



Fortify Sample Exam A

PSYCHOLOGY

Full Solutions

Section A

1	B	16	C	31	D	46	B
2	D	17	A	32	C	47	D
3	D	18	B	33	A	48	A
4	C	19	A	34	B	49	C
5	B	20	B	35	B	50	B
6	A	21	C	36	D		
7	B	22	D	37	A		
8	C	23	C	38	C		
9	D	24	D	39	B		
10	D	25	A	40	B		
11	D	26	A	41	B		
12	A	27	C	42	D		
13	C	28	B	43	C		
14	C	29	C	44	B		
15	B	30	B	45	D		

Section B

Question 1

This question assessed students' knowledge of the lock-and-key process of neurotransmitters in direct relation to communication *between* neurons.

One mark was awarded for demonstrating each of the following:

- The pre-synaptic neuron releases GABA into the synaptic cleft.
- GABA diffuses across the synapse and binds with a complementary receptor on the post-synaptic neurons dendrites. The GABA neurotransmitters acts as a key. The complementary receptor on the post-synaptic neuron acts as a lock.
- GABA is an excitatory neuron; GABA increases the likelihood of the post-synaptic neuron firing thus making it more likely to create an action potential.

Note: It was not necessary to refer to the specific processes involved in an action potential. Full marks were awarded when the student successfully related to the lock-and-key process of GABA and its receptor.

An explanation of this process and a labelled diagram was also required to receive full marks.

Question 2a.

The question asked students to use classical conditioning terminology to explain how Matthew came to flinch when Peter said the word 'book.' Students had to discuss this scenario using terminology in relation to: before conditioning, during conditioning and after conditioning.

The following must be referred to, to obtain full marks:

- Neutral stimulus: word 'book'
- Unconditioned stimulus: shooting the water gun
- Unconditioned response: flinching due to water gun
- Conditioned stimulus: word 'book'
- Conditioned response: flinching due to work book
- Repeated pairings between neutral stimulus and unconditioned stimulus during conditioning
- Noted what the response was due to (eg: flinching due to the water gun)

A high-scoring response could be:

Before conditioning, the neutral stimulus was the word 'book' which produced no response. The unconditioned stimulus (shooting the water gun) also produced an unconditioned response of flinching due to the water gun. During conditioning, there were repeated pairings of the neutral stimulus (word 'book') and the unconditioned stimulus (shooting the water gun) which produced an unconditioned response of flinching due to water gun. After conditioning, the conditioned stimulus (word 'book') produced an unconditioned response of flinching to the word 'book.'

Question 2b.

Students must correctly identify and define the classically conditioning principle as extinction to obtain full marks.

A high-scoring response could be:

The process identified is extinction. This is when the unconditioned stimulus (shooting the water gun) is no longer paired with the conditioned stimulus (word 'book'). As a result, the conditioned stimulus (word 'book') becomes meaningless so the conditioned response (flinching due to word 'book') stops.

Question 3a.

To obtain full marks students must:

- Correctly identify the independent variable - flight route of pilots (domestic or international pilots).
- Correctly identify the dependent variable cognitive errors and poor decision- making, as measured by average number of errors made on a flight simulator.

Question 3b.

To obtain full marks students must:

- Correctly identify the experimental research design as an independent groups design.
- Correctly state one disadvantage of an independent groups design. This may include one of the following:
 - Doesn't eliminate individual participant differences
 - Needs a larger number of participants to ensure that the spread of participant variables in the sample will match.

Question 3c.

To obtain full marks students must:

- Correctly identify group A as the control group.
- Explain the purpose of the control group to act as a baseline of comparison against the domestic pilots. This allows the effect of travelling across time zones to be examined.

Note: 'controlled' was not accepted.

Question 3d.

To obtain full marks students must:

- Correctly describe the results from the graph in terms of cognitive and decision- making errors must refer to each group.
- Draw a conclusion from the data.

A high-scoring response could be:

The results of Dr Drizzy's research suggested that pilots who flew internationally had, on average, more cognitive and decision-making errors. Pilots who flew internationally, and thus experienced jet lag as a result, made 12 cognitive errors and 14 decision making errors. This is significantly higher than the 4 cognitive errors and 5 decision making errors of the pilot group who flew domestically. These results illustrate that jet lag can have a negative effect on decision making and cognitive errors.

Question 3e.

To obtain full marks students must:

- Correctly identify bright light therapy as the most effective treatment for jet lag.
- Provide a statement of what the therapy involves.
- Provide a statement of the relevance of bright light therapy on managing jetlag.

A high-scoring response could be:

It is likely that Dr Drizzy would suggest bright light therapy as an intervention for jet lag. It involves exposure to a light source for a small period each day to shift the sleep-wake cycle. The light exposure signals the suprachiasmatic nucleus in the brain to cease production of melatonin, therefore adjusting an internal body clock. Pilots could use bright light therapy in an attempt to match their sleep-wake cycle to the new time zone or to return to the circadian rhythm once returned.

Question 4a.

To obtain full marks students must:

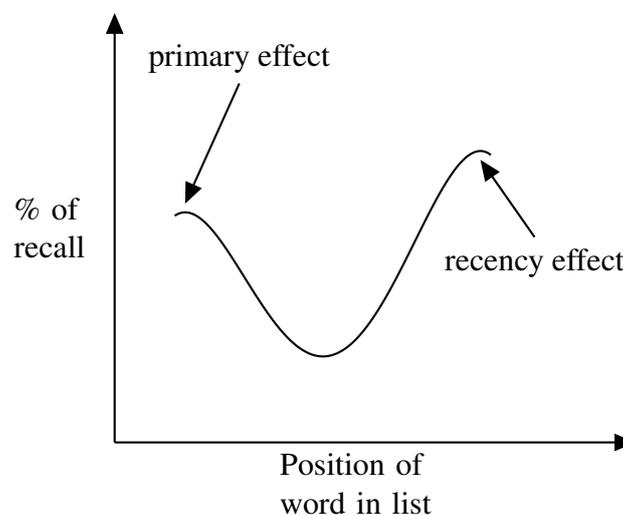
- Correctly identify the dependent variable as memory recall.
- Correctly operationalising the dependent variable as the number of words recalled in order from the list of fifteen words.

Question 4b.

To obtain full marks students must:

- Draw a serial position curve.
- Label the primacy and recency effect.
- Correctly label the axes.

A high-scoring response could be:



Question 4c.

To obtain full marks students must:

- Define elaborative and maintenance rehearsal.
- Explain how elaborative rehearsal creates meaningful links with information in long-term memory and how this effects recall.
- Explain how maintenance rehearsal involves repetition of information in short-term memory and how the list of 15 words exceeds short-term memory capacity.

A high-scoring response could be:

Elaborative rehearsal increases recall as it involves creating meaningful links with information that already exists in long term memory. The narrative process involved in this scenario involves participants actively engaging with the words, making the information more likely to move to, and be stored in long term memory. This storage of information increases recall. On the other hand, elaborative rehearsal involves repetition of information to retain it in short-term memory. As the list of 15 words exceeds the capacity of 5-9 pieces of information, many of the words would have been displaced from short-term memory. As a result, maintenance rehearsal leads to poorer recall.

Question 4d.

To obtain full marks students must:

- Correctly identify the sampling technique as convenience sampling.
- Correctly identify one possible limitation of convenience sampling. This could include: ability to generalise the results to the wider population, the sample may not be representative of the population or the sample may be biased.

Note: 'convenient' sampling was not accepted.

Question 4e.

To obtain full marks students must:

- Provide an acceptable alternative sampling procedure. This may have included random sampling, random-stratified or stratified sampling.
- Provide an acceptable justification for how this sampling procedure would improve the validity of the conclusion. This may include:
 - Providing a sample that is more representative of the population.
 - Enabling the results to be generalised to the population.
 - Improve the internal validity of the study by reducing the likelihood of participant variables that influence the results.
 - Improve the external validity of the results by making them more generalizable to the population.

Question 4f.

To obtain full marks students must:

- Correctly identify one ethical guideline present in the study. This may have been voluntary participation or informed consent.
- Correctly define the chosen ethical guideline and explain how it related to the scenario.

Question 5a.

To obtain full marks students must:

- Correctly identify Marissa's fear of spoons as **persistent** as it has occurred over a long period of time.
- Correctly identified that Marissa reaction to spoons is **intense**. She experiences a heightened physiological response to spoons.
- Correctly identified that Marissa's fear of spoons is **irrational**. Her fear does not make sense.

Question 5b.

Negative reinforcement.

Question 5c.

To obtain full marks students must demonstrate knowledge of the following components of systematic desensitisation:

- Learning a relaxing technique.
- Development of a fear hierarchy.
- Gradual exposure to increasingly fearful stimuli paired with relaxation technique involves classical conditioning.
- Continuation of process until the stimuli highest on the fear hierarchy can be exposed without producing the fear response.

Question 6a.

To obtain full marks students must:

- Correctly identify that Farah is experiencing an increase in non-REM sleep.
- Correctly identifying that the theory responsible for this explanation is the restorative theory of sleep.
- Correctly explain how an increase in non-REM sleep restores bodily resources.

Example of a response that would obtain full marks:

Farah is current spending more time in non-REM stages 3 and 4. Training for the marathon would have put physical strain on Farah's body and bodily resources. Therefore, according to restoration theories, Farah will spend more time in non-REM stages 3 and 4 to replenish the body and muscles. This is because restoration theorists propose that non-REM sleep is responsible for replenishing depleted energy resources.

Question 6b.

To obtain full marks students must:

- Identify the brain wave activities associated with non-REM sleep as theta and delta waves.
- Explain that theta and delta waves have high amplitude, low frequency.

Question 7a.

To obtain full marks students must:

- Correctly identify that we cannot infer that Priscilla has a mental illness.
- Correctly explain that two weeks is too early to make a diagnosis.
- Relate Priscilla's grief with normal grief.

Question 7b.

To obtain full marks students must:

- Correctly identify a biological risk factor which may have included: genetic vulnerability, poor response to medication due to genetic factors, poor sleep or substance use.
- Correctly identify a psychological risk factor which may have included: rumination, impaired reasoning and memory, stress or poor self-efficacy.
- Correctly identify a social risk factor which may have included: disorganised attachment, loss of a significant relationship or stigma.

Note: the question did not explicitly require these factors to be present in the scenario.

Question 7c.

To obtain full marks students must:

- Correctly identify that Priscilla may receive no treatment if she is in the placebo group.
- Correctly state that withdrawal of medication in combination with being in the placebo group may worsen Priscilla's anxiety.

Question 8

To obtain full marks students must:

- Explanation of how the pathway of memory for the new curling technique is strengthened through biological characteristics, including increases in neurotransmitters, vesicles and dendrites.
- Explanation of how the pathway of memory for the old curling technique is weakened through biological characteristics, including decreases in neurotransmitters, vesicles and dendrites.

Question 9

To obtain full marks students must:

- explain stress as a psychobiological process (1 mark)
- explain sources of stress present in the scenario - (distress) including acculturative stress (moving to Australia from Italy, experiencing discrimination, unable to speak English), life events (Giuseppe's major injury) and major stressor (financial stress). (2 marks)
- state that the Selye's General Adaptation Syndrome is a biological model and Lazarus and Folkman's Transactional Model of Stress and Coping is a psychological model. (2 marks)
- explain models of stress as a biological process with reference to Selye's General Adaptation Syndrome. Must relate to stages involved (alarm reaction, stages of resistance, stages of exhaustion). Must reference 'fight, flight, freeze' response, physiological responses and stress hormones (cortisol). (2 marks)
- explain models of stress as a psychological process with reference to Lazarus and Folkman's Transactional Model of Stress and Coping (primary and secondary appraisal). (2 marks)
- give an explanation of different coping mechanisms, such as exercise, approach and avoidance strategies. (1 mark)