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Centre number

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Candidate number

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Candidate signature

I declare this is my own work.

AS PSYCHOLOGY

Paper 2 Psychology in context

Monday 22 May 2023

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.
- 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	



J U N 2 3 7 1 8 1 2 0 1

Section A**Approaches in Psychology**

Answer **all** questions in this section.

0	1
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Describe **two or more** functions of the peripheral nervous system.

[4 marks]

The peripheral nervous system (PNS) transmits messages via millions of neurons to and from the central nervous system (CNS). It is divided into the somatic and autonomic nervous systems.

The somatic nervous system carries sensory information from the sense organs (receptors) to the CNS and carries motor information from the CNS to effectors such as skeletal muscles, allowing voluntary movement and reflex arcs.

The autonomic nervous system transmits information to and from Extra space internal bodily organs such as the heart and gut, controlling involuntary functions. Its sympathetic branch works with the endocrine system to produce physiological arousal in the fight or flight response (e.g. increased heart rate), and its parasympathetic branch returns the body to its resting state (rest and digest).



Ellie and Lucy are identical twins who were raised together in the same household and went to the same school. They both recently completed an online intelligence test and were surprised to discover that Ellie achieved a higher score than Lucy.

0	2
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Use your knowledge of genotype **and** phenotype to explain possible reasons why Ellie and Lucy had different scores.

[4 marks]

As identical (MZ) twins, Ellie and Lucy share 100% of their genes, so they have the same genotype, meaning the genes that code for aspects of intelligence are identical in both girls.

However, their phenotype, the way these genes are actually expressed in observable characteristics such as their intelligence test scores, is different, since Ellie scored higher than Lucy. This shows that genotype is not the only factor and that the expression of their genes has been influenced by the environment.

Extra space *Although they grew up in the same household and went to the same school, they may have had different experiences, for example different teachers or friendship groups, different learning experiences or hobbies, or Ellie may have been more motivated or less tired on the day of the online test. These environmental factors could explain why Ellie's phenotype for intelligence differs from Lucy's despite their identical genotype.*

Turn over for the next question

Turn over ►



0	3
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Choose **two** glands in the endocrine system and explain the functions of **each** gland.
[4 marks]

Gland 1 *The pituitary gland is the 'master gland' controlling the release of hormones from other glands. In stress it releases ACTH, which stimulates the adrenal cortex to release cortisol.*

Gland 2 *The adrenal medulla releases adrenaline, triggering the fight or flight response: it increases heart rate and breathing rate and constricts blood vessels to prepare the body for action.*



0 4

Describe and evaluate the cognitive approach in psychology.

[12 marks]

You may use this space to plan your answer.

The cognitive approach argues that behaviour is driven by internal mental processes such as perception, attention, memory and thinking, which can be conscious or non-conscious. Cognitive psychologists see the mind as an information processor and use the computer analogy: information is input through the senses, processed and stored (like a CPU and hard drive) and then output as behaviour.

A key concept is the schema, a mental framework of beliefs, knowledge and expectations developed from experience. Schemas help us process large amounts of information quickly, but they can also distort perception and memory, for example when we fill gaps in a story with what we expect.

Because mental processes cannot be observed directly, psychologists build theoretical models, such as the multi-store model of memory (Atkinson and Shiffrin, 1968), and test them using controlled laboratory experiments, making inferences about mental processes from observed behaviour such as recall scores. More recently, cognitive neuroscience has combined cognitive and biological approaches, using brain scans such as fMRI to identify the brain structures involved in mental processes.

Turn over ►

A strength of the approach is its scientific rigour. It uses highly controlled lab experiments with standardised procedures, so extraneous variables can be controlled, cause and effect can be established and findings can be replicated. This has given psychology greater credibility as a science, and the emergence of cognitive neuroscience adds objective biological evidence.

However, this reliance on artificial lab tasks means the approach can lack ecological validity. For example, memory research often uses lists of meaningless words, which tells us little about how memory works in real life, such as recalling a crime as an eyewitness. Also, because mental processes are inferred rather than observed, interpretations may be subjective and difficult to verify.

A further limitation is that the computer analogy is mechanistic.

Humans are not machines: emotion, motivation and fatigue affect how we think, and the approach struggles to explain irrational, emotive behaviour. It can also be oversimplistic, studying single processes in isolation rather than how they work together, and it overlooks factors emphasised by other approaches, such as genes (biological approach) or reinforcement and social context (behaviourism and SLT).

Nevertheless, the approach has valuable real-life applications. Beck's cognitive model of depression led to CBT, an effective therapy that challenges irrational thoughts, and research into memory has improved the reliability of eyewitness testimony through the cognitive interview. This suggests that, despite its limitations, the cognitive approach has made a major positive contribution to psychology.



Extra space



Section B

Psychopathology

Answer **all** questions in this section.Only **one** answer per question is 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 5

Which of the following is **not** a cognitive characteristic of phobias?Shade **one** box only.

[1 mark]

A Distorted perceptions

☐

B Irrational beliefs

☐

C Selective attention

☐

D Severe anxiety

☒

0 6

A psychologist constructed a questionnaire which was designed to measure and define abnormality. **Figure 1** shows part of the questionnaire.

Figure 1

Which of these statements do you agree with?

- A I find it hard to maintain eye contact with another person when in conversation.
- B I often feel extremely distressed.
- C I regularly skip meals and do not wash myself.

0 6 . 1

Referring to the statements in **Figure 1** above, briefly outline **two** definitions of abnormality.

[4 marks]

1 *Deviation from social norms: behaving in a way that breaks a society's unwritten rules. Statement C (skipping meals, not washing) assesses this, as personal hygiene is a social norm.*

2 *Failure to function adequately: not coping with everyday life. Statement B assesses personal distress, and A assesses failure to follow interpersonal rules such as eye contact.*

0 6 . 2

Briefly evaluate **one** definition of abnormality.

[3 marks]

A limitation of deviation from social norms is that norms vary over time and between cultures. Behaviour such as homosexuality was once seen as abnormal in the UK and is now accepted, and avoiding eye contact (statement A) is respectful in some cultures. This makes the definition culturally relative, so it cannot provide a universal definition and risks labelling people from other cultures as abnormal.

Turn over ►



0 6 . 3

The psychologist completed her research and submitted it to be peer reviewed. Briefly explain **two** reasons why conducting a peer review might improve psychological research.

[4 marks]

1 *Peers (experts in the same field) check the quality of the research, identifying flaws in the method or analysis and suggesting improvements such as collecting more data.*

2 *It checks the work is original, valid and suitable for publication, preventing fraudulent or poor research being published, which protects the credibility of psychology and future funding.*

0 7

Describe **one** biological explanation for obsessive compulsive disorder (OCD).

[4 marks]

The neural explanation suggests OCD is caused by abnormal brain chemistry and structure. People with OCD have low levels of serotonin, as it is removed from the synapse too quickly before impulses are passed on, so mood-related information is not transmitted properly.

There may also be abnormal functioning in the worry circuit. The orbitofrontal cortex (OFC) sends 'worry' signals to the thalamus, and these are normally suppressed by the basal ganglia (caudate nucleus). If the caudate nucleus is damaged, the thalamus is alerted repeatedly,

Extra space *sending signals back to the OFC and creating a loop of obsessive thoughts and repetitive compulsive behaviours. The parahippocampal gyrus, linked to processing unpleasant emotions, may also function abnormally.*

These neural differences may have a genetic basis, for example the SERT gene affecting serotonin transport.



0 8

Describe and evaluate cognitive behaviour therapy (CBT) as a treatment for depression.

[8 marks]

CBT aims to identify and change the negative, irrational thoughts and schema that cause depression, such as Beck's negative triad. The therapist and client first identify irrational thoughts ('thought-catching'), often using diary records of situations in which negative thinking occurs. In Beck's cognitive therapy the client acts as a 'scientist', generating hypotheses about their beliefs and testing them through reality testing and homework assignments, e.g. testing the belief 'nobody likes me' by recording how often people speak to them. In Ellis's REBT, the ABC model is extended to D (dispute) and E (effect): irrational beliefs are challenged through empirical and logical disputing, and positive thoughts are reinforced, leading to cognitive restructuring.

A strength is that CBT is supported by evidence. March et al. (2007) found that after 36 weeks 81% of depressed adolescents treated with CBT had improved, the same as with antidepressants, showing it is as effective as drugs but without side effects. It also tackles the underlying cause (irrational thinking), so relapse may be less likely than with drugs.

However, CBT requires motivation and commitment, which severely depressed clients may lack, so it may not suit everyone. Also, success may be due to the therapeutic relationship rather than the CBT techniques themselves. Finally, CBT focuses on present thinking and may minimise past events and real social circumstances such as poverty, possibly blaming the client for their depression.

Turn over ►



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Section C

Research Methods

Answer **all** questions in this section.

A psychologist investigated whether productivity levels are affected by the amount of sleep a person gets. They asked 30 participants to sleep for 4 hours on the first night and then stay awake all of the next day (**Day 1**). The same participants were then asked to sleep for 8 hours on the second night and stay awake all of the next day (**Day 2**).

Each participant was then asked to rate their productivity at the end of **Day 2** as 'more than', or 'less than', or 'the same as' **Day 1**.

0 9

Outline what is meant by an aim. Write a suitable aim for this study.

[2 marks]

An aim is a general statement of the purpose of a study, saying what the researcher intends to investigate.

Aim: to investigate whether the amount of sleep a person gets affects their productivity.

The results of the study are given in **Table 1** below:

Table 1 Number of participants giving each productivity rating at the end of Day 2

	More productivity	Less productivity	Same productivity
Number of participants	21	6	3



1 0

The psychologist analysed the results of the study using the sign test.

Explain **two** reasons why it was appropriate to use the sign test in this situation. Refer to the description of the study in your answer.

[4 marks]

1 *The data are nominal: each participant simply rated their productivity as 'more', 'less' or 'the same', which are categories, not scores on a scale.*

2 *It is a repeated measures (related) design: the same 30 participants slept 4 hours (Day 1) and 8 hours (Day 2), and a difference between conditions is tested.*

1 1

Use the data in **Table 1** to calculate the value of S using the sign test. Explain how you calculated this figure.

[3 marks]

$$S = 6.$$

The 3 participants with the same productivity (nil differences) are ignored, leaving $N = 27$. I compared 21 more (+) with 6 less (-); S is the less frequent sign, so $S = 6$.

Turn over for the next question

Turn over ►



As a result of the sign test calculation the psychologist concluded that participants assessed themselves as more productive after eight hours' sleep than after four hours' sleep. Other previous research has also shown that having more sleep has a positive effect on problem-solving skills.

In a follow-up study, the psychologist designed an experiment to investigate further the effect of sleep duration on problem solving. They randomly selected 20 students from a local university. There were two conditions:

Condition 1 – the students were invited to a university sleep laboratory and were allowed to sleep for six hours. Fifteen minutes after waking, each student was timed to see how long it took them to solve 10 simple mathematical problems, correctly.

Condition 2 – the same 20 students were invited back to the sleep laboratory a week later. This time they were allowed to sleep for two hours. Fifteen minutes after waking, each student was again timed to see how long it took them to solve a different set of 10 simple mathematical problems, correctly.

1	2
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Briefly explain how the psychologist would carry out a pilot study in this case.

[2 marks]

Before the main study, a small group of students (e.g. 4) would sleep six and two hours in the sleep lab, then solve sample maths problems with the planned instructions, checking timings and clarity.

1	3
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Should the hypothesis for the follow-up study be directional or non-directional? Explain your answer.

[2 marks]

Directional. The original study found more sleep led to higher productivity, and previous research showed more sleep improves problem solving, so the direction of the results can be predicted.



1 4

Write a suitable experimental hypothesis for the follow-up study.

[3 marks]

Students will take less time to correctly solve 10 simple mathematical problems fifteen minutes after waking from six hours' sleep than fifteen minutes after waking from two hours' sleep.

1 5

Identify **one** extraneous variable that could have affected the results of the follow-up study.

Suggest why it would have been important to control this extraneous variable **and** how the psychologist could have controlled it.

[3 marks]

Difficulty of the mathematical problems, as a different set was used in each condition.

If the problems in Condition 1 were easier, students would solve them faster because of the easier problems, not because of the extra sleep, so the DV would not be validly measured.

The psychologist should pilot and standardise 20 problems of equal difficulty, then randomly allocate 10 to each condition.

Turn over for the next question

Turn over ►



1 6

Explain how the psychologist could have used random sampling to select the students in the follow-up study.

[3 marks]

Obtain a complete list (e.g. the register) of every student at the local university and give each a number. Enter the numbers into a computer random number generator (or put all names in a hat) and draw out 20. These 20 students are the sample, so every student had an equal chance of being selected.

1 7

Briefly explain **one** problem with using random sampling in the follow-up study.

[2 marks]

With only 20 students, random selection may still not be representative, e.g. mostly from one course or gender, and selected students may refuse, which is time consuming.

24**END OF QUESTIONS**

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2 4



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