Write your name here

Surname: StemUp Model Solution | Other names:

Pearson Edexcel
International Advanced Level

Centre Number | Candidate Number

Psychology

International Advanced Level
Paper 3: Applications of Psychology

Thursday 18 January 2018 – Afternoon
Time: 1 hour 30 minutes

Paper Reference
WPS03/01

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 in Section A, and **ALL** questions from **EITHER** Option 1 criminological psychology **OR** option 2 health psychology.
- Answer the questions in the spaces provided
  – *there may be more space than you need.*

Information

- The total mark for this paper is 64.
- 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

DEVELOPMENTAL PSYCHOLOGY

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

1 Lorenzo is three months old and he cries when he is hungry. His mother feeds him, comforts him and she is rewarded with a happy baby.

Describe, using learning theory, how an attachment between Lorenzo and his mother could be formed.

Learning theory (Dollard and Miller) says attachment is learned through conditioning. Through operant conditioning, the food Lorenzo's mother gives him satisfies his hunger, so food is a primary reinforcer. Being fed and comforted removes the unpleasant feeling of hunger, which negatively reinforces his crying, and the comfort makes him feel good, which is positive reinforcement. Because his mother is always present when he is fed, she becomes associated with food and so becomes a secondary reinforcer. Through classical conditioning, food (UCS) produces pleasure (UCR), and the mother (NS) is paired with food until she alone (CS) produces pleasure (CR). Lorenzo becomes attached to his mother because she is a source of reward.

(Total for Question 1 = 4 marks)

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2 A researcher studied 60 infants at monthly intervals from birth to 18 months old. The infants were all studied in their own home.

The age at which the infants showed their first specific attachment is recorded in **Table 1**.

Age of first specific attachment	Number of infants
5–6 months	4
7–8 months	30
9–11 months	20
Over 11 months	6

Table 1

(a) Give **one** conclusion that could be made from this study.

You **must** refer to the data in **Table 1**.

(2)

30 of the 60 infants (50%) formed their first specific attachment at 7 to 8 months, and 54 of 60 (90%) had done so by 11 months, while only 4 (about 7%) did so at 5 to 6 months. Therefore specific attachments tend to form in the second half of the first year, most often at 7 to 8 months.

(b) Explain **one** strength of naturalistic observation as a research method used in developmental psychology.

(2)

Naturalistic observation takes place in the child's natural setting, such as the infants' own homes, so the situation is not artificial. This increases ecological validity, because the researcher sees how children really behave with their caregivers in everyday life, so the findings can be generalised to real life.

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(c) The researcher used a longitudinal research method for their investigation.

Explain **one** weakness of using longitudinal research in developmental psychology.

(2)

Longitudinal studies can have a high dropout rate, as over 18 months some families may move house or lose interest. This attrition means the remaining sample may be less representative of the target population, for example only the most committed families remain, which reduces the generalisability of the findings.

(Total for Question 2 = 6 marks)

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3 Shakila is a nurse on a children's ward in a hospital. She researched the attachment types of infants aged 12 to 18 months using the strange situation procedure.

(a) Suggest how Shakila could obtain a random sample of ten infants from the children's ward.

(2)

Shakila could put the names of all the infants aged 12 to 18 months on the children's ward into a container and draw out ten names without looking, so that every infant on the ward has an equal chance of being chosen. She would then ask their parents for consent.

(b) Justify the use of a random sample instead of a volunteer sample in developmental psychology.

(2)

A random sample is likely to be more representative of the target population than a volunteer sample, because volunteers are parents who are interested in research and choose to take part. They may share characteristics, eg very confident parents with securely attached infants, so the sample is biased.

(c) Explain how a parent may show demand characteristics in the strange situation procedure.

(2)

A parent may change their behaviour to meet the perceived expectations of the researcher, for example guessing that their bond is being judged. They may be more attentive and warm to their child than usual during the reunion, so the attachment type recorded may not be valid or reliable.

(Total for Question 3 = 6 marks)

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4 Evaluate Vygotsky's zone of proximal development (ZPD) as an explanation of cognitive and language development.

(8)

Vygotsky described the zone of proximal development (ZPD) as the gap between what a child can achieve on their own and what they can achieve with help from a more knowledgeable other (MKO), such as a teacher, parent or more skilled peer. Within the ZPD the MKO provides scaffolding, for example demonstrating a concept, giving hints or breaking a task into steps, guiding the child through a skill until they can do it alone, when the support is gradually removed. Vygotsky believed learning is social first and then internalised, so language is central: mastering speech requires socialisation with adults and peers, and speech later becomes inner speech that the child uses to guide their own thinking.

There is research support. Dunn and Munn (1987) found that social interaction in play enhances cognitive development, giving evidence that scaffolding by others helps children learn. Wood, Bruner and Ross (1976) found that tutors who adjusted their help to the child's level helped children build a block pyramid, supporting the idea of scaffolding within the ZPD. The theory also has practical applications in education, such as peer tutoring and teachers pitching tasks just beyond a child's current level, which strengthens its validity.

However, the ZPD is an internal process that cannot be directly observed or empirically measured, so it is hard to test and the theory is less scientific. It is also hard to define exactly where a child's ZPD begins and ends, so it is vague. Chomsky argued that language is innate, with a language acquisition device that predisposes children to acquire grammar, so Vygotsky may overemphasise socialisation in language development. Piaget also argued that children learn by actively exploring on their own and that development passes through biological stages, so some learning can happen without an MKO.

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In conclusion, the ZPD is a useful, well-supported explanation of how social interaction and scaffolding help cognitive and language development, and it has clear benefits in education. However, because it is hard to test and underplays innate and individual factors, it is best seen as part of the explanation alongside biological maturation.

(Total for Question 4 = 8 marks)

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5 Assess the use of primary and secondary data to investigate children's social and emotional development in developmental psychology.

You **must** refer to research evidence within your answer.

(8)

Primary data is gathered first hand by the researcher for the purpose of their study, for example by observing or experimenting on children. Secondary data has already been collected by someone else for another purpose, such as medical or school records or the results of previous studies. Studying children directly may require exposing them to experimental conditions, and consent for primary research with children must be obtained from their parents.

Primary data allows researchers to control what is measured. Ainsworth and Bell (1970) used the strange situation procedure to gather primary observational data, which led to a better understanding of secure, avoidant and resistant attachment types; this would not have been possible through secondary data. However, primary research can be unethical. Bandura, Ross and Ross (1961) exposed children to aggressive role models to study social development, which may have caused emotional harm, and Watson and Rayner (1920) conditioned fear in Little Albert even though his mother gave consent.

Secondary data avoids these problems, as no child is exposed to new conditions and consent was gained at the time of the original research. It is also quick and cheap to analyse large amounts of data. Van IJzendoorn and Kroonenberg (1988) carried out a meta-analysis of 32 strange situation studies from eight countries, so secondary data was useful for comparing emotional development across cultures. However, the researcher has no control over how the original data was collected, so it may be biased, outdated or not fully relevant, and the quality of a meta-analysis depends on the studies included.

Overall, primary data is more valid and specific to the research aim but raises ethical issues,

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whereas secondary data is more ethical and allows wider comparisons but is less controlled.

Using both gives the best understanding of children's social and emotional development.

(Total for Question 5 = 8 marks)

TOTAL FOR SECTION A = 32 MARKS

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SECTION B

Answer ALL questions from EITHER
OPTION 1: CRIMINOLOGICAL PSYCHOLOGY or OPTION 2: HEALTH PSYCHOLOGY.

Indicate which option you are answering by marking a cross in the box ☒. If you change your mind, put a line through the box ☒ and then indicate your new option with a cross ☒.

If you answer the questions in Option 1 put a cross in the box ☒ .

OPTION 1: CRIMINOLOGICAL PSYCHOLOGY

6 Kris was a participant in an experiment. Over a ten-day period he watched 20 violent television programmes. He then completed an interview about his levels of aggression. It was found that Kris' levels of aggression had increased.

Describe how social learning theory may account for the increase in Kris' levels of aggression.

Kris may have identified with the violent characters in the 20 programmes and seen them being rewarded for their aggression, so they received vicarious reinforcement. He paid attention to and retained the behaviour, so he was motivated to imitate it, increasing his aggression.

(Total for Question 6 = 2 marks)

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7 Researchers assigned 40 offenders randomly to either a treatment group or a control group to test the effects of therapy on reoffending.

- Group A: Cognitive behavioural therapy (CBT).
- Group B: Control group.

The offenders were contacted one year after the research was completed in order to establish the rate of reoffending. The results are shown in **Table 2**.

Group	CBT	Control Group	Rate of reoffending
A	✔		25%
B		✔	80%

Table 2

(a) State **one** conclusion that could be made using the information in **Table 2**.

(1)

CBT reduced reoffending; only 25% of the CBT group reoffended compared with 80% of the control group, a reduction of 55 percentage points.

(b) Calculate the number of offenders who reoffended, using the information in **Table 2**.

(1)

Space for calculations

40 offenders ÷ 2 groups = 20 in each group

CBT group: 25% of 20 = 0.25 × 20 = 5

Control group: 80% of 20 = 0.80 × 20 = 16

5 + 16 = 21

Number of offenders who reoffended *21*

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(c) The researchers made sure they followed the ethical guidelines from the British Psychological Society (BPS) Code of Ethics and Conduct (2009) when undertaking their research into offender treatment programmes.

Describe **one** ethical guideline that the researchers would have considered in their research into offender treatment programmes.

(2)

The researchers would need informed consent: they must tell the offenders the aim of the treatment programme research and what each group involves, and ask the offenders to agree to take part, making it clear they have the right to withdraw at any time.

(d) Justify **two** reasons why the researchers may have breached ethical guidelines when conducting their research into offender treatment programmes.

(4)

1 *Offenders may not have been able to withdraw if the CBT was a requirement of their sentence. This breach could be justified because the benefit to society of finding an effective treatment that reduces reoffending outweighs the ethical concerns.*

2 *The control group were not given CBT, so they may have been harmed if their offending was left untreated. However, this is justified as a no-treatment control group is needed to show CBT works, and their decision to reoffend is their own choice rather than caused by the study.*

(Total for Question 7 = 8 marks)

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8 Grazvydas and Hanna conducted research to investigate the link between the prevalence of offending by age and sex. They asked 100 males and 50 females, aged between 12 and 19 years, to complete a self-report questionnaire.

The results for the percentage of males who have offended are shown by age, in **Figure 1**.

A bar chart to show the percentage of males who have offended, by age

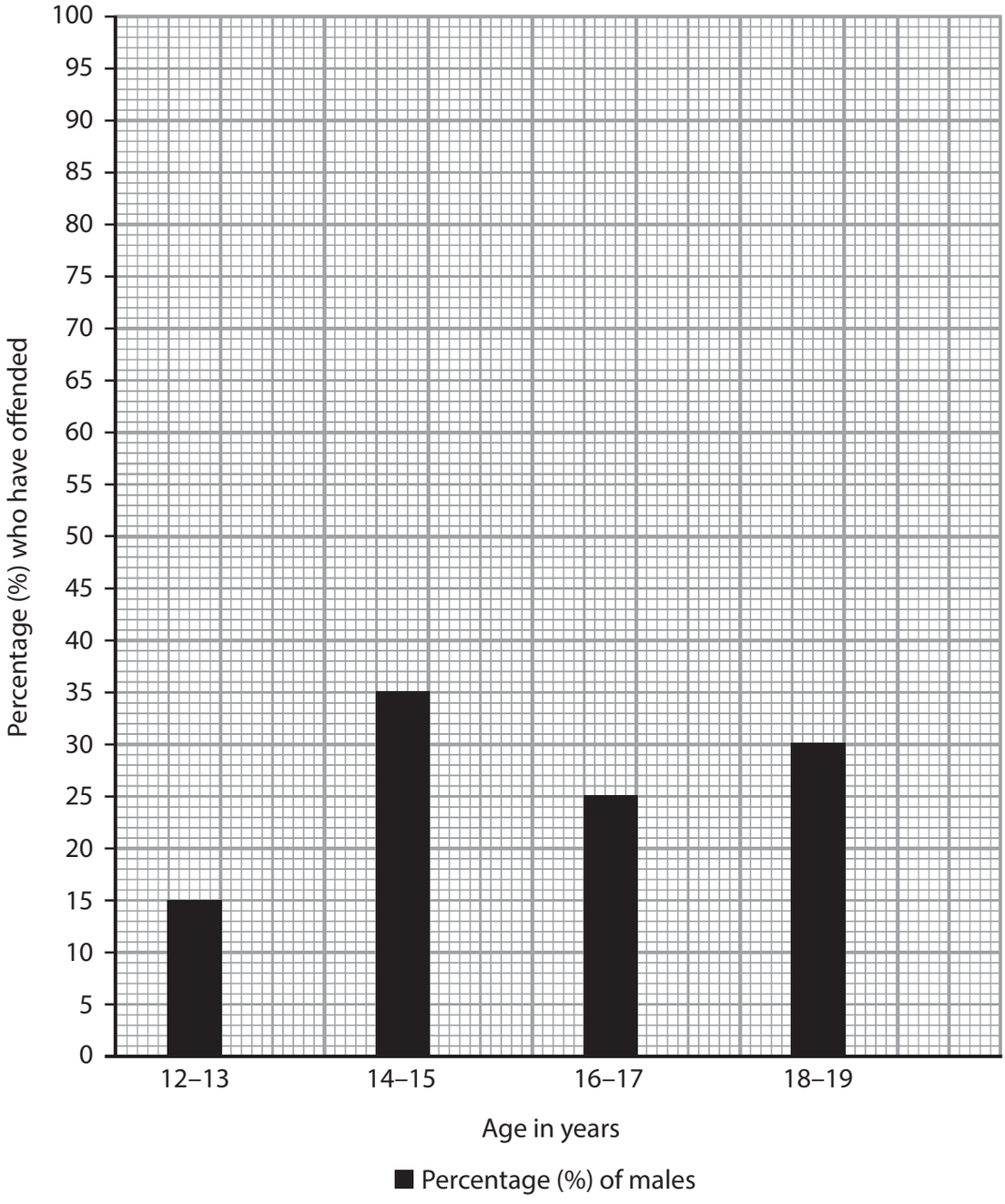


Figure 1

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(a) (i) Complete **Table 3** using the information provided in the bar chart shown in **Figure 1**.

(2)

Age in years	Number of males who have offended	Number of females who have offended
12–13	15	5
14–15	35	15
16–17	25	10
18–19	30	5

Table 3

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(ii) Complete the bar chart in **Figure 2** below to illustrate the percentage of females who have offended, using the data in **Table 3**.

(1)

A bar chart to show the percentage of males and the percentage of females who have offended, by age

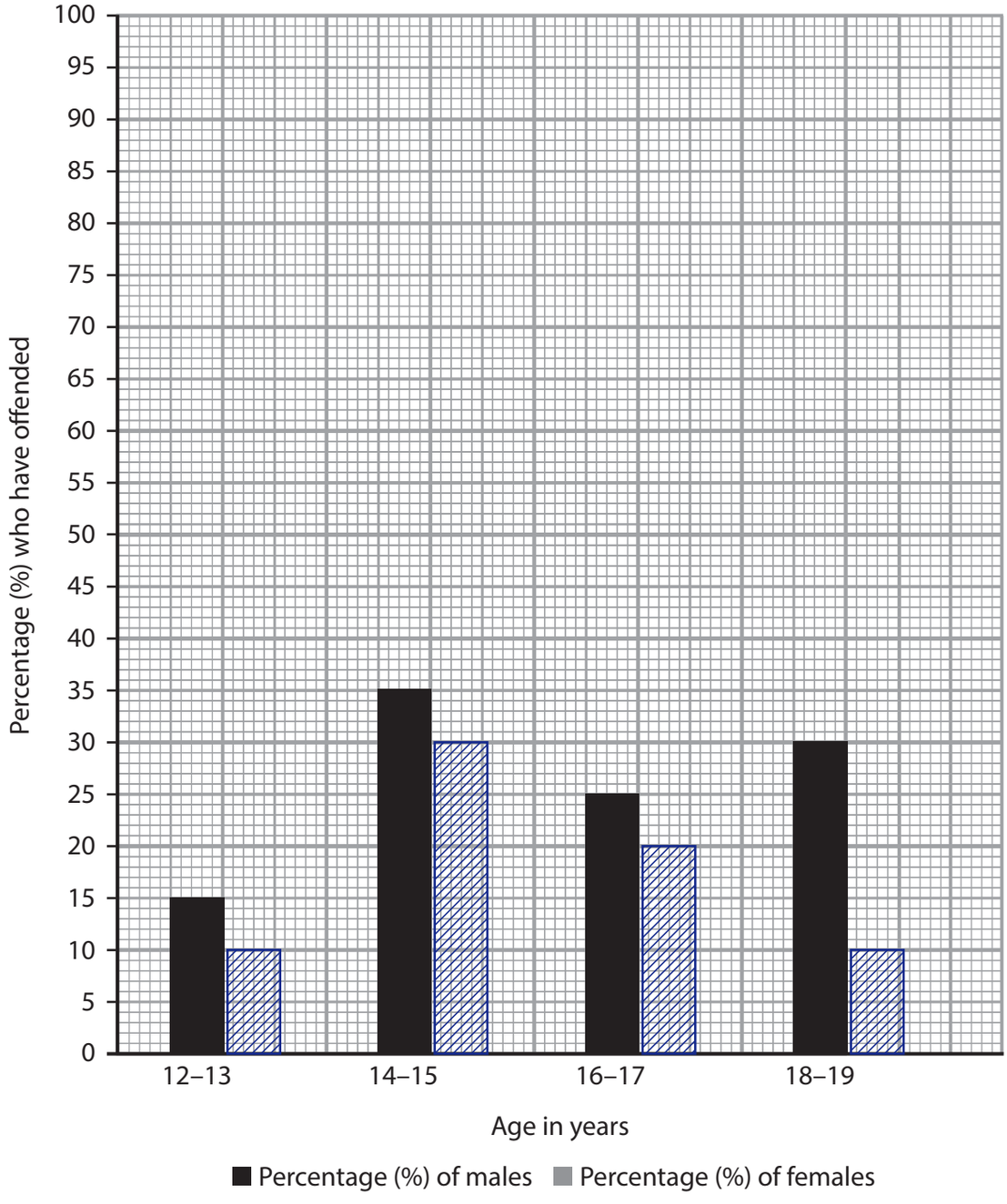


Figure 2

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(b) Explain **one** weakness of using self-report questionnaires in Grazvydas and Hanna's research.

(2)

Offending is a sensitive topic, so the 12 to 19 year olds may have wanted to please Grazvydas and Hanna and answered falsely, eg denying offences out of social desirability, or teenage boys exaggerating to look tough. Therefore any conclusions about offending by age and sex become invalid due to inaccurate data.

(c) Suggest **one** way Grazvydas and Hanna could improve the validity of their study.

(1)

They could use open questions so participants can describe their offending behaviour in their own words and in detail, giving richer, more valid qualitative data.

(Total for Question 8 = 6 marks)

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9 Evaluate the reliability of eyewitness memory.

(8)

Eyewitness memory is often unreliable because memory is reconstructive and can be distorted by several factors. Leading questions and post-event information can change what a witness recalls. Weapon focus means that when a criminal uses a weapon, the witness's attention is drawn to the weapon rather than the criminal's face. People are also less able to recognise faces from a different ethnic background to their own (own-race bias), and if there is a long delay between the incident and recall, details are likely to be forgotten.

Loftus and Palmer (1974) showed participants films of car crashes and found that changing one verb in the question changed recall: participants asked how fast the cars were going when they 'smashed' estimated a mean of 40.5 mph, compared with 31.8 mph for 'contacted', and were more likely to falsely report broken glass a week later. This shows eyewitness memory is unreliable as it can be altered by question wording. Loftus et al. (1987) found participants had worse recall of a customer's face when he held a weapon than when he held a cheque, supporting weapon focus. Meissner and Brigham (2001) found in a meta-analysis that false identifications were more common for other-race faces, showing an own-race bias that reduces accuracy.

However, much of this evidence comes from laboratory studies, which lack ecological validity because participants know no real crime has happened and the consequences of their answers are unimportant. Yuille and Cutshall (1986) studied 13 real witnesses of a shooting in Canada and found their accounts were highly accurate about 5 months later and that they resisted leading questions, so eyewitness memory of real crime can be reliable. Their sample was small, however, so it may not generalise to all witnesses.

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Overall, eyewitness memory can be unreliable, especially for peripheral details, other-race faces and when leading questions are used, but in real crimes central details can be remembered accurately, so its reliability depends on the conditions of the event and how the witness is interviewed.

(Total for Question 9 = 8 marks)

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10 Assess anti-social personality disorder (ASPD) as an explanation of crime and anti-social behaviour.

(8)

Anti-social personality disorder (ASPD) is a personality disorder diagnosed in adults who show a pervasive disregard for the rights of others, with conduct problems before age 15. Features include deceitfulness, impulsivity, aggression, recklessness, irresponsibility and lack of remorse, so people with ASPD are more likely to commit crime and anti-social behaviour. ASPD is thought to be an innate pathology caused by brain abnormalities, especially in the prefrontal cortex, which controls impulses, and the amygdala, which processes emotion and fear.

There is evidence to support this. Raine et al. (2000) found an 11% reduction in prefrontal grey matter in men with ASPD compared with controls. Yang (2008) found that anti-social individuals had impaired amygdala-hippocampal systems in the brain, so ASPD can be linked to criminal behaviour through reduced emotional responses such as a lack of fear of punishment. This means the explanation is scientific and can be tested with brain scans.

However, the evidence is correlational, so brain differences could be caused by other factors such as head injury or drug use. The explanation is also circular, since ASPD is partly diagnosed from anti-social behaviour and then used to explain it, and many offenders do not have ASPD. Labelling someone as pathologically criminal could lead to a self-fulfilling prophecy, so the label itself may cause the criminal behaviour.

Alternative explanations exist. Social learning theory suggests criminal and anti-social behaviour is learned from role models. Anderson and Dill (2000) found a correlation between playing violent video games and increased aggression, suggesting anti-social behaviour can result from the media rather than ASPD. Freud claimed that the death instinct, Thanatos, and unresolved psychosexual stages in childhood explain aggressive and criminal behaviour, so it is not

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necessarily a personality disorder.

In conclusion, ASPD can explain some crime, especially impulsive and violent offending by a minority of persistent offenders, but it cannot explain all crime, so an interactionist explanation combining biological and social factors is more complete.

(Total for Question 10 = 8 marks)

TOTAL FOR SECTION B OPTION 1 = 32 MARKS

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SECTION B

If you answer Option 2 put a cross in the box ☒ .

OPTION 2: HEALTH PSYCHOLOGY.

11 Lauren works in a call centre, where she takes customer calls for a large multinational company. The calls she receives can be for advice, complaints or general questions which makes her role unpredictable.

Lauren has chosen to work nights, but the call centre is still very crowded and can be noisy. Her workload can vary considerably with some nights being very busy.

Identify **two** factors that could cause Lauren stress in her workplace.

1 *The unpredictability of the calls, eg advice or complaints, so she has little control.*

2 *The crowded, noisy call centre environment and her workload varying from night to night.*

(Total for Question 11 = 2 marks)

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12 Andreas and Mikhael conducted a meta-analysis of research into causes of stress. They reviewed 60 research studies that had all tested the effect of stress triggers on stomach acidity levels in non-human participants.

They presented the data from their meta-analysis of the studies in **Table 4**.

Change in stomach acidity level	Percentage of studies
Significant increase	55%
No significant increase	25%
No change	10%
No significant decrease	5%
Significant decrease	5%

Table 4

(a) State **one** conclusion that could be made using the data in **Table 4**.

(1)

Stress triggers increased stomach acidity in 80% of studies (55% + 25%), with 55% finding a significant increase, so stress triggers tend to increase stomach acidity.

(b) Calculate the number of studies that found no significant increase in stomach acidity levels using the information in **Table 4**.

(1)

Space for calculations

25% of 60 studies

= 0.25 × 60

= 15

Number of studies that found no significant increase *15*

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The use of non-human animals in the psychological research that Andreas and Mikhael reviewed would have been required to meet the Animals (Scientific Procedures) Act 1986.

(c) Describe **one** of the requirements the researchers would have considered when conducting research into the effects of stress triggers using non-human animals.

(2)

The researchers must minimise the suffering of the animals, as the Act requires licences and that pain and distress are kept to a minimum. For example, they must make sure the stomach acidity levels do not reach dangerous levels, such as causing ulcers, and stop the procedure if the animals show severe distress.

(d) Justify **two** reasons why the researchers may have chosen to use non-human animals for their studies of stress triggers and stomach acidity.

(4)

1 *The animals were exposed to stress triggers that would cause distress to human participants. This could not be done with humans because the BPS Code of Ethics and Conduct (2009) protects participants from harm, which prevents this kind of research into stomach acidity in humans.*

2 *Animals are less affected by extraneous variables, such as diet or other life stressors, that could affect stomach acidity. They are housed in controlled laboratory conditions, which strengthens cause and effect conclusions between stress triggers and stomach acidity.*

(Total for Question 12 = 8 marks)

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13 Rebekah and Caleb conducted research to investigate the link between health and lifestyle characteristics using a standardised questionnaire. They asked 100 male students and 50 female students to complete the questionnaire.

As part of their study, they recorded the percentage of males and females showing negative lifestyle characteristics.

The results for the percentage of males who reported negative lifestyle characteristics are shown in **Figure 3**.

A bar chart to show the percentage of males who reported negative lifestyle characteristics

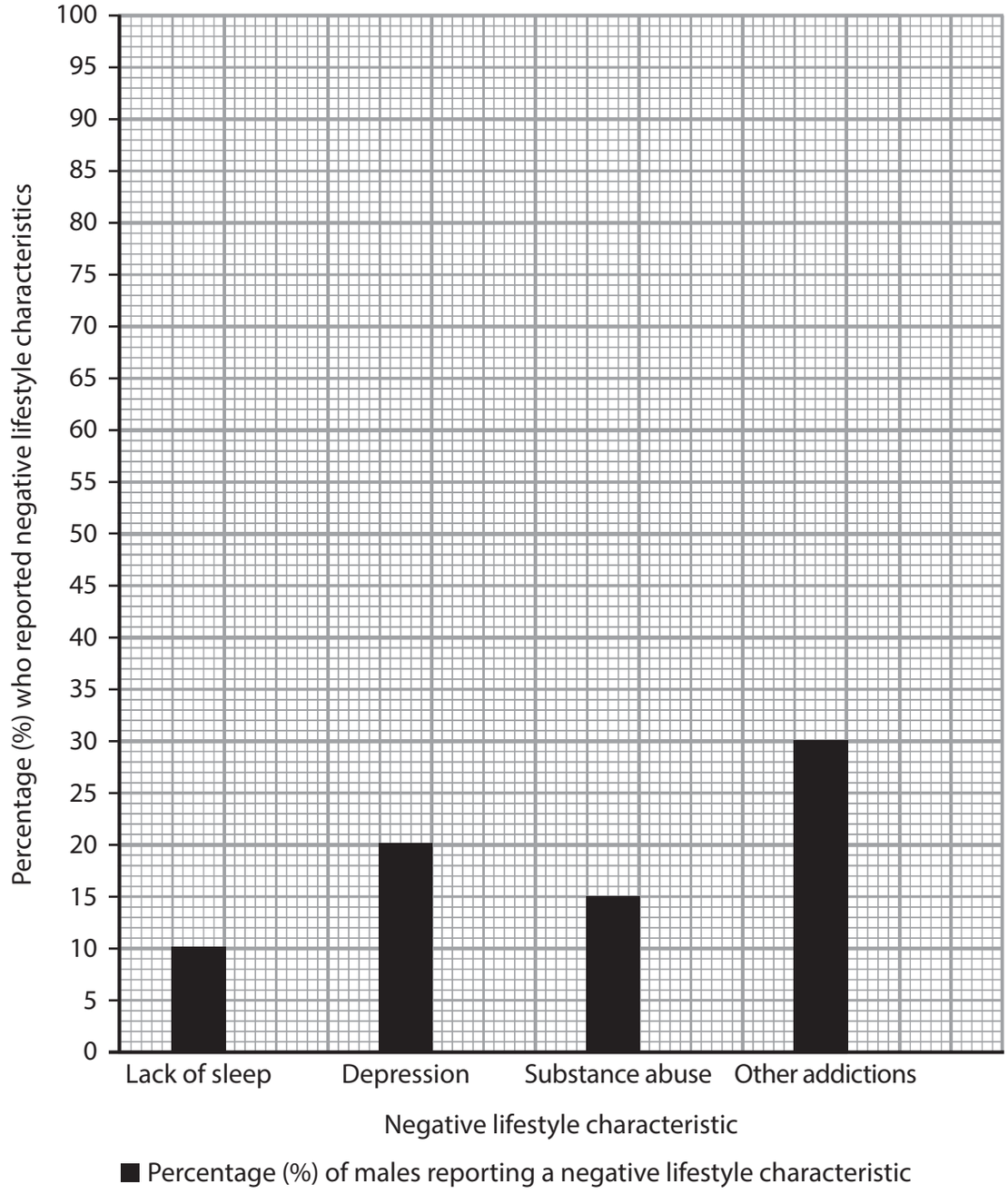


Figure 3

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(a) (i) Complete **Table 5** using the information provided in the bar chart shown in **Figure 3**.

(2)

Negative lifestyle characteristic	Number of males	Number of females
Lack of sleep	*10*	10
Depression	*20*	15
Substance abuse	*15*	5
Other addictions	*30*	20

Table 5

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(ii) Complete the bar chart in **Figure 4** below to illustrate the percentage of females who showed negative lifestyle characteristics, using the data in **Table 5**.

(1)

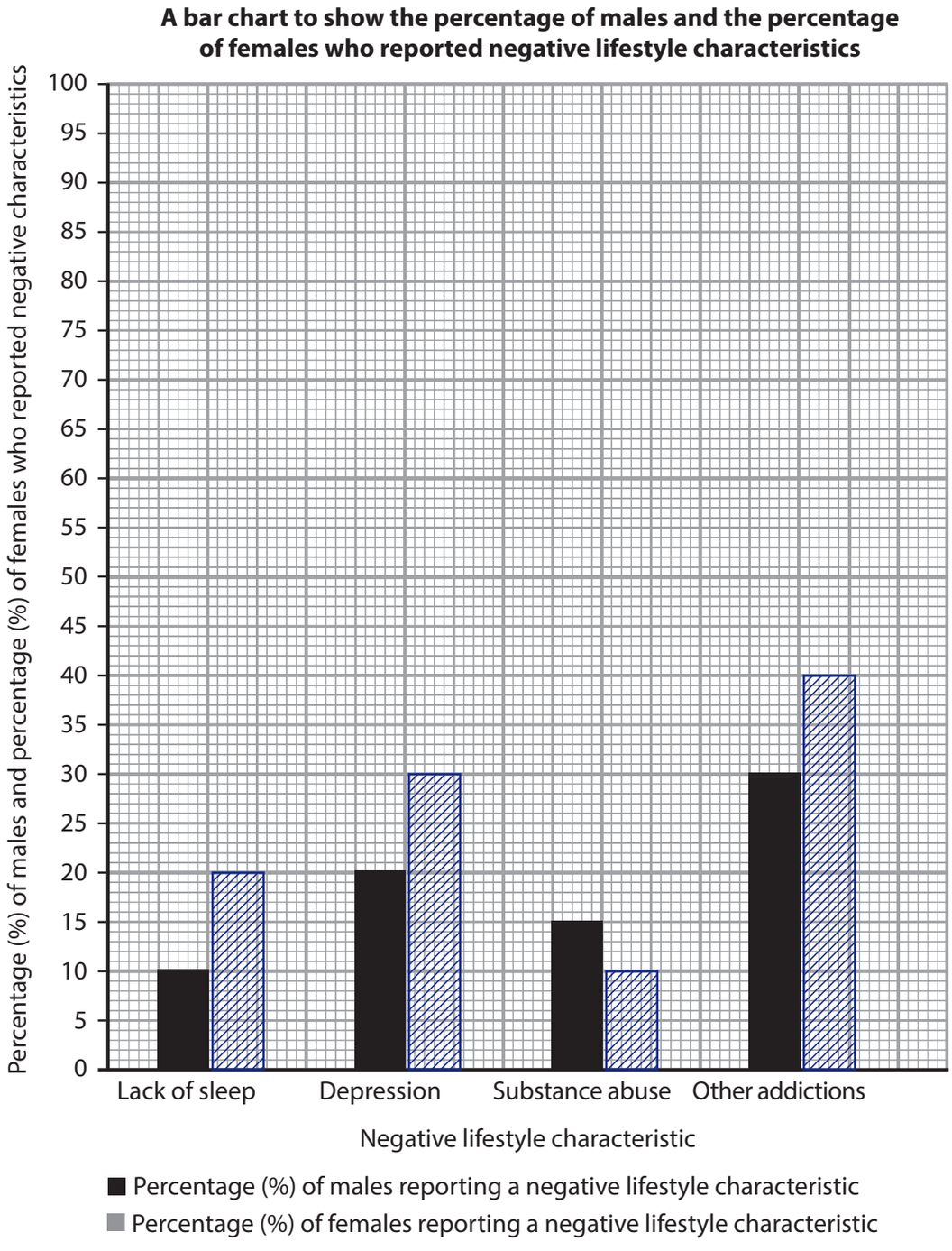


Figure 4

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(b) Explain **one** weakness of using standardised questionnaires in Rebekah and Caleb's research.

(2)

Students may give false answers about sensitive lifestyle characteristics such as depression or substance abuse because of social desirability, wanting to appear healthy. This would reduce the validity of the data gathered about the link between health and lifestyle.

(c) Suggest **one** way Rebekah and Caleb could improve the validity of their study.

(1)

They could add open questions so students can describe their lifestyle characteristics in their own words and in detail.

(Total for Question 13 = 6 marks)

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14 Evaluate Selye's General Adaptation Syndrome (GAS) as an explanation of stress.

(8)

Selye's General Adaptation Syndrome (GAS) describes the body's general response to any prolonged stressor in three stages. In the alarm stage the person registers a threat and there is a hormonal change: the hypothalamus activates the sympathetic nervous system and adrenal medulla, releasing adrenaline for fight or flight. In the resistance stage, if the stressor continues, the HPA axis releases cortisol so the body can cope, but resources are being used up. Exhaustion occurs if the body is repeatedly stressed or the stress is long lasting, and the body's defences break down, leading to stress-related illness such as ulcers. Selye's evidence came mostly from studies of rats exposed to stressors such as cold and injury.

The explanation has supporting evidence. Brady (1958) found that 'executive' monkeys exposed to repeated stress developed ulcers, physically deteriorated and began to die, supporting the exhaustion stage. Rodrigues et al. (2009) suggested that stress hormones alter neural structures associated with emotion, so Selye's explanation has biological and scientific credibility. The model also has practical value, since it explains why long-term stress is linked to illness.

However, much of the supporting research used animals, such as rats and monkeys, and animals may not represent human responses to stress, so the findings may not generalise to humans. GAS is also reductionist, as it ignores psychological factors. Cognitive psychologists would explain stress as the result of negative and faulty thought patterns and how a person appraises a situation. Beck and Weishaar (2010) used cognitive techniques to treat faulty thinking and cognitive bias, showing cognitive factors can cause stress, so it may not be a result of GAS. The model also assumes the same response to every stressor and ignores individual differences, such as gender or personality.

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In conclusion, GAS is a useful biological explanation of how prolonged stress affects the body and leads to illness, but because it relies on animal research and ignores cognitive appraisal, it is incomplete as an explanation of human stress.

(Total for Question 14 = 8 marks)

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15 Assess the effectiveness of biological treatments and therapies for anxiety.

(8)

Biological treatments assume anxiety is a physiological condition caused by, for example, neurotransmitter dysfunction or overactivity of the sympathetic nervous system. Symptoms of anxiety include irritability, difficulty concentrating, sleep disturbance and a racing heart. Drug treatments such as SSRIs and SNRIs increase the availability of serotonin (and noradrenaline) at synapses and have been found to be effective in treating anxiety. Benzodiazepines increase the calming effect of GABA, and beta-blockers block the effects of adrenaline on the heart, reducing physical symptoms.

There is evidence that these treatments are effective. Soomro (2009) found that SSRIs reduce the severity of anxiety symptoms, so biological treatments are effective. They act quickly, are easy to take and need little effort from the patient. Managing symptoms helps a patient cope with day to day life, allowing them to function and find ways to deal with their anxiety triggers, so they can be effective in practice.

However, drugs only treat the symptoms, not the cause of the anxiety, so symptoms may return when the drugs are stopped. Tyrer and Baldwin (2006) suggest that anti-anxiety treatments can result in dependency and have significant side effects, such as drowsiness with benzodiazepines, so their effectiveness is reduced. They also found that alternatives such as cognitive behavioural therapy (CBT) are equally as effective as biological treatments. CBT is non-invasive, has no physical side effects and teaches skills that may prevent relapse, so ethically a non-invasive option should be offered to patients before drugs are considered.

Overall, biological treatments are effective in the short term for reducing the severity of anxiety symptoms, but because of dependency, side effects and relapse they are less effective in the

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long term, so they work best combined with a psychological therapy such as CBT.

(Total for Question 15 = 8 marks)

TOTAL FOR SECTION B OPTION 2 = 32 MARKS
TOTAL FOR PAPER = 64 MARKS

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