Please check the examination details below before entering your candidate information

Candidate surname	Other names
StemUp Model Solution	

Pearson Edexcel
International
Advanced Level

Centre Number	Candidate Number

Thursday 14 May 2020

Afternoon (Time: 2 hours)	Paper Reference **WPS02/01**

Psychology

International Advanced Subsidiary
Paper 2: Biological Psychology, Learning Theories and Development

You do not need any other materials.

Total Marks

Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Answer the questions in the spaces provided
  – *there may be more space than you need.*

Information

- The total mark for this paper is 96.
- The marks for **each** question are shown in brackets
  – *use this as a guide as to how much time to spend on each question.*
- The list of formulae and statistical tables are printed at the start of this paper.
- Candidates may use a calculator.

Advice

- Read each question carefully before you start to answer it.
- Check your answers if you have time at the end.

Turn over ▶

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FORMULAE AND STATISTICAL TABLES

Standard deviation (sample estimate)

$$\sqrt{\left(\frac{\sum(x-\bar{x})^2}{n-1}\right)}$$

Spearman's rank correlation coefficient

$$1-\frac{6\sum d^2}{n(n^2-1)}$$

Critical values for Spearman's rank

	Level of significance for a one-tailed test				
	0.05	**0.025**	**0.01**	**0.005**	**0.0025**
	Level of significance for a two-tailed test				
N	**0.10**	**0.05**	**0.025**	**0.01**	**0.005**
5	0.900	1.000	1.000	1.000	1.000
6	0.829	0.886	0.943	1.000	1.000
7	0.714	0.786	0.893	0.929	0.964
8	0.643	0.738	0.833	0.881	0.905
9	0.600	0.700	0.783	0.833	0.867
10	0.564	0.648	0.745	0.794	0.830
11	0.536	0.618	0.709	0.755	0.800
12	0.503	0.587	0.678	0.727	0.769
13	0.484	0.560	0.648	0.703	0.747
14	0.464	0.538	0.626	0.679	0.723
15	0.446	0.521	0.604	0.654	0.700
16	0.429	0.503	0.582	0.635	0.679
17	0.414	0.485	0.566	0.615	0.662
18	0.401	0.472	0.550	0.600	0.643
19	0.391	0.460	0.535	0.584	0.628
20	0.380	0.447	0.520	0.570	0.612
21	0.370	0.435	0.508	0.556	0.599
22	0.361	0.425	0.496	0.544	0.586
23	0.353	0.415	0.486	0.532	0.573
24	0.344	0.406	0.476	0.521	0.562
25	0.337	0.398	0.466	0.511	0.551
26	0.331	0.390	0.457	0.501	0.541
27	0.324	0.382	0.448	0.491	0.531
28	0.317	0.375	0.440	0.483	0.522
29	0.312	0.368	0.433	0.475	0.513
30	0.306	0.362	0.425	0.467	0.504

The calculated value must be equal to or exceed the critical value in this table for significance to be shown.

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Chi-squared distribution formula

$$X^2 = \sum \frac{(O-E)^2}{E} \qquad df = (r-1)(c-1)$$

Critical values for chi-squared distribution

	Level of significance for a one-tailed test					
	0.10	**0.05**	**0.025**	**0.01**	**0.005**	**0.0005**
	Level of significance for a two-tailed test					
df	**0.20**	**0.10**	**0.05**	**0.025**	**0.01**	**0.001**
1	1.64	2.71	3.84	5.02	6.64	10.83
2	3.22	4.61	5.99	7.38	9.21	13.82
3	4.64	6.25	7.82	9.35	11.35	16.27
4	5.99	7.78	9.49	11.14	13.28	18.47
5	7.29	9.24	11.07	12.83	15.09	20.52
6	8.56	10.65	12.59	14.45	16.81	22.46
7	9.80	12.02	14.07	16.01	18.48	24.32
8	11.03	13.36	15.51	17.54	20.09	26.12
9	12.24	14.68	16.92	19.02	21.67	27.88
10	13.44	15.99	18.31	20.48	23.21	29.59
11	14.63	17.28	19.68	21.92	24.73	31.26
12	15.81	18.55	21.03	23.34	26.22	32.91
13	16.99	19.81	22.36	24.74	27.69	34.53
14	18.15	21.06	23.69	26.12	29.14	36.12
15	19.31	22.31	25.00	27.49	30.58	37.70
16	20.47	23.54	26.30	28.85	32.00	39.25
17	21.62	24.77	27.59	30.19	33.41	40.79
18	22.76	25.99	28.87	31.53	34.81	42.31
19	23.90	27.20	30.14	32.85	36.19	43.82
20	25.04	28.41	31.41	34.17	37.57	45.32
21	26.17	29.62	32.67	35.48	38.93	46.80
22	27.30	30.81	33.92	36.78	40.29	48.27
23	28.43	32.01	35.17	38.08	41.64	49.73
24	29.55	33.20	36.42	39.36	42.98	51.18
25	30.68	34.38	37.65	40.65	44.31	52.62
26	31.80	35.56	38.89	41.92	45.64	54.05
27	32.91	36.74	40.11	43.20	46.96	55.48
28	34.03	37.92	41.34	44.46	48.28	56.89
29	35.14	39.09	42.56	45.72	49.59	58.30
30	36.25	40.26	43.77	46.98	50.89	59.70
40	47.27	51.81	55.76	59.34	63.69	73.40
50	58.16	63.17	67.51	71.42	76.15	86.66
60	68.97	74.40	79.08	83.30	88.38	99.61
70	79.72	85.53	90.53	95.02	100.43	112.32

The calculated value must be equal to or exceed the critical value in this table for significance to be shown.

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Wilcoxon Signed Ranks test process

- Calculate the difference between two scores by taking one from the other
- Rank the differences giving the smallest difference Rank 1

  Note: do not rank any differences of 0 and when adding the number of scores, do not count those with a difference of 0, and ignore the signs when calculating the difference
- Add up the ranks for positive differences
- Add up the ranks for negative differences
- T is the figure that is the smallest when the ranks are totalled (may be positive or negative)
- N is the number of scores left, ignore those with 0 difference

Critical values for the Wilcoxon Signed Ranks test

	Level of significance for a one-tailed test		
	0.05	0.025	0.01
	Level of significance for a two-tailed test		
n	0.1	0.05	0.02
N=5	0	-	-
6	2	0	-
7	3	2	0
8	5	3	1
9	8	5	3
10	11	8	5
11	13	10	7
12	17	13	9

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

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SECTION A

BIOLOGICAL PSYCHOLOGY

Answer ALL questions. Write your answers in the spaces provided.

1 (a) Name the area of the brain indicated in **Figure 1**.

(1)

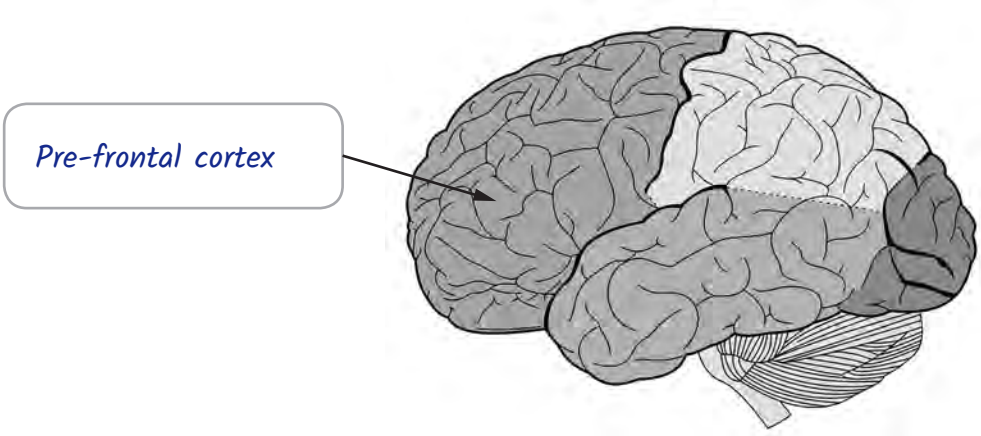


Figure 1

(b) Explain **one** weakness of the structure of the brain as an explanation of human aggression.

(2)

Brain structure is not a complete explanation of aggression as it ignores the role of the environment. Social learning theory shows that aggression can be learned by observing and imitating aggressive role models, eg Bandura et al. (1961), so people with a normal pre-frontal cortex and amygdala can still be aggressive, making the explanation reductionist.

(Total for Question 1 = 3 marks)

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2 Kazuhito investigated the effects of caffeine on participants' brain activity. He used an fMRI scan to measure the same participants' brain activity on two different days.

On day one participants did not drink any caffeinated coffee before their fMRI scan. On day two the participants drank three cups of caffeinated coffee before their fMRI scan.

(a) State a fully operationalised non-directional (two-tailed) experimental hypothesis for the investigation carried out by Kazuhito.

(2)

There will be a difference in participants' brain activity, as measured by an fMRI scan, after drinking three cups of caffeinated coffee (day two) compared with not drinking any caffeinated coffee (day one).

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(b) Explain **one** strength and **one** weakness of Kazuhito using an fMRI scan in his investigation.

(4)

Strength

The fMRI scan gives objective, quantitative data showing blood flow (oxygen use) in each area of the brain with and without the caffeinated coffee, so it is not open to Kazuhito's interpretation and other researchers could check the scans and get the same results, making his findings reliable.

Weakness

Participants with metal implants such as a pacemaker could not have an fMRI scan, so they would be excluded from Kazuhito's study and his results about the effects of caffeine on brain activity could not be generalised to them. Lying still in the noisy scanner may also make participants anxious, affecting brain activity.

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Kazuhito also asked the participants to rate how alert they felt each day on a scale of 1 to 7, with 1 being a score of not alert and 7 being a score of highly alert. He carried out a Wilcoxon signed ranks test on his data where N=11 and found a calculated value of 12.

(c) Justify, using a two-tailed test at $p \leq 0.05$, whether Kazuhito found a significant difference in his investigation.

The formulae and statistical tables can be found at the front of the paper.

(2)

For N = 11 on a two-tailed test at p ≤ 0.05 the critical value is 10. The calculated value of 12 is higher than the critical value of 10, and for Wilcoxon it must be equal to or less than the critical value, so Kazuhito did not find a significant difference in how alert participants felt after no caffeinated coffee compared with three cups of caffeinated coffee. He must accept the null hypothesis.

(Total for Question 2 = 8 marks)

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3 In biological psychology you will have learned about one of the following contemporary studies in detail.

- McDermott (2008).
- Hoefelmann et al. (2006).

Chosen study

McDermott (2008)

(a) Describe the results and/or conclusion(s) of your chosen contemporary study.

(4)

Participants who had their money taken in the high take condition (80% taken) gave more hot sauce to their opponent than those in the low take condition. When only 20% of their earnings were taken, only 39% of participants gave hot sauce to their opponent. Participants with the low activity MAOA gene (MAOA-L) were more aggressive than those with the high activity gene, but mainly when they were highly provoked. McDermott concluded that people become more aggressive towards the person responsible for a provocation as the provocation increases. It was also concluded that genes interact with the environment, as low or high MAOA alone did not predict aggression; it was the combination of the MAOA-L gene and high provocation that led to more aggression.

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(b) Explain **one** strength and **one** weakness of your chosen contemporary study.

(4)

Strength

Aggression was measured quantitatively by the amount of hot sauce the participants chose to give to their opponent, so McDermott did not have to interpret whether the behaviour was aggressive. This makes the data objective and the study easy to replicate, increasing reliability.

Weakness

Participants were deceived, as they did not know their opponent was not real and believed they were harming a real person who disliked spicy food. This breaks the ethical guideline on deception and could affect how participants see themselves afterwards, so the study could be considered unethical.

(Total for Question 3 = 8 marks)

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4 Xavi carried out an experiment to investigate whether the number of siblings (brothers and sisters) affected aggression. He gathered a stratified sample from a local business and split the participants into two conditions.

- Condition A: participants with one sibling.
- Condition B: participants with two or more siblings.

(a) Describe how Xavi may have gathered his stratified sample.

(3)

First Xavi would identify the strata in his target population, the employees of the local business, eg those with one sibling and those with two or more siblings, and also males and females. He would work out the proportion of employees in each stratum, eg 40% with one sibling and 60% with two or more. He would then randomly select participants from each stratum (eg names drawn from a hat) so that his sample contains the same proportions as the business, eg 8 with one sibling and 12 with two or more in a sample of 20.

(b) Explain **one** improvement Xavi could make to his sample of participants.

(2)

Xavi could also select participants from other businesses in different areas and with different types of jobs, as this would make his sample more representative of the wider population, so his results about siblings and aggression would be more generalisable.

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Xavi calculated the mean and median number of aggressive acts for Condition A. His results are shown in **Table 1**.

	Mean number of aggressive acts in a month	Median number of aggressive acts in a month
Condition A: participants with one sibling	5.4	3.2

Table 1

Xavi did not have a normal distribution of results.

(c) State, using the data in **Table 1**, how Xavi knew he did not have a normal distribution of results for Condition A.

(1)

The mean of 5.4 is much higher than the median of 3.2, but in a normal distribution the mean and median would be the same, so his data is (positively) skewed.

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The results from Xavi's experiment for Condition B are shown in **Table 2**.

Participant	Number of aggressive acts in a month
A	5
B	7
C	3
D	5
E	3
F	4
G	7
H	1
I	5
Mode =	*5*

Table 2

(d) Calculate the mode for Condition B and complete **Table 2** with your answer.

(1)

Space for calculations

In order: 1, 3, 3, 4, 5, 5, 5, 7, 7

5 occurs three times, more than any other score, so mode = 5

(Total for Question 4 = 7 marks)

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5 Julianne is a manager at a factory. She is responsible for introducing night work at the factory.

Julianne wants to make it as easy as possible for the employees to adjust their sleep-wake cycle to working at night. She has carried out some research and found that lighting levels, shift patterns and eating habits all have an effect on how people adjust to working during the night.

Discuss how Julianne could use this information about the sleep-wake cycle to help the employees adjust to working during the night.

You must refer to the context in your answer.

(8)

The sleep-wake cycle is a circadian rhythm of about 24 hours controlled by the suprachiasmatic nucleus (SCN), an endogenous pacemaker in the hypothalamus. The SCN is reset each day by external zeitgebers, mainly light. When it gets dark the pineal gland releases more melatonin, which makes us feel sleepy, and bright light suppresses melatonin so we feel alert. Food can also act as an external zeitgeber, as most people have a large meal towards the end of their day. Zeitgebers do not reset the rhythm immediately, as it takes time for the circadian rhythm to resynchronise.

Julianne could therefore use lighting levels by installing bright lights that mimic sunlight in the factory during the night shift. This would suppress the employees' melatonin so they feel alert while working. When they go home in the morning they should wear sunglasses and sleep in a dark room with blackout blinds, so melatonin is released during the day and they can sleep.

For shift patterns, because it takes time for the rhythm to adjust, Julianne should keep the same employees on permanent night work rather than rotating them, so the zeitgebers stay constant and their rhythms can fully adapt. If shifts must rotate, she should rotate them forwards (day, then evening, then night) and change them slowly, eg every three weeks, as phase delay is easier than phase advance; Czeisler et al. (1982) found this improved workers' health and satisfaction.

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For eating habits, Julianne could offer the employees a large meal towards the end of their shift, in the early hours of the morning, rather than a light breakfast, so food signals the end of their "day" and works together with the light changes. However, employees may struggle to keep this pattern on days off when they return to family life, so their rhythms may never fully adjust.

(Total for Question 5 = 8 marks)

TOTAL FOR SECTION A = 34 MARKS

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SECTION B

LEARNING THEORIES AND DEVELOPMENT.

Answer ALL questions. Write your answers in the spaces provided.

6 Stijn is seven months old. His parents have bought him a new toy which he likes to put in his mouth. His sister, Lieke, is four years old. She does not like spending time with her mother and says she does not like Stijn.

(a) Identify which psychosexual stage of development Stijn is in according to Freud.

(1)

Stijn is in the oral stage (0 to 18 months), as he likes putting the new toy in his mouth.

(b) Describe, using Freud's psychosexual stages, the behaviour Lieke may show.

(4)

Lieke is four years old so she is in the phallic stage (3 to 6 years), where the focus of pleasure is the genitals, so she may play with her genitals. She will be going through the Electra complex: she experiences penis envy and develops unconscious feelings for her father, so she may want to be with him all the time. She sees her mother as a rival for her father's affection, which is why she does not like spending time with her mother. Lieke may also be jealous of Stijn for taking up her father's time, so she says she does not like him and may be aggressive towards him, eg hitting him. Eventually she should identify with her mother.

(Total for Question 6 = 5 marks)

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7 Nika conducted an observation with children during their first year at school. She observed the children's interactions at school with each other and with their teachers.

Nika collected qualitative data during her observation.

(a) Describe how Nika may have recorded the qualitative data she collected during her observation.

(2)

Nika may have written detailed notes of what the children said to each other and to their teachers, using their exact words where possible. She may also have described their non-verbal communication, eg facial expressions, gestures and who they played with.

(b) Describe how Nika could ensure her observation was reliable.

(2)

Nika could ask another observer to watch the same children's interactions at the same time, independently. If the other observer records similar interactions to Nika, her observation has inter-observer reliability.

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Nika decided to turn her qualitative data into quantitative data.

(c) Describe how Nika could have converted her qualitative data into quantitative data.

(3)

Nika would first read through her notes and decide on themes from her data, eg helping another child, sharing, arguing or asking a teacher for help. She would then create a tally chart with these themes and go through her observations of the children, putting a tally each time an interaction fitting a theme occurred. Finally, she would count up the total number of times each theme occurred, giving quantitative data that could be compared, eg in a bar chart.

(Total for Question 7 = 7 marks)

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8 In learning theories and development you will have learned about Skinner's (1948) Superstition in the pigeon study.

(a) Describe the procedure of Skinner (1948) Superstition in the pigeon.

(4)

Skinner used 8 hungry pigeons, which were kept at 75% of their normal body weight by limiting their food. Each pigeon was put individually into an experimental cage for a few minutes each day. The cage contained a food hopper, and a timer released food from the hopper at regular intervals of 15 seconds, regardless of what the pigeon was doing, so the reinforcement did not depend on its behaviour. Two observers independently recorded the pigeons' behaviour in relation to the food hopper and agreed on what they saw. The interval was later lengthened for one pigeon, and the food was then stopped to see how long the behaviour took to extinguish.

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(b) Explain **one** strength and **one** weakness of Skinner (1948) Superstition in the pigeon, in terms of ethical considerations.

(4)

Strength

Skinner used only 8 pigeons, so he kept the number of animals used to a minimum. This is in line with the Animals (Scientific Procedures) Act (1986), which states the smallest number of animals needed for the research should be used.

Weakness

The pigeons were kept at 75% of their normal body weight, so they would have been hungry and may have been distressed. This can be seen as unethical as researchers should use other ways of motivating animals than food deprivation where possible.

(Total for Question 8 = 8 marks)

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9 (a) Explain **two** strengths of generalising the results and/or conclusions from animal experiments to humans.

(4)

1 *The central nervous system of animals such as rats is very similar to that of humans, with the same brain structures and neurotransmitters, so a physical response found in animals can be generalised to humans as it will involve similar biological processes.*

2 *Some experiments, such as brain lesioning, can be done on animals but would be unethical on humans. Generalising these results means psychological knowledge of human brain functioning can be advanced, eg the role of the SCN in the sleep-wake cycle (Ralph et al., 1990).*

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(b) Justify why animal experiments could be considered more reliable than human experiments.

(2)

Researchers can have more control over extraneous variables with animals, eg their food, drink, environment and past experiences can all be controlled so they do not affect the results. This means the procedure can be replicated exactly with the same conditions, so consistent results are more likely, increasing reliability.

(Total for Question 9 = 6 marks)

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10 Assess the usefulness of classical conditioning as an explanation of human behaviour.

(8)

Classical conditioning explains how we learn a reflexive response to a previously neutral stimulus. An unconditioned stimulus (UCS) that produces an unconditioned response (UCR) is repeatedly paired with a neutral stimulus (NS), until the NS alone produces the response; it becomes a conditioned stimulus (CS) producing a conditioned response (CR). Pavlov (1927) found that sounding a metronome before feeding dogs led the dogs to salivate at the sound of the metronome alone. Watson and Rayner (1920) used it to explain phobias, conditioning Little Albert to fear a white rat by pairing it with a loud noise.

Classical conditioning is useful as it is based on observable reflexes that can be measured, eg drops of saliva, so it is more scientific than Freud's theory, which relies on unobservable unconscious processes. It also has practical applications. Systematic desensitisation treats phobias by associating relaxation with the feared object, and Capafóns et al. (1998) found it reduced fear of flying, showing classical conditioning explains at least some human behaviour.

However, much of the evidence comes from animals, eg Pavlov's dogs, and humans are more complex, with thinking and free will, so the findings may not generalise. Classical conditioning only explains reflexive behaviour, not how we learn new voluntary behaviours, which operant conditioning and social learning theory explain better, so it is not a complete explanation. It is also reductionist, ignoring cognition and biology: not everyone who has a frightening experience develops a phobia, and Seligman (1970) suggested we are biologically prepared to fear some objects more than others. Little Albert was a single child, so the findings are hard to generalise.

Overall, classical conditioning is a useful, scientific explanation of some human behaviours, such as phobias and emotional responses, and has led to effective therapies, but it is limited because

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it cannot explain voluntary, complex behaviour, so it needs to be combined with other explanations.

(Total for Question 10 = 8 marks)

TOTAL FOR SECTION B = 34 MARKS

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Section C

Answer ALL questions. Write your answers in the spaces provided.

11 Evaluate research into the circadian sleep-wake cycle.

(12)

Research into the circadian sleep-wake cycle has used case studies, experiments and animal studies. Siffre (1972) spent around six months in a cave with no natural light or clocks, and found that his sleep-wake cycle became free-running, averaging about 24.5 hours. This suggests that an endogenous pacemaker controls the cycle but that light, an external zeitgeber, is needed to keep it to 24 hours.

A strength of the case study method is that Siffre's rhythm was tested over a long period, giving a detailed, in-depth understanding that a short experiment could not. However, it was a single person, and his sleep patterns may have been unusual, so the results may not generalise. He also had artificial light in the cave, which may have affected his rhythm, reducing validity. Even so, the findings are useful, as they show light affects the sleep-wake cycle, which employers can use to help night shift workers adjust.

Folkard et al. (1985) used an experiment in which participants' clock was gradually adjusted to a 22-hour cycle, and 11 of the 12 participants changed their sleep-wake cycle to the 22-hour cycle, suggesting external cues can override the internal clock. The controlled environment allows cause and effect to be established, but it is artificial, so the results may not reflect everyday sleeping patterns. It also used only 12 participants, and individual differences, eg being more likely to conform to instructions about when to sleep, may have affected the findings.

Ralph et al. (1990) transplanted the SCN from mutant hamsters with a 20-hour cycle into normal hamsters, whose sleep-wake cycle then changed to the length of the donor hamster's. This shows the SCN is the main endogenous pacemaker. Using animals allows research that

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could not ethically be done on humans, gaining more knowledge of the biology of the cycle. However, hamsters' brains are less complex than humans', so generalisation is limited, and the procedure raises ethical issues about harm to the animals.

Stothard et al. (2017) found that, without electric light, the human sleep-wake cycle adapts to the length of the night depending on whether it is summer or winter. This has high ecological validity as it was done in a natural setting. However, they measured melatonin levels before and after the time without electric light, which is not necessarily measuring when participants actually went to sleep or woke up.

In conclusion, research using different methods consistently supports the idea that the sleep-wake cycle is controlled by an endogenous pacemaker, the SCN, which is reset by light. Although each method has weaknesses, such as small samples and artificial settings, the agreement between case studies, experiments and animal research increases confidence in the conclusions.

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(Total for Question 11 = 12 marks)

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12 Alejandro and Katerina work at a local sleep clinic.

A patient who has depression has recently come to the clinic. The patient is constantly tired, finds it hard to get out of bed and lacks the motivation to carry out everyday activities. The patient is also having difficulties with personal relationships.

When assessing the patient, it was found that these symptoms had developed over the winter months. The patient also stated they had experienced a troubled childhood, and felt they were not loved by their parents.

Alejandro thinks light therapy should be used to treat the patient, whilst Katerina thinks that psychoanalysis would be more effective.

To what extent would light therapy and psychoanalysis be effective treatments for Alejandro's and Katerina's patient?

You must refer to the context in your answer.

(16)

As the patient's symptoms, tiredness, difficulty getting out of bed and lack of motivation, developed over the winter months, they may be suffering from seasonal affective disorder (SAD), a type of depression linked to shorter daylight hours. Light therapy treats SAD by simulating natural sunlight using a light box giving bright white or blue light. The patient sits near the light box for around 30 minutes when they get up in the morning, which decreases the levels of melatonin released, reducing tiredness. Some light boxes gradually increase the level of light so it is more like a natural dawn.

Light therapy should be effective for Alejandro's patient, as reducing melatonin in the morning would make them more alert, so they would find it easier to get out of bed and be motivated to carry out everyday activities. Reeves et al. (2012) found light therapy was effective, as self-report scores for depression fell after just one session, and Meesters et al. (2018) found that blue light and white light boxes were equally effective in reducing the symptoms of SAD. Light therapy is also quick to work, cheap, and the patient can use it at home, which suits someone who lacks motivation. However, it may cause side effects such as headaches or eye strain, and the patient must use it every day throughout the winter. It also only treats the symptoms, not any underlying cause, so it would not help with the patient's difficulties in

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personal relationships.

Psychoanalysis is a talking therapy that aims to gain insight into unconscious processes through free association and dream analysis. In free association the client says whatever comes to mind without interruption, allowing the analyst to explore issues from childhood. The client may transfer feelings about their parents onto the analyst (transference), who reflects on their own response (counter-transference).

Psychoanalysis may suit the patient as they had a troubled childhood and felt unloved by their parents. Katerina may ask the patient to talk about their childhood and use any hesitations to understand their repressed feelings about not being loved, and analyse her own response to the patient to gain insight into their relationship with their parents. This could explain their difficulties with personal relationships, as early relationships may affect later ones. Fonagy et al. (2015) found psychoanalytic therapy was more effective than usual treatment for depression 42 months after treatment, suggesting long-lasting benefits. Psychoanalysts would argue that light therapy only works in the short term because it does not deal with the underlying reasons for the depression.

However, psychoanalysis can take months or years to be effective, so light therapy may reduce the depressive symptoms faster. As the patient lacks motivation and finds it hard to get out of bed, they may not engage with the therapy or attend regular sessions, making it less effective. It is also expensive, and recalling a troubled childhood may cause distress. Its concepts, such as the unconscious, are hard to test scientifically, so evidence for its effectiveness is weaker than for light therapy.

Overall, light therapy would be the more effective treatment in the short term, as the winter

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onset strongly suggests SAD and the evidence shows it reduces symptoms quickly. However, it would not address the patient's childhood experiences or relationship difficulties, so psychoanalysis could be useful in the long term. The most effective approach would be to use light therapy first to improve the patient's energy and motivation, so that they are then able to engage with psychoanalysis.

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(Total for Question 12 = 16 marks)

TOTAL FOR SECTION C = 28 MARKS
TOTAL FOR PAPER = 96 MARKS

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