



Please write clearly in block capitals.

Centre number

--	--	--	--	--

Candidate number

--	--	--	--

Surname

StemUp Model Solution

Forename(s)

Candidate signature

AS PSYCHOLOGY

Paper 2 Psychology in Context

Monday 23 May 2016

Afternoon

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.
- 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.



J U N 1 6 7 1 8 1 0 2 0 1

IB/G/Jun16/E2

stemup.co.uk

7181/2

Section A

Approaches in Psychology

Answer **all** questions in this section.

For each multiple-choice 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.

**0 1**Which **two** of the following statements about the divisions of the nervous system are correct?Shade **two** boxes only.

In the human nervous system...

A the fight or flight response occurs when the parasympathetic division controls functioning.**B** the central nervous system consists of the brain and spinal cord.**C** sensory, relay and motor neurons are all controlled by the somatic nervous system.**D** sensory neurons carry messages from the central nervous system.**E** the somatic nervous system controls voluntary movements.**[2 marks]**

0 2

Briefly outline how excitation and inhibition are involved in synaptic transmission.
[4 marks]

When an action potential reaches the presynaptic terminal, neurotransmitters are released into the synaptic cleft and bind to receptors on the postsynaptic neuron.

Excitatory neurotransmitters, e.g. noradrenaline, depolarise the postsynaptic membrane (making it more positive), so the postsynaptic neuron is more likely to fire an impulse.

Inhibitory neurotransmitters, e.g. GABA, hyperpolarise the postsynaptic membrane (making it more negative), so the postsynaptic neuron is

Extra space *less likely to fire.*

A neuron receives many excitatory and inhibitory inputs at once, and these are added together (summation). If the net effect is excitatory and reaches the threshold, the neuron fires; if the net effect is inhibitory, it is less likely to fire.

Turn over for the next question



0 3

Read the following descriptions of behaviour:

- A** Sarah is terrified of lifts because she was trapped in one for 5 hours. She cannot go in a lift now.
- B** Jerry watches as his brother James is given sweets for cleaning their pet hamster's cage. The next day, Jerry's mum finds Jerry cleaning out the hamster cage.

How can the behaviours described in **A** and **B** above be explained by learning theories?

[6 marks]

A *Sarah's phobia can be explained by classical conditioning. Being trapped (UCS) naturally produced fear (UCR). The lift was a neutral stimulus, but as it was paired with being trapped for 5 hours, it became associated with the UCS.*

The lift is now a conditioned stimulus (CS) that alone triggers fear, a conditioned response (CR). In Mowrer's two-process model, operant conditioning maintains the phobia: avoiding lifts reduces her anxiety, which is negatively reinforcing, so she cannot go in a lift now.

B *Jerry's behaviour can be explained by social learning theory (Bandura), which says we learn by observing and imitating models. Jerry paid attention to James, a role model he identifies with as his older brother.*

Jerry saw James being rewarded with sweets for cleaning the hamster's cage. This is vicarious reinforcement: Jerry learned the consequences of the behaviour indirectly. He retained a mental representation of what James did and was motivated by expecting a reward too, so the next day he imitated James by cleaning the cage himself.



0 4

In a study of tooth decay, researchers checked the dental records of 100 pairs of identical twins. They recorded the number of fillings for each twin and found the following data:

Table 1

Twin pairs with the same number of fillings	Twin pairs with different number of fillings
48	52

Use your knowledge of genotype and phenotype to explain the data in **Table 1**.
[4 marks]

Genotype is a person's actual genetic make-up, whereas phenotype is the way those genes are expressed, which results from the interaction between genes and the environment.

Identical (MZ) twins share 100% of their genes, so each pair in Table 1 has the same genotype. If tooth decay were determined only by genes, both twins in every pair should have the same number of fillings.

Only 48 pairs had the same number of fillings, while 52 pairs differed. This shows that the twins' phenotypes differ even though their genotypes are identical, so tooth decay cannot be caused by genes alone.

Environmental factors must affect how the genotype is expressed, e.g. differences between the twins in diet, sugar intake or how often they brush their teeth.



0 5

Outline **two** features of the cognitive approach. Explain **two** limitations of the cognitive approach.

[8 marks]

One feature of the cognitive approach is that it studies internal mental processes, such as perception, attention, memory and thinking, and argues that these mediate between a stimulus and our behaviour.

These processes cannot be observed directly, so cognitive psychologists make inferences about them from behaviour measured in controlled laboratory experiments, which makes the approach scientific.

A second feature is the use of models. Mental processing is compared to a computer using the information processing approach: information is input, stored and retrieved, and output, as in the multi-store model of memory (Atkinson and Shiffrin, 1968). Schemas are another key idea: these are mental frameworks of beliefs and expectations, built from experience, that help us organise and interpret information quickly.

One limitation is that the computer analogy is mechanistic. Humans are not machines: computer models ignore the influence of emotion and motivation on thinking, for example anxiety affecting the accuracy of eyewitness recall. Cognitive explanations therefore leave little room for the irrational behaviour seen in emotional situations, which reduces their validity.

A second limitation is that much research lacks ecological validity. Experiments often use artificial tasks, such as recalling lists of unrelated words or digits in a lab, which do not reflect how memory is used in everyday life. This makes it hard to generalise findings to



real-world behaviour. Also, because mental processes are inferred rather than observed, the inferences may be a leap too far, so theories can be too abstract and difficult to falsify.

Extra space



Section B

Psychopathology

Answer **all** questions in this section.

For each multiple-choice 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.



0 6

Read the four definitions of abnormality below (**A-D**).

- A** Failure to function adequately
- B** Deviation from social norms
- C** Statistical infrequency
- D** Deviation from ideal mental health

In the table below, are descriptions of abnormal behaviour. Choose the definition that best matches each description and complete the table by writing **A** or **B** or **C** or **D** in the box at the end of the statement.

Use any letter only **once**.**[3 marks]**

Behaviour which is rare and not exhibited by many people	<i>C</i>
Behaviour which does not fit the rules of expected behaviour	<i>B</i>
Behaviour which shows an inability to cope with everyday life	<i>A</i>



0 7

Describe **at least one** strategy that might be used in cognitive behaviour therapy for depression.

[4 marks]

One CBT strategy is challenging irrational thoughts. First the therapist helps the client identify their negative automatic thoughts, e.g. the negative triad (Beck) about the self, the world and the future, such as "I am worthless".

The client then acts as a scientist and is set homework (reality testing): they keep a diary recording situations where negative thoughts occur and gather evidence to test them, e.g. noting each time someone was pleased to see them.

Extra space *In the next session the evidence is compared with the thought to show it is irrational. In Ellis's REBT this is disputing, e.g. logical disputing ("does this thinking make sense?") and empirical disputing ("where is the proof?"). The thought is then replaced with a more rational, positive one, improving mood.*

0 8

Below are four evaluative statements about cognitive behaviour therapy. Which statement is correct?

Shade **one** box only.

Cognitive behaviour therapy...

A can only be used in group situations.

☐

B allows the client some control over the therapy.

☒

C has many side effects.

☐

D does not need a trained therapist.

☐

[1 mark]



0 9

Saira has a fear of cats. Her fear stops her from going anywhere she thinks she might see a cat.

Explain how Saira's phobia could be treated using systematic desensitisation.

[4 marks]

Systematic desensitisation is based on classical conditioning and aims to break the association between the conditioned stimulus (cats) and the conditioned response (fear) by counterconditioning.

First, Saira is taught relaxation techniques, such as deep breathing or progressive muscle relaxation. Then she and the therapist draw up an anxiety hierarchy of cat-related situations, ranked from least to most frightening: e.g. hearing the word "cat", looking at a picture of a cat, watching a video of a cat, seeing a cat through a window, being in a room with a cat, and finally stroking a cat.

Saira works up the hierarchy gradually, starting at the lowest level while practising relaxation. She only moves to the next step once she feels relaxed at the current one. Because relaxation and fear cannot exist at the same time (reciprocal inhibition), relaxation replaces fear as the response to cats, until she can face the most feared step calmly and no longer avoids places where she might see a cat.



1 0

Two students were discussing their friend David who has recently been diagnosed with obsessive-compulsive disorder (OCD).

Melanie says, "It wasn't a surprise to me that David has OCD because his mum is always tidying things, putting them in order and checking switches".

Emma says, "Really, I didn't know that. I always thought that people with OCD have something in their brains that makes them behave in that way".

Outline and evaluate neural **and** genetic explanations for obsessive-compulsive disorder. Refer to the conversation above in your answer.

[12 marks]

You may use this space to plan your answer.

Emma's view that "something in their brains" makes people behave that way reflects the neural explanation, while Melanie's view that David's OCD is linked to his mum's behaviour reflects the genetic explanation.

The neural explanation focuses on neurotransmitters and brain structure. OCD is associated with low serotonin, which may be reabsorbed too quickly, before it has transmitted its signal. The worry circuit is also implicated: the orbitofrontal cortex (OFC) sends worry signals, which the caudate nucleus in the basal ganglia normally suppresses. If the caudate nucleus is damaged, worry is not switched off, causing intrusive thoughts and repetitive compulsions. This could explain why David feels compelled to keep tidying or checking.

The genetic explanation suggests OCD is inherited as a predisposition.



Candidate genes include the SERT gene, which affects serotonin transport, and the COMT gene, which regulates dopamine. OCD is polygenic: many genes each add a small risk. Family studies support this: first-degree relatives of people with OCD have a much higher rate of the disorder (around 10%) than the population prevalence of about 2%. As David's mum is a first-degree relative who shows similar ordering and checking behaviour, Melanie is suggesting he may have inherited genes that made him vulnerable.

One strength of the neural explanation is support from drug treatments. SSRIs, which increase serotonin levels in the synapse, reduce OCD symptoms in many patients. However, relieving symptoms does not prove low serotonin caused them. Also, drugs raise serotonin within hours but symptoms take weeks to improve, and only around 50% of patients improve, suggesting other causes.

Brain scans have shown abnormal activity in the OFC and caudate nucleus in people with OCD. However, findings are inconsistent about which circuits are involved, and the research is correlational, so brain differences could be a result of OCD rather than a cause.

The genetic explanation is supported by twin studies. Nestadt et al. (2010) reviewed twin studies and found 68% of identical (MZ) twins shared OCD compared with 31% of non-identical (DZ) twins, suggesting a strong genetic component. However, concordance is not 100%, so environmental factors must also play a role, which supports a diathesis-stress model.

Family studies are also limited because families share environments as well as genes. Social learning theory could explain Melanie's



observation: David may have learned tidying and checking by observing and imitating his mum as a role model, rather than inheriting a gene.

Overall, David may have inherited a vulnerability that affects his brain chemistry, so the two explanations complement each other and both Melanie and Emma may be partly correct.



Extra space



Section C

Research Methods

Answer **all** questions in this section.

1 1

A researcher wanted to compare the effectiveness of two therapies for young offenders who had been identified as having anger management issues. Offenders, who were all sentenced to two years in a Young Offenders' Institution, were asked to volunteer to take part in an anger management programme. Fifty volunteers were randomly allocated to Group 1 (Therapy A) or Group 2 (Therapy B).

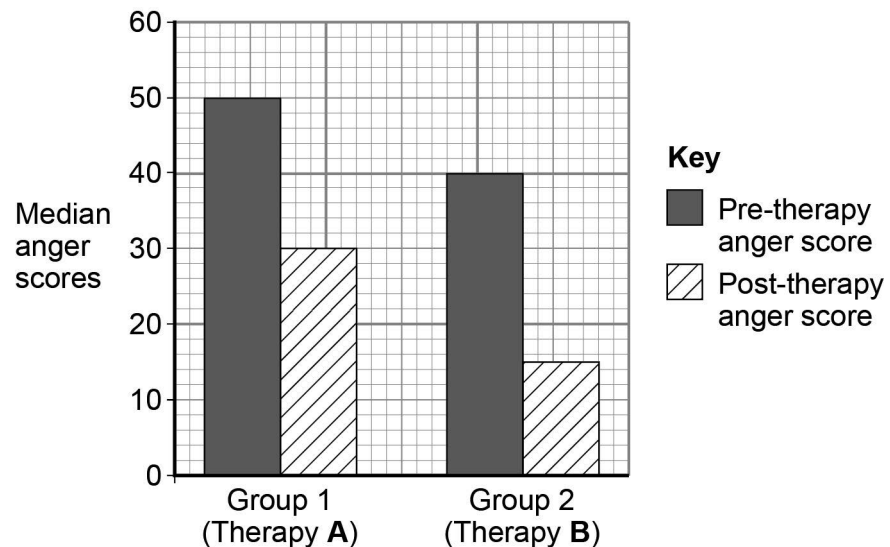
Each participant's anger was assessed before and after therapy. For the **pre-therapy anger score** they completed an Anger Scale questionnaire and their responses were scored. A high score indicated extreme anger and a low score indicated mild anger.

For the next eight weeks, participants attended weekly sessions for either Therapy A or Therapy B.

For the **post-therapy anger score**, at the end of the treatment period, participants completed the same Anger Scale questionnaire.

The data obtained are shown in **Figure 1** below.

Figure 1 Median anger scores before and after therapy for Group 1 (Therapy A) and Group 2 (Therapy B)



Question 11 continues on the next page



- 1 1 . 1** The researcher used volunteers for this study. Outline **one** disadvantage of using volunteers to take part in this study.

[2 marks]

Volunteer offenders may be more motivated, cooperative or keen to change than other offenders, so the sample is biased (volunteer bias). They may respond better to therapy than offenders who did not volunteer, so the findings cannot be generalised to all young offenders with anger issues.

- 1 1 . 2** Explain how the researcher could allocate the volunteers randomly to the conditions of the experiment.

[3 marks]

*The researcher would give each of the 50 volunteers a number (or write each name on an identical slip of paper).
All 50 numbers/names would be put into a hat (or a random number generator on a computer).
Names would be drawn out one at a time, the first assigned to Group 1 (Therapy A), the second to Group 2 (Therapy B), alternating until there are 25 participants in each group.*



1 1 . 3 Write a suitable hypothesis for this study.

[3 marks]

There will be a difference in the reduction in anger scores on the Anger Scale questionnaire (pre-therapy score minus post-therapy score) between young offenders who complete eight weeks of Therapy A and those who complete eight weeks of Therapy B.

1 1 . 4 What do the data in **Figure 1** seem to suggest?

[3 marks]

Both therapies seem effective, as median anger scores are lower after therapy than before for both groups.

Group 1 were angrier than Group 2 both before therapy (median 50 vs 40) and after therapy (30 vs 15).

Group 1's score fell by 20 (50 to 30) but Group 2's fell by 25 (40 to 15), suggesting Therapy B was more effective at reducing anger.

Question 11 continues on the next page



- 1 1 . 5** Explain how the study might be improved by using a matched pairs design.

[4 marks]

The researcher needs any difference in post-therapy scores to be due to the therapy, not participant variables. With independent groups, the groups differed at the start: Group 1's median pre-therapy score was 50, ten points higher than Group 2's median of 40, so Group 2's lower post-therapy scores may be because they were less angry to begin with.

In a matched pairs design, participants would be paired on their pre-therapy Anger Scale scores, with one member of each pair allocated to Therapy A and the other to Therapy B. Other variables such as type of offence could also be matched. Both groups would then start at the same anger level, so the researcher could conclude more validly which therapy works better.

- 1 1 . 6** Outline **one** ethical issue that might have occurred in this study and explain how the researcher could have dealt with this issue.

[4 marks]

As the participants are in custody in a Young Offenders' Institution, they may feel pressured to volunteer, for example believing that taking part will look good or that refusing will be held against them.

This means they may not have given fully informed, freely given consent and may not feel they have the right to withdraw.

The researcher should make clear, before and during the study, that participation is voluntary, will not affect their sentence or treatment, and that they can withdraw at any time. At the end, they should be fully debriefed and offered the right to withdraw their data.



1 1 . 7

Give **one** disadvantage of using median values as seen in **Figure 1** to represent the anger scores of participants.

[1 mark]

The median ignores extreme values (e.g. very high scores of 50), so it does not use all the data and is less sensitive than the mean.

1 1 . 8

Explain how demand characteristics might have occurred in this study.

[2 marks]

As the offenders completed the same Anger Scale questionnaire twice, after an anger management programme, they may have guessed the aim was to reduce anger. They may then have given lower post-therapy answers to please the researcher or to appear reformed, rather than reflecting their real anger.

1 1 . 9

The researcher used a questionnaire to assess the anger scores of the offenders. Briefly discuss **one** strength of using questionnaires in research.

[2 marks]

A questionnaire with closed questions, such as the Anger Scale, can collect large amounts of data quickly and cheaply. The responses are also easy to score and analyse objectively, and because the questions are standardised, the questionnaire can be replicated (as here, before and after therapy), increasing reliability.

24

END OF QUESTIONS



There are no questions printed on this page

**DO NOT WRITE ON THIS PAGE
ANSWER IN THE SPACES PROVIDED**

Copyright Information

For confidentiality purposes, from the November 2015 examination series, acknowledgements of third party copyright material will be published in a separate booklet rather than including them on the examination paper or support materials. This booklet is published after each examination series and is available for free download from www.aqa.org.uk after the live examination series.

Permission to reproduce all copyright material has been applied for. In some cases, efforts to contact copyright-holders may have been unsuccessful and AQA will be happy to rectify any omissions of acknowledgements. If you have any queries please contact the Copyright Team, AQA, Stag Hill House, Guildford, GU2 7XJ.

