36	0.4909	0.9909	0.0091
1.92	0.4726	0.9726	0.0274	2.37	0.4911	0.9911	0.0089
1.93	0.4732	0.9732	0.0268	2.38	0.4913	0.9913	0.0087
1.94	0.4738	0.9738	0.0262	2.39	0.4916	0.9916	0.0084
1.95	0.4744	0.9744	0.0256	2.40	0.4918	0.9918	0.0082
1.96	0.4750	0.9750	0.0250	2.41	0.4920	0.9920	0.0080
1.97	0.4756	0.9756	0.0244	2.42	0.4922	0.9922	0.0078
1.98	0.4761	0.9761	0.0239	2.43	0.4925	0.9925	0.0075
1.99	0.4767	0.9767	0.0233	2.44	0.4927	0.9927	0.0073
2.00	0.4772	0.9772	0.0228	2.45	0.4929	0.9929	0.0071
2.01	0.4778	0.9778	0.0222	2.46	0.4931	0.9931	0.0069
2.02	0.4783	0.9783	0.0217	2.47	0.4932	0.9932	0.0068
2.03	0.4788	0.9788	0.0212	2.48	0.4934	0.9934	0.0066
2.04	0.4793	0.9793	0.0207	2.49	0.4936	0.9936	0.0064
2.05	0.4798	0.9798	0.0202	2.50	0.4938	0.9938	0.0062
2.06	0.4803	0.9803	0.0197	2.51	0.4940	0.9940	0.0060
2.07	0.4808	0.9808	0.0192	2.52	0.4941	0.9941	0.0059
2.08	0.4812	0.9812	0.0188	2.53	0.4943	0.9943	0.0057
2.09	0.4817	0.9817	0.0183	2.54	0.4945	0.9945	0.0055
2.10	0.4821	0.9821	0.0179	2.55	0.4946	0.9946	0.0054
2.11	0.4826	0.9826	0.0174	2.56	0.4948	0.9948	0.0052
2.12	0.4830	0.9830	0.0170	2.57	0.4949	0.9949	0.0051
2.13	0.4834	0.9834	0.0166	2.58	0.4951	0.9951	0.0049
2.14	0.4838	0.9838	0.0162	2.59	0.4952	0.9952	0.0048
2.15	0.4842	0.9842	0.0158	2.60	0.4953	0.9953	0.0047
2.16	0.4846	0.9846	0.0154	2.61	0.4955	0.9955	0.0045
2.17	0.4850	0.9850	0.0150	2.62	0.4956	0.9956	0.0044
2.18	0.4854	0.9854	0.0146	2.63	0.4957	0.9957	0.0043
2.19	0.4857	0.9857	0.0143	2.64	0.4959	0.9959	0.0041
2.20	0.4861	0.9861	0.0139	2.65	0.4960	0.9960	0.0040
2.21	0.4864	0.9864	0.0136	2.66	0.4961	0.9961	0.0039
2.22	0.4868	0.9868	0.0132	2.67	0.4962	0.9962	0.0038
2.23	0.4871	0.9871	0.0129	2.68	0.4963	0.9963	0.0037
2.24	0.4875	0.9875	0.0125	2.69	0.4964	0.9964	0.0036

The standard normal distribution

z	Mean to z	Larger Portion	Smaller Portion	z	Mean to z	Larger Portion	Smaller Portion
2.70	0.4965	0.9965	0.0035	2.90	0.4981	0.9981	0.0019
2.71	0.4966	0.9966	0.0034	2.91	0.4982	0.9982	0.0018
2.72	0.4967	0.9967	0.0033	2.92	0.4982	0.9982	0.0018
2.73	0.4968	0.9968	0.0032	2.93	0.4983	0.9983	0.0017
2.74	0.4969	0.9969	0.0031	2.94	0.4984	0.9984	0.0016
2.75	0.4970	0.9970	0.0030	2.95	0.4984	0.9984	0.0016
2.76	0.4971	0.9971	0.0029	2.96	0.4985	0.9985	0.0015
2.77	0.4972	0.9972	0.0028	2.97	0.4985	0.9985	0.0015
2.78	0.4973	0.9973	0.0027	2.98	0.4986	0.9986	0.0014
2.79	0.4974	0.9974	0.0026	2.99	0.4986	0.9986	0.0014
2.80	0.4974	0.9974	0.0026	3.00	0.4987	0.9987	0.0013
2.81	0.4975	0.9975	0.0025				
2.82	0.4976	0.9976	0.0024	3.25	0.4994	0.9994	0.0006
2.83	0.4977	0.9977	0.0023				
2.84	0.4977	0.9977	0.0023	3.50	0.4998	0.9998	0.0002
2.85	0.4978	0.9978	0.0022				
2.86	0.4979	0.9979	0.0021	3.75	0.4999	0.9999	0.0001
2.87	0.4979	0.9979	0.0021				
2.88	0.4980	0.9980	0.0020	4.00	0.5000	1.0000	0.0000
2.89	0.4981	0.9981	0.0019				

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EXAMINATION MARK READING SHEET EKSAMEN-MERKLEESBLAD

PART 1 (GENERAL/ALGEMEEN) DEEL 1

STUDY UNIT e g PSY100-X
STUDIE-EENHEID bv PSY100-X

1

PAPER NUMBER
VRAESTELNOMMER

2

INITIALS AND SURNAME
VOORLETTERS EN VAN

3

DATE OF EXAMINATION
DATUM VAN EKSAMEN

4

EXAMINATION CENTRE (E G PRETORIA)
EKSAMENSENTRUM (BV PRETORIA)

5

STUDENT NUMBER
STUDENTENOMMER

6

7

UNIQUE PAPER NO
UNIEKE VRAESTEL NR

8

9

For use by examination invigilator

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IMPORTANT

1 USE ONLY AN HB PENCIL TO COMPLETE THIS SHEET
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8 DO NOT FOLD

BELANGRIK

1 GEBRUIK SLEGS N HB POTLOOD OM HIERDIE BLAD TE VOLTOOI
2 MERK AS VOLG ●
3 KONTROLEER DAT U VOORLETTERS EN VAN REG INGEVUL IS
4 VUL U STUDENTENOMMER VAN LINKS NA REGS IN
5 KONTROLEER DAT U DIE KORREKTE STUDENTENOMMER VERSTREK HET
6 KONTROLEER DAT DIE UNIEKE NOMMER REG INGEVUL IS
7 MAAK SEKER DAT NET EEN ALTERNATIEF PER VRAAG GEMERK IS
8 MOENIE VOU NIE

PART 2 (ANSWERS/ANTWOORDE) DEEL 2

10

1	c1 c2 c3 c4 c5	36	c1 c2 c3 c4 c5	71	c1 c2 c3 c4 c5	106	c1 c2 c3 c4 c5
2	c1 c2 c3 c4 c5	37	c1 c2 c3 c4 c5	72	c1 c2 c3 c4 c5	107	c1 c2 c3 c4 c5
3	c1 c2 c3 c4 c5	38	c1 c2 c3 c4 c5	73	c1 c2 c3 c4 c5	108	c1 c2 c3 c4 c5
4	c1 c2 c3 c4 c5	39	c1 c2 c3 c4 c5	74	c1 c2 c3 c4 c5	109	c1 c2 c3 c4 c5
5	c1 c2 c3 c4 c5	40	c1 c2 c3 c4 c5	75	c1 c2 c3 c4 c5	110	c1 c2 c3 c4 c5
6	c1 c2 c3 c4 c5	41	c1 c2 c3 c4 c5	76	c1 c2 c3 c4 c5	111	c1 c2 c3 c4 c5
7	c1 c2 c3 c4 c5	42	c1 c2 c3 c4 c5	77	c1 c2 c3 c4 c5	112	c1 c2 c3 c4 c5
8	c1 c2 c3 c4 c5	43	c1 c2 c3 c4 c5	78	c1 c2 c3 c4 c5	113	c1 c2 c3 c4 c5
9	c1 c2 c3 c4 c5	44	c1 c2 c3 c4 c5	79	c1 c2 c3 c4 c5	114	c1 c2 c3 c4 c5
10	c1 c2 c3 c4 c5	45	c1 c2 c3 c4 c5	80	c1 c2 c3 c4 c5	115	c1 c2 c3 c4 c5
11	c1 c2 c3 c4 c5	46	c1 c2 c3 c4 c5	81	c1 c2 c3 c4 c5	116	c1 c2 c3 c4 c5
12	c1 c2 c3 c4 c5	47	c1 c2 c3 c4 c5	82	c1 c2 c3 c4 c5	117	c1 c2 c3 c4 c5
13	c1 c2 c3 c4 c5	48	c1 c2 c3 c4 c5	83	c1 c2 c3 c4 c5	118	c1 c2 c3 c4 c5
14	c1 c2 c3 c4 c5	49	c1 c2 c3 c4 c5	84	c1 c2 c3 c4 c5	119	c1 c2 c3 c4 c5
15	c1 c2 c3 c4 c5	50	c1 c2 c3 c4 c5	85	c1 c2 c3 c4 c5	120	c1 c2 c3 c4 c5
16	c1 c2 c3 c4 c5	51	c1 c2 c3 c4 c5	86	c1 c2 c3 c4 c5	121	c1 c2 c3 c4 c5
17	c1 c2 c3 c4 c5	52	c1 c2 c3 c4 c5	87	c1 c2 c3 c4 c5	122	c1 c2 c3 c4 c5
18	c1 c2 c3 c4 c5	53	c1 c2 c3 c4 c5	88	c1 c2 c3 c4 c5	123	c1 c2 c3 c4 c5
19	c1 c2 c3 c4 c5	54	c1 c2 c3 c4 c5	89	c1 c2 c3 c4 c5	124	c1 c2 c3 c4 c5
20	c1 c2 c3 c4 c5	55	c1 c2 c3 c4 c5	90	c1 c2 c3 c4 c5	125	c1 c2 c3 c4 c5
21	c1 c2 c3 c4 c5	56	c1 c2 c3 c4 c5	91	c1 c2 c3 c4 c5	126	c1 c2 c3 c4 c5
22	c1 c2 c3 c4 c5	57	c1 c2 c3 c4 c5	92	c1 c2 c3 c4 c5	127	c1 c2 c3 c4 c5
23	c1 c2 c3 c4 c5	58	c1 c2 c3 c4 c5	93	c1 c2 c3 c4 c5	128	c1 c2 c3 c4 c5
24	c1 c2 c3 c4 c5	59	c1 c2 c3 c4 c5	94	c1 c2 c3 c4 c5	129	c1 c2 c3 c4 c5
25	c1 c2 c3 c4 c5	60	c1 c2 c3 c4 c5	95	c1 c2 c3 c4 c5	130	c1 c2 c3 c4 c5
26	c1 c2 c3 c4 c5	61	c1 c2 c3 c4 c5	96	c1 c2 c3 c4 c5	131	c1 c2 c3 c4 c5
27	c1 c2 c3 c4 c5	62	c1 c2 c3 c4 c5	97	c1 c2 c3 c4 c5	132	c1 c2 c3 c4 c5
28	c1 c2 c3 c4 c5	63	c1 c2 c3 c4 c5	98	c1 c2 c3 c4 c5	133	c1 c2 c3 c4 c5
29	c1 c2 c3 c4 c5	64	c1 c2 c3 c4 c5	99	c1 c2 c3 c4 c5	134	c1 c2 c3 c4 c5
30	c1 c2 c3 c4 c5	65	c1 c2 c3 c4 c5	100	c1 c2 c3 c4 c5	135	c1 c2 c3 c4 c5
31	c1 c2 c3 c4 c5	66	c1 c2 c3 c4 c5	101	c1 c2 c3 c4 c5	136	c1 c2 c3 c4 c5
32	c1 c2 c3 c4 c5	67	c1 c2 c3 c4 c5	102	c1 c2 c3 c4 c5	137	c1 c2 c3 c4 c5
33	c1 c2 c3 c4 c5	68	c1 c2 c3 c4 c5	103	c1 c2 c3 c4 c5	138	c1 c2 c3 c4 c5
34	c1 c2 c3 c4 c5	69	c1 c2 c3 c4 c5	104	c1 c2 c3 c4 c5	139	c1 c2 c3 c4 c5
35	c1 c2 c3 c4 c5	70	c1 c2 c3 c4 c5	105	c1 c2 c3 c4 c5	140	c1 c2 c3 c4 c5