

Please write clearly in block capitals.

Centre number

--	--	--	--	--

Candidate number

--	--	--	--

Surname

StemUp Model Solution

Forename(s)

Candidate signature

I declare this is my own work.

A-level PSYCHOLOGY

Paper 2 Psychology in context

Wednesday 22 May 2024

Morning

Time allowed: 2 hours

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 96.
- Questions should be answered in continuous prose. 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



J U N 2 4 7 1 8 2 2 0 1

Section A**Approaches in psychology**

Answer **all** questions in this section.

0	1
---	---

Describe the ego **and** superego according to the psychodynamic approach.

[4 marks]

The ego is the rational part of personality, working on the reality principle.

Formed at about 18 months to 3 years, it mediates between the conflicting demands of the id and superego, using defence mechanisms to reduce anxiety.

The superego is the moral part, formed in the phallic stage (about 3 to 6 years). It works on the morality principle, internalising the values of our same-sex parent and society. It is our conscience, punishing the ego with guilt, and holds the ego ideal.

0	2
---	---

Outline Wundt's method of introspection.

[4 marks]

Introspection is the process of examining and analysing one's own conscious experience. In his Leipzig lab (1879), Wundt trained participants to look inwards and report their thoughts, sensations, images and feelings in response to standardised stimuli, such as a ticking metronome or an object.

Every participant had the same stimulus and instructions in a controlled setting, so the method was systematic. Participants broke their experience down into its basic elements (structuralism), reporting it as objectively as possible.



0 3Outline **one** example of how neurochemistry influences behaviour.**[3 marks]**

Dopamine is a neurotransmitter involved in the brain's reward system and in regulating movement. Excess dopamine activity in the mesolimbic pathway has been linked to the positive symptoms of schizophrenia, such as hallucinations and delusions. Antipsychotic drugs that block dopamine (D2) receptors reduce these symptoms, showing that neurochemistry influences behaviour.

0 4

Karishma has very low self-esteem, even though she achieved very high GCSE grades. She would like to be a lawyer. Although she is studying A-levels, she has delayed her application to university because she does not think she will receive any offers. She does not think she is clever enough to study law.

Explain why a humanistic psychologist would suggest that Karishma is not displaying congruence.

[2 marks]

Congruence is when the self-concept and ideal self are similar. Karishma's ideal self is to be a lawyer, but her self-concept is that she is not clever enough to study law, despite her very high GCSE grades. This large gap means she is incongruent.

0 5

Explain how a humanistic psychologist might help Karishma to achieve congruence.

[3 marks]

Using client-centred therapy, the therapist would offer Karishma unconditional positive regard, empathy and genuineness so she feels valued and her self-esteem rises. By reflecting back her feelings and asking her about her excellent GCSE grades, the therapist helps Karishma see for herself that she is capable of studying law, so her self-concept moves closer to her ideal self and she feels confident enough to apply to university.

Turn over ►

0 6

Outline how behaviourists explain learning through the process of operant conditioning.

Compare operant conditioning with social learning.

[8 marks]

Operant conditioning, proposed by Skinner, explains learning as an active process in which behaviour is shaped and maintained by its consequences.

Positive reinforcement (receiving a reward, e.g. a rat getting food for pressing a lever in a Skinner box) and negative reinforcement (escaping something unpleasant, e.g. pressing a lever to stop an electric shock) both increase the likelihood that a behaviour is repeated. Punishment is an unpleasant consequence that decreases the likelihood of the behaviour being repeated.

Both operant conditioning and social learning theory (SLT) take the nurture side of the debate, seeing the infant as a 'blank slate' and behaviour as learned from the environment. Both accept that reinforcement and punishment shape behaviour, both are nomothetic, aiming to establish general laws of learning, and both use scientific methods such as lab experiments (Skinner's boxes, Bandura's Bobo doll study).

However, in operant conditioning reinforcement is direct, whereas SLT argues that learning can also be indirect, through observation and imitation of a role model and vicarious reinforcement, where we see the model being rewarded. SLT also includes mediational (cognitive) processes between stimulus and response: attention, retention, motor reproduction and motivation. Operant conditioning ignores these, treating the mind as a 'black box', so it is more reductionist, reducing behaviour to simple stimulus-response units, whereas SLT is less reductionist.

Finally, operant conditioning takes a hard (environmental) determinist position, seeing behaviour as entirely controlled by external forces, while SLT



is soft determinist, proposing reciprocal determinism: we influence our environment through the behaviours we choose, as well as being influenced by it.

Extra space



Section B

Biopsychology

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. **0 7** Which **two** of the following statements about the fight or flight response are **FALSE**?Shade **two** boxes only.

The fight or flight response involves:

[2 marks]**A** a decrease in the release of adrenaline.☒**B** an increase in the rate of respiration.☐**C** the flow of blood being diverted from the surface of the skin.☐**D** the parasympathetic division being in control of functioning.☒**E** the process of digestion being inhibited.☐

0 8

What are hormones? Give an example of a hormone **other than** adrenaline and outline its function.

[4 marks]

Hormones are chemical messengers secreted by glands of the endocrine system directly into the bloodstream. They are carried in the blood to target cells and organs with specific receptors, where they control how those cells work, influencing physiology, behaviour and mood.

An example is melatonin, secreted by the pineal gland. Its function is to help regulate the sleep/wake cycle: more melatonin is released when it is dark, causing drowsiness and promoting sleep, whereas light inhibits its release, promoting wakefulness.

Extra space _____

0 9

A psychologist conducted a case study of a patient who had difficulty sleeping.

Briefly explain **one** ethical issue the psychologist would need to consider in this study.

[2 marks]

Confidentiality: the patient may reveal sensitive information about their sleeping problems and private night-time habits, so the psychologist must not publish their name, using a pseudonym instead, so they cannot be identified.

Turn over ►



1 0

Discuss research into the effects of endogenous pacemakers **and** exogenous zeitgebers on the sleep/wake cycle.

[16 marks]

You may use this space to plan your answer.

The sleep/wake cycle is a circadian rhythm lasting about 24 hours. It is controlled mainly by an endogenous pacemaker, the suprachiasmatic nucleus (SCN), a cluster of neurons in the hypothalamus. The SCN receives information about light from the retina via the optic chiasm, even when the eyes are closed, and passes it to the pineal gland. In darkness the pineal gland secretes melatonin, which induces sleep, while light inhibits melatonin, promoting wakefulness. Exogenous zeitgebers are external cues that entrain (reset) the cycle each day. Light is the most important zeitgeber, but social cues such as mealtimes and bedtimes also play a role.

Siffre (1962) spent two months in a cave without natural light or clocks. His free-running sleep/wake cycle settled at just over 24 hours, showing that the SCN maintains a rhythm without zeitgebers, but that light is needed to keep it to exactly 24 hours. Aschoff and Wever (1976) found similar results with participants living in a bunker: most had cycles of 24 to 25 hours, although one had a cycle of 29 hours.

Animal studies support the role of the SCN. DeCoursey et al. (2000) destroyed the SCN of 30 chipmunks and returned them to their natural



habitat. Their sleep/wake cycle disappeared and a significant proportion were killed by predators, as they were awake and vulnerable when they should have been asleep. Ralph et al. (1990) bred mutant hamsters with a 20-hour cycle; when their SCN cells were transplanted into normal hamsters, the recipients adopted a 20-hour cycle, showing that the SCN sets the rhythm. However, much of this evidence is limited. Siffre was a single adult male, so findings from a case study may not generalise to others. Findings from chipmunks and hamsters cannot easily be generalised to humans, whose sleep is also influenced by cognitive and social factors. DeCoursey's study also raises ethical issues, as the animals were exposed to harm and an increased risk of death, which must be weighed against the value of the findings.

The role of light as a zeitgeber is supported by Campbell and Murphy (1998), who woke 15 participants at various times and shone light onto the backs of their knees, shifting their sleep/wake cycle by up to three hours. This suggests light can reset the SCN by routes other than the eyes. However, this study has not been successfully replicated, which reduces confidence in its conclusions.

Social cues also matter but appear weaker than light. Miles et al. (1977) studied a man blind from birth whose cycle was 24.9 hours and could not be adjusted despite regular social cues such as clocks and radios.

Nonetheless, research into zeitgebers has practical applications: jet lag can be reduced by adopting local mealtimes and spending time outdoors in daylight, and it has informed the debate on starting the school day later for adolescents, whose cycles are naturally delayed.

There are also individual differences in the cycle: Duffy et al. (2001) found that 'larks' prefer to sleep and wake earlier than 'owls', suggesting innate

Turn over ►



variation that a single explanation cannot fully account for.

Overall, research supports an interactionist view: endogenous pacemakers and exogenous zeitgebers work together, as in everyday life the SCN is constantly entrained by light. Studying the SCN in isolation, as in Siffre's cave, therefore lacks ecological validity, because total isolation from zeitgebers never happens in real life.

Extra space



Section C

Research methods

Answer **all** questions in this section.

A researcher wanted to investigate the types of play parents engaged in with their children. Ten children and one parent of each child took part in the study. The researcher asked each parent to keep a diary for a month about the types of play their child engaged in.

1 1

Is the diary primary or secondary data? Justify your answer.

[2 marks]

Primary data, because it was collected first-hand by the researcher, directly from the parents, specifically for the purpose of this study into children's play.

1 2

Explain how the researcher could have used content analysis to analyse the parents' diaries.

[4 marks]

The researcher would first read through a sample of the parents' diaries to identify coding categories of play that emerge from the data, such as role-play, board games, video games, sports, building blocks and going to the park.

They would then reread all ten diaries and tally each time an example of each type of play was mentioned. This converts the qualitative diary entries into quantitative data (frequencies of each type of play), which could be compared, e.g. across the ten children, and displayed in a bar chart.

Extra space _____

Turn over ►



1 3

The researcher was concerned about the reliability of the content analysis.

How might the researcher have assessed the reliability of the content analysis in this study?

[4 marks]

The researcher could check inter-rater reliability. A second researcher would independently carry out a content analysis of the same parents' diaries, using the same coding categories of play (e.g. role-play, board games).

They would compare their tally charts for each type of play and calculate the correlation between the two sets of tallies. A correlation of +0.8 or above would show that the content analysis was reliable. Alternatively, the researcher could reanalyse the same diaries a few weeks later (test-retest) and correlate the two sets of tallies in the same way.

Extra space _____

1 4

The researcher decided to interview some of the parents about their child's play.

Explain why the data collected from the interview might have improved upon the data collected from the diaries.

[3 marks]

In an interview the researcher could ask parents follow-up questions to clarify and expand on brief diary entries, e.g. why their child preferred role-play, giving richer, more detailed data. Face to face, the interviewer could also build rapport, so parents may feel comfortable revealing things they did not write down.



1 5

In the interview the researcher collected some qualitative data.

Write **one** question that could be used in the researcher's interview that would produce qualitative data.

[2 marks]

*"Can you describe the types of play your child most enjoys doing with you,
and explain why you think they enjoy them?"*

1 6

Identify **one** limitation of qualitative data.

[1 mark]

*Qualitative data is difficult to analyse, and its interpretation may be
subjective.*

Turn over for the next question

Turn over ►

The researcher noticed age-related differences in the types of play mentioned in the diary entries. They designed an experiment to investigate the differences in play choices between 2-year-old and 4-year-old children.

The researcher carried out the study using children from two local nursery schools. There were 30 children of each age group at nursery A. There were 20 children of each age group at nursery B. All parents gave informed consent for their children to take part in the study. The researcher used stratified sampling of the nurseries. Ten 2-year-olds and ten 4-year-olds took part in the study.

Each child was observed for 15 minutes during playtime in an area of the nursery where they could choose to play with building blocks, a sandpit and a slide. The researcher recorded how long each child spent playing with each activity.

1	7
---	---

Explain how the researcher could have obtained informed consent from the parents for this study.

[4 marks]

The researcher could write to the parents (or invite them to a meeting at the nursery) giving full details of the study: the aim, investigating age-related differences in play, and the procedure, that their child would be observed for 15 minutes at playtime choosing between building blocks, a sandpit and a slide, with the time spent on each recorded. It would explain that data is confidential and their right to withdraw their child. Parents would then sign a consent form if they agreed.

1	8
---	---

Identify the type of experiment used in this study. Justify your answer.

[3 marks]

A quasi-experiment. The IV is the age of the children (2-year-olds or 4-year-olds), which is a naturally occurring, pre-existing difference that the researcher could not manipulate, so the children could not be randomly allocated to conditions.



1 9

Explain how a pilot study could be carried out to improve this study.

[4 marks]

A small-scale trial of the study would be run first with a few children of each age at another nursery. The researcher could check that 15 minutes is an appropriate length, e.g. shortening it if children got bored, and that the three activities are suitable, e.g. replacing one if no child chose it. They could also check whether the observer's presence affected play, and observe covertly if so. Flaws can then be corrected before time and money are spent on the main study.

There were 30 4-year-old children at nursery A and 20 4-year-old children at nursery B. The researcher used a stratified sample of 10 4-year-old children for the study.

2 0

Explain how the researcher might have obtained the stratified sample of 4-year-old children from the two different nursery schools.

[4 marks]

The strata are the two nurseries. 4-year-olds are split 30:20 between nursery A and nursery B, a ratio of 3:2, so the sample should reflect this: $\frac{3}{5} \times 10 = 6$ children from nursery A and $\frac{2}{5} \times 10 = 4$ children from nursery B.

To select them randomly, the researcher could put the names of all 30 4-year-olds at nursery A in a hat and draw out 6, then draw 4 names from the 20 at nursery B.

Turn over ►

The researcher calculated averages for the time (in minutes) spent in the sandpit for each age group. The results are shown in the table below.

Table 1 Average time in minutes spent in the sandpit for the two age groups

Measure of central tendency	2-year-olds	4-year-olds
Mean	11	6
Median	12	6
Mode	15	6

2 1

Identify the type of distribution shown in the data in **Table 1** for **each** age group. In **each** case justify your answer.

[4 marks]

2-year-olds: *Negatively skewed, because the mean (11) is lower than the median (12), which is lower than the mode (15), so the tail is towards the lower times (left).*

4-year-olds: *Normal distribution, because the mean, median and mode are all the same (6 minutes), so the scores are symmetrically distributed.*



2 2

What do the mean values in **Table 1** suggest about play preferences in 2-year-old and 4-year-old children? Justify your answer.

[2 marks]

2-year-olds prefer sandpit play more than 4-year-olds do, because on average the 2-year-olds chose to spend almost twice as long in the sandpit (mean 11 minutes) as the 4-year-olds (6 minutes).

2 3

The researcher decided to use an unrelated t-test to analyse the raw data from the study on sandpit play.

Explain **three** reasons for this choice in the context of this study.

[6 marks]

Firstly, the design is independent groups (unrelated): the 2-year-olds and the 4-year-olds are different children, so each child only took part in one condition, rather than the same children being tested twice. The scores in the two conditions are therefore unrelated, as there is no pairing of participants.

Secondly, the data is at least interval level, because the time spent in the sandpit was measured in minutes, a standardised scale with equal units between each point, so a parametric test such as the t-test is appropriate.

Thirdly, the researcher is testing for a difference, comparing the time the 2-year-olds and 4-year-olds spent playing in the sandpit, rather than looking for a correlation or association. An unrelated t-test tests whether the difference between the two group means is significant.

Extra space _____

Turn over ►

The calculated value of t was 3.576

For this study degrees of freedom (df) = 18

Table 2 Extract from table of critical values of t

Level of significance for a two-tailed test	0.10	0.05	0.01	0.001
$df = 17$	1.740	2.110	2.898	3.965
18	1.734	2.101	2.878	3.922
19	1.729	2.093	2.861	3.883
20	1.725	2.086	2.845	3.850

The calculated value of t must be equal to or greater than the critical value in this table for significance to be shown.

2 4

With reference to the critical values in **Table 2** above, explain whether or not there was a significant difference between the two age groups at the 5% level of significance.

[2 marks]

There was a significant difference. The calculated value of t (3.576) is greater than the critical value of 2.101 ($df = 18$, $p = 0.05$, two-tailed), so the null hypothesis is rejected.

2 5

Referring to the critical values in **Table 2**, explain why the researcher is very unlikely to have made a Type I error.

[3 marks]

A Type I error is a false positive: rejecting the null hypothesis when it is true. The calculated value of 3.576 is also greater than the critical value of 2.878 at the 0.01 level ($df = 18$), so the result is significant at $p \leq 0.01$. There is less than a 1% probability that the difference is due to chance, so a Type I error is very unlikely.

END OF QUESTIONS



There are no questions printed on this page

*Do not write
outside the
box*

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



[illegible]

Do not write
outside the
box

[illegible]

[illegible]

[illegible]

There are no questions printed on this page

*Do not write
outside the
box*

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

Copyright information

For confidentiality purposes, all acknowledgements of third-party copyright material are published in a separate booklet. This booklet is published after each live examination series and is available for free download from www.aqa.org.uk.

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.

Copyright © 2024 AQA and its licensors. All rights reserved.



2 4



2 4 6 A 7 1 8 2 / 2