

Please write clearly in block capitals.

Centre number

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Candidate number

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Surname

StemUp Model Solution

Forename(s)

Candidate signature

I declare this is my own work.

AS PSYCHOLOGY

Paper 2 Psychology in context

Time allowed: 1 hour 30 minutes

Materials

For this paper you may use:

- a calculator.

Instructions

- Use black ink or black ball-point pen.
- Fill in the boxes at the top of this page.
- Answer **all** questions.
- You must answer the questions in the spaces provided. Do **not** write outside the box around each page or on blank pages.
- If you need extra space for your answer(s), use the lined pages at the end of this book. Write the question number against your answer(s).
- Do all rough work in this book. Cross through any work you do not want to be marked.

Information

- The marks for questions are shown in brackets.
- The maximum mark for this paper is 72.
- You will be assessed on your ability to:
 - use good English
 - organise information clearly
 - use specialist vocabulary where appropriate.

For Examiner's Use	
Section	Mark
A	
B	
C	
TOTAL	



Section A**Approaches in Psychology**

Answer **all** questions in this section.

0	1
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Explain the process of synaptic transmission.

[4 marks]

Synaptic transmission is the process by which a nerve impulse passes from one neuron to the next across the synapse. When an electrical impulse (action potential) travels down the axon and reaches the presynaptic terminal, it causes synaptic vesicles to fuse with the presynaptic membrane and release neurotransmitters, such as serotonin or dopamine, into the synaptic cleft.

The neurotransmitters diffuse across the synaptic cleft and bind to specific receptor sites on the postsynaptic membrane, so transmission is

Extra space *one-directional, from the presynaptic to the postsynaptic neuron. Neurotransmitters can be excitatory (e.g. adrenaline), making the postsynaptic neuron more likely to fire, or inhibitory (e.g. GABA), making it less likely to fire. Summation of these inputs determines whether the postsynaptic neuron fires.*



Ian is telling his friend that he was nearly involved in a car accident. "I was driving home when a branch fell in the road. My heart started to beat very fast and my mouth went dry. I slammed on the brakes and avoided hitting the branch. As I drove away, it took some time for my heart rate to come back down to normal."

0	2
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Outline the role of adrenalin in the fight or flight response. Refer to Ian's experiences in your answer.

[6 marks]

When Ian saw the branch fall in the road, his amygdala detected a threat and signalled the hypothalamus, which activated the sympathetic branch of the autonomic nervous system. This triggered the adrenal medulla to release adrenalin into the bloodstream, starting the fight or flight response.

Adrenalin binds to receptors in target organs and has direct effects: it increases heart rate and constricts blood vessels, raising blood pressure and the rate of blood flow. This is why Ian's "heart started to beat very fast". This pumps more oxygenated blood and glucose to Ian's skeletal muscles and brain, preparing his body for rapid physical action and quick decision making.

Adrenalin also inhibits non-essential functions such as digestion and saliva production, which explains why Ian's "mouth went dry". His muscles tensed and his reactions sharpened, allowing him to respond rapidly and slam on the brakes to avoid hitting the branch.

Once the threat had passed, adrenalin levels gradually fell and the parasympathetic nervous system took over, acting as a brake to return the body to its resting state (rest and digest). Because adrenalin takes time to be broken down in the blood, "it took some time" for Ian's heart rate to come back down to normal.

Turn over ►



0 3

Briefly outline how Pavlov investigated classical conditioning.

[3 marks]

Pavlov studied the salivation reflex in dogs. Before conditioning, food (an unconditioned stimulus, UCS) naturally produced salivation (an unconditioned response, UCR), while a bell was a neutral stimulus (NS) that produced no salivation. During conditioning, Pavlov repeatedly rang the bell at the same time as presenting the food, so the dogs learned to associate the two (temporal contiguity). After conditioning, the bell

Extra space *alone became a conditioned stimulus (CS) that produced salivation, now a conditioned response (CR). He measured the drops of saliva collected through a tube in the dog's cheek.*

0 4

Grace's room is always messy. Her older sister, Lily, keeps her room very tidy. The next time Lily tidies her room, the girls' mother gives Lily five pounds.

Using your knowledge of social learning theory, explain why Grace might be more likely to tidy her room in the future.

[5 marks]

Grace may learn tidiness through observational learning by watching her older sister Lily tidying her room. Grace may identify with Lily as a role model, as she is older and similar to her, so she is more likely to imitate Lily's behaviour.

When Grace sees her mother give Lily five pounds for tidying, Lily's behaviour is being vicariously reinforced. Grace expects the same reward, so is more likely to tidy her own room.

Through mediational processes, Grace attends to Lily tidying, retains it, can easily reproduce it and is motivated by the expected five pounds.

Over time Grace may internalise tidiness and value it for its own sake.



0 5

Outline what is meant by cognitive neuroscience.

[4 marks]

Cognitive neuroscience is the scientific study of how biological structures and processes in the brain, such as specific brain areas, neural mechanisms and neurochemistry, are responsible for mental (cognitive) processes such as memory, perception, language and decision making. Brain scans such as fMRI and PET show which brain areas are active while neurotypical people complete cognitive tasks. For example, Tulving et al. (1994) used PET scans to show that episodic memories are linked to activity in the prefrontal cortex.

0 6

Briefly explain **one** strength of the cognitive approach in psychology.

[2 marks]

A strength is that the cognitive approach uses scientific, objective methods such as lab experiments, where variables are tightly controlled, so cause and effect can be established and findings replicated. This gives the approach scientific rigour and credibility.

24

Turn over for Section B

Turn over ►



Section B

Psychopathology

Answer **all** questions in this section.

Rita is talking to her therapist about her phobia of dogs.

"I am terrified of dogs. When I see one, I cannot move until it has walked away. I cannot go to my friend's house any longer because she has two dogs and I shake when they come near me. I try not to leave the house in case I see one on the street."

0 7 . 1

Give **two** behavioural characteristics of phobias that would be seen in someone who has a phobia of dogs. Refer to Rita in your answer.

[4 marks]

Avoidance: a person with a phobia makes great efforts to avoid the phobic stimulus. Rita no longer goes to her friend's house because her friend has two dogs, and she tries not to leave the house in case she sees a dog on the street.

Freeze response: a person may become unable to move when faced with the phobic stimulus. When Rita sees a dog, she cannot move until it has walked away. Panic is also shown, as Rita shakes when her friend's dogs come near her.



0 7 . 2

Explain how the therapist could use systematic desensitisation to treat Rita's phobia of dogs.

[4 marks]

The therapist would first teach Rita relaxation techniques, such as deep breathing or progressive muscle relaxation, as relaxation and fear are incompatible responses (reciprocal inhibition). Together they would build an anxiety hierarchy of dog situations, from least to most feared, for example hearing a dog bark, looking at a picture of a dog, seeing a dog through a window, being in the same room as her friend's dog and finally stroking it.

Rita would then be gradually exposed to each level while using her relaxation techniques, only moving up the hierarchy when she feels calm at the current level. Through counterconditioning, Rita learns a new association between dogs and relaxation, so her fear is extinguished and she can visit her friend's house again.

0 8

Describe **one** cognitive explanation of depression.

[4 marks]

Beck's (1967) negative triad suggests that depression is caused by faulty information processing. Depressed people attend to the negatives in situations and ignore the positives, e.g. overgeneralising. These biases stem from negative self-schemas formed in childhood through criticism or rejection. This leads to the negative triad: a negative view of the self ("I am worthless"), of the world ("everyone is against me") and of the future ("nothing will ever get better"). These thoughts cause the hopelessness and low self-esteem of depression.

Turn over ►



0 9

Outline and evaluate statistical infrequency **and** deviation from ideal mental health as definitions of abnormality.

[12 marks]

You may use this space to plan your answer.

Statistical infrequency defines abnormality as any behaviour that is statistically rare. Characteristics such as IQ are normally distributed, so most people score close to the mean and few score at the extremes. A behaviour more than two standard deviations from the mean is classed as abnormal. For example, an IQ below 70 (about 2% of people) is a criterion for intellectual disability disorder. This definition focuses on the quantity of a behaviour rather than its quality.

Deviation from ideal mental health (Jahoda, 1958) defines abnormality as the absence of signs of good mental health. Jahoda's criteria are: a positive attitude towards the self with high self-esteem, self-actualisation, resistance to stress, autonomy (being independent and self-reliant), an accurate perception of reality, and environmental mastery (coping at work, in relationships and with new situations). The more criteria a person fails to meet, the more abnormal they are judged to be.

One strength of statistical infrequency is its real-life usefulness: assessment of intellectual disability disorder uses IQ scores, and objective measures such as the Beck Depression Inventory compare a person's score with population norms, making diagnosis objective. However, it



cannot distinguish desirable from undesirable rarity. Someone with an IQ above 130 is just as rare as someone with an IQ below 70, yet high IQ is desirable and would not need treatment, so rarity alone is not a sufficient basis for judging abnormality.

A further weakness is that some disorders are not statistically rare. Depression affects around a quarter of people at some point in their lives, so the definition would fail to identify it as abnormal. There is also the problem of who decides the cut-off point: two standard deviations is arbitrary, and labelling someone as abnormal simply for being unusual could have a negative effect on them if they are happy and functioning well.

A strength of deviation from ideal mental health is that it is a positive and holistic approach. It focuses on what is desirable rather than on what is wrong, and considers many aspects of a person's life, so it identifies the areas a person needs to work on, which is useful for therapy and personal growth.

However, the criteria are unrealistically demanding. Very few people meet all of Jahoda's criteria at the same time, for example few achieve self-actualisation, so by this definition almost everyone would be judged abnormal at some point. This makes it of limited use for diagnosis.

The definition is also culturally biased. Criteria such as autonomy and self-actualisation reflect Western individualist values; in collectivist cultures, such as China, interdependence and meeting the needs of the family are valued more than independence. People from these cultures could be wrongly judged as abnormal, so the definition cannot be applied universally.

Overall, neither definition is adequate alone. Statistical infrequency is

Turn over ►



objective but ignores the desirability of behaviour, whereas ideal mental health considers quality but is subjective and culture bound, so clinicians combine them with other definitions, such as failure to function

Extra space *adequately and deviation from social norms, when diagnosing.*



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Section C

Research Methods

Answer **all** questions in this section.

Only **two** answers per question are allowed.

For each question completely fill in the circle alongside the appropriate answer.

CORRECT METHOD



WRONG METHODS



If you want to change your answer you must cross out your original answer as shown.



If you wish to return to an answer previously crossed out, ring the answer you now wish to select as shown.



A psychologist investigated the relationship between stress and illness at a local school. The psychologist placed an advert on the staffroom noticeboard. Ten teachers contacted the psychologist offering to complete the psychologist's questionnaire.

In the questionnaire stress levels were measured on a scale from 1 to 10, with a higher score indicating greater stress. The questionnaire also asked how many days they had been absent from work due to sickness in the previous six months.

1 0 . 1

Write a suitable operationalised non-directional hypothesis for this investigation.

[3 marks]

There will be a significant correlation between teachers' stress level score on the questionnaire (on a scale of 1 to 10) and the number of days they were absent from work due to sickness in the previous six months.

1 0 . 2

Identify the sampling method used in this investigation.

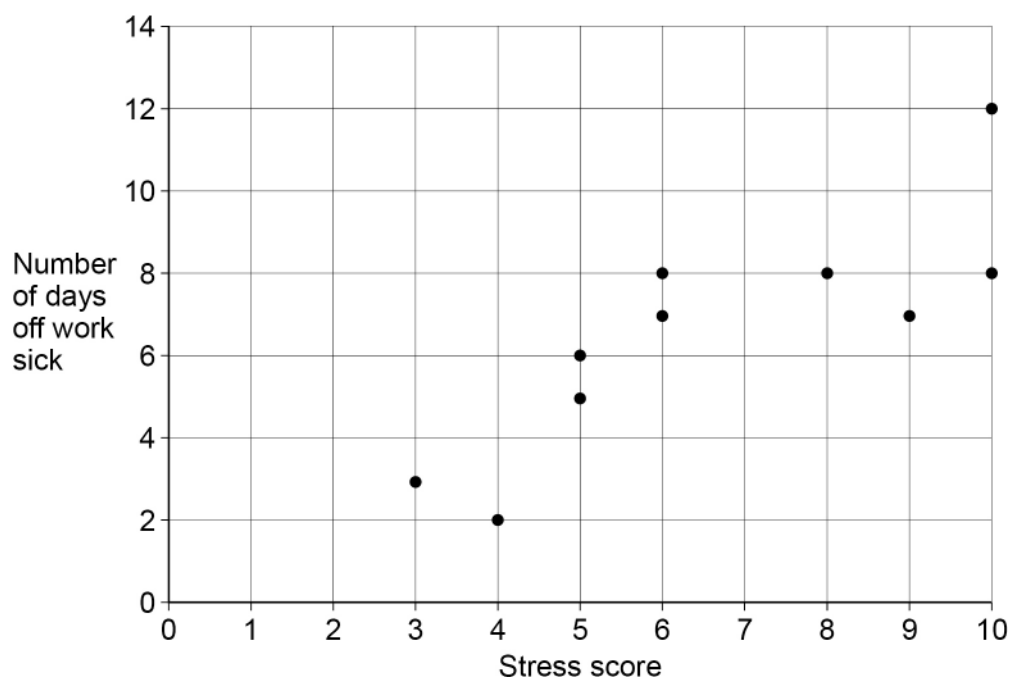
[1 mark]

Volunteer sampling (self-selected sample).



The results from the study are shown in **Figure 1** below.

Figure 1 The relationship between stress level scores 1–10 and number of days absent from work due to sickness in the previous six months



1 0 . 3

What does the graph in **Figure 1** suggest about the relationship between stress and illness?

[2 marks]

The graph shows a positive correlation between stress and illness. This suggests that as teachers' stress level scores increase, the number of days absent from work due to sickness in the previous six months also increases.

Question 10 continues on the next page

Turn over ►



1 0 . 4

Explain why the psychologist could not conclude that stress caused illness on the basis of the data in **Figure 1**.

[3 marks]

This was a correlational study, not an experiment, so the psychologist did not manipulate an independent variable or control other variables. A correlation only shows a relationship between two co-variables and cannot establish cause and effect. Illness might cause stress rather than stress causing illness, or a third variable, such as a heavy workload, may affect both stress and sickness absence.

1 0 . 5

Which **two** of the following best describe the stress level scores collected by the psychologist?

Shade **two** boxes.

[2 marks]

A Meta-analysis

☐

B Primary

☒

C Qualitative

☐

D Quantitative

☒

E Secondary

☐


In a follow-up study, the psychologist asked the same ten teachers to take part in an experiment to compare two strategies designed to encourage relaxation and lower heart rate.

Condition 1: Five of the teachers were given meditation techniques to complete every day for a week.

Condition 2: The other five teachers were given a healthy diet to follow for a week.

Each teacher's heart rate was measured at the start of the week and at the end of the week.

The results are summarised in **Table 1**.

Table 1 Mean and standard deviation values for meditation and healthy diet conditions

	Meditation condition		Healthy diet condition	
	Start of week	End of week	Start of week	End of week
Mean heart rate	76	68	80	79
Standard deviation	3.8	1.8	4.0	3.9

1 1 . 1

What do the mean values in **Table 1** suggest about the effectiveness of the different strategies? Justify your answer.

[2 marks]

Meditation is a more effective strategy than a healthy diet for lowering heart rate. This is because mean heart rate fell by 8 bpm (76 to 68) in the meditation condition but by only 1 bpm (80 to 79) in the healthy diet condition.

1 1 . 2

What do the standard deviation values for the meditation condition suggest? Justify your answer.

[2 marks]

There was less variation (spread) in heart rate around the mean after meditation, so teachers responded more consistently by the end of the week. This is because the standard deviation was smaller at the end of the week (1.8) than at the start (3.8).

Turn over ►



1 1 . 3

Outline how the psychologist could have obtained informed consent when conducting the follow-up study.

[3 marks]

Before the study, the psychologist should give each teacher a consent form explaining the procedure: that they will follow either meditation techniques every day or a healthy diet for a week, and have their heart rate measured at the start and end of the week. They should be told the aim and their right to withdraw at any time, then sign the form to agree to take part.

1 1 . 4

In the follow-up study, the psychologist used a different group of people in each condition, which could have affected the results.

Outline **two** ways in which the psychologist might change the design of this study to deal with this problem.

[6 marks]

Change 1 *Use a repeated measures design, so all ten teachers complete both the meditation and the healthy diet conditions. Each teacher acts as their own control, removing participant variables such as fitness. Counterbalancing (ABBA), with time left between conditions, would reduce order effects.*

Change 2 *Use a matched pairs design. Teachers would first be assessed on variables that affect heart rate, such as age, fitness and resting heart rate. The two most similar teachers form a pair, and one member of each pair is randomly allocated to the meditation condition and the other to the healthy diet condition. This reduces the effect of participant variables while avoiding order effects.*

24

END OF QUESTIONS



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