

Ollscoil na hÉireann, Gaillimh
NATIONAL UNIVERSITY OF IRELAND, GALWAY

First Arts, Summer Examinations, 1997-98

Psychology, Paper 1

PS101 Physiological Psychology (Unit value 1.5)

PS104 Experimental Psychology and Laboratory Studies of Behaviour (Unit value 1.5)

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Time allowed: Three hours

Answer two questions from Section A and two questions from Section B. Use a separate answer book for each section.

Section A

Answer all fifteen parts of question 1 and one other question from this Section.

1. (a) Name the divisions of the peripheral nervous system.
- (b) In relation to the neuron
 - (i) State the 'all-or-none' law, and
 - (ii) Describe the function of the myelin sheath.
- (c) Distinguish agonists from antagonists.
- (d) Name the four lobes of the cerebral cortex.
- (e) Specify two areas of the cerebrum concerned with language.
- (f) Name two pieces of equipment you might find in a sleep laboratory and indicate the function of each one.
- (g) List five neurotransmitters.
- (h) What are the functions of the (i) Medulla, and (ii) Hypothalamus.
- (i) Describe three characteristics of REM sleep.
- (j) (i) Name three classes of psychoactive drugs.
(ii) Give an example of one drug in each class.
- (k) What is a split-brain operation?
- (l) What are the main types of colour blindness?

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- (m) What is visual accommodation?
 - (n) What is visual agnosia?
 - (n) (i) What is a neuromodulator?
 - (ii) Give an example.
2. Write an essay on sleep, making reference to various sleep disorders where appropriate.
 3. Write an account of how communication occurs both within and between neurons.

Section B

Answer all fifteen parts of question 1 and one other question from this Section.

4. (a) What is a stratified sample?
- (b) Describe three measures of scatter/variability.
- (c) In a history examination, would a student prefer a z score of + 0.54 or a percentile of 65? Why?
- (d) Define three measures of central tendency.
- (e) Describe three forms of test reliability.
- (f) If a mean reading score of a normally distributed sample is 70 and the standard deviation is 6,
 - (i) what percentage of people in the sample has reading scores between 58 and 82?
 - (ii) what percentage of the sample has reading scores above 76?
- (g) Name the four types of data measurement.
- (h) Calculate the semi-interquartile range of the following set of data:

23, 14, 46, 54, 9, 32, 75, 29.
- (i) In what circumstances would you justify the use of a median instead of a mean?
- (j) Calculate the standard deviation of the following set of anxiety scores:

4, 3, 5, 6, 2.
- (k) What is positive skew?
- (l) The children with the seven highest scores on a mathematics test had the following IQs respectively: 140, 127, 133, 130, 127, 124, 116.

Is there a significant correlation between IQ and mathematical ability?
- (m) Distinguish between causation and correlation.
- (n) Describe three ways of measuring test validity.
- (o) What is a placebo?

5. Randomly chosen children had the following scores on a spelling test:

Boys: 4 3 5 2 5 3
(N=6)

Girls: 5 7 6 4 8 7 6
(N=7)

- (i) Is there a significant sex difference in spelling ability?
- (ii) Justify your choice of test.

6. In the table below, the stress levels and average number of hours sleep per night for a sample of 120 adults is reported.

Average no. of hours sleep	Level of Stress				
	Very Stressed	Stressed	Average	Relaxed	Very Relaxed
Less than 5 hours	4	8	7	5	8
5 - 6 hours	3	6	8	8	13
7 - 8 hours	2	4	10	9	5
More than 8 hours	1	2	5	8	4

- (a) Do the data indicate a significant relationship between stress and number of hours of sleep?
- (b) What are the assumptions of the test you used?