GradeMax



Mark Scheme (Results)

January 2101

Pearson Edexcel International Advanced Subsidiary
In Psychology (WPS02/01)
Paper 1: Biological Psychology, Learning Theories and Development

Edexcel and BTEC Qualifications

Edexcel and BTEC qualifications are awarded by Pearson, the UK's largest awarding body. We provide a wide range of qualifications including academic, vocational, occupational and specific programmes for employers. For further information visit our qualifications websites at www.edexcel.com or www.btec.co.uk. Alternatively, you can get in touch with us using the details on our contact us page at www.edexcel.com/contactus.

Pearson: helping people progress, everywhere

Pearson aspires to be the world's leading learning company. Our aim is to help everyone progress in their lives through education. We believe in every kind of learning, for all kinds of people, wherever they are in the world. We've been involved in education for over 150 years, and by working across 70 countries, in 100 languages, we have built an international reputation for our commitment to high standards and raising achievement through innovation in education. Find out more about how we can help you and your students at: www.pearson.com/uk

January 2101
Publications Code WPS02_01_2101_MS
All the material in this publication is copyright
© Pearson Education Ltd 2021

Section A

Question Number	Answer	Mark
1 (a)	**AO1 (1 mark)** Credit **one** mark for accurate definition. For example: • An infradian rhythm is a biological rhythm that lasts for more than 24 hours (1). **Look for other reasonable marking points.**	**(1)**

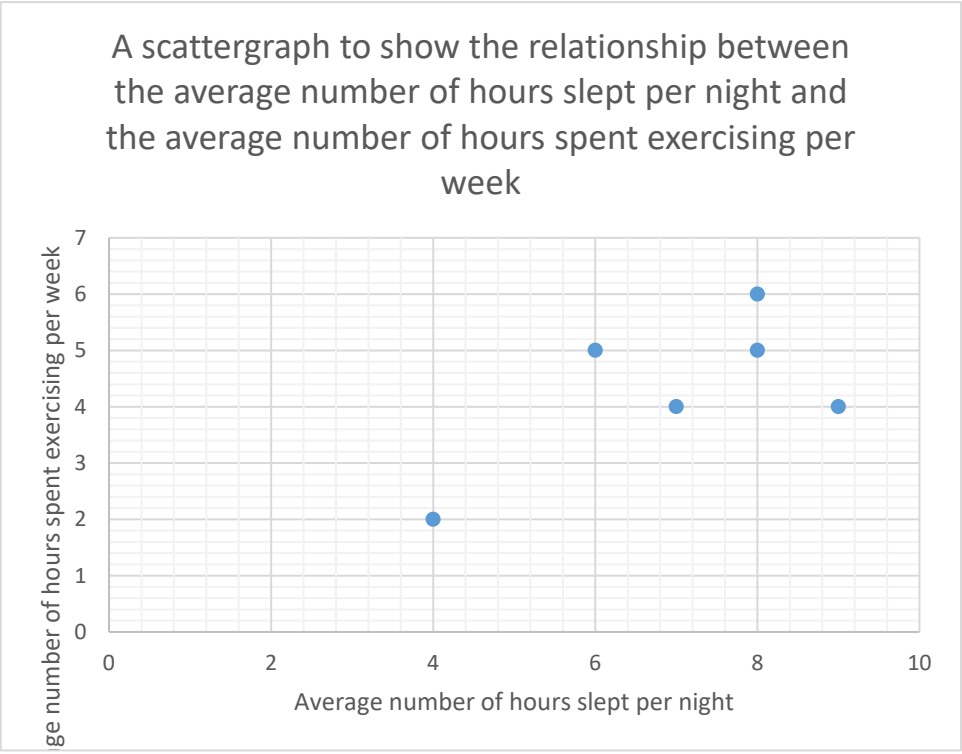
Question Number	Answer	Mark
1 (b)	**AO1 (1 mark), AO3 (1 mark)** Credit **one** mark for accurate identification of one weakness (AO1) Credit **one** mark for justification/ exemplification of one weakness (AO3) For example: • Infradian rhythms can be seen as incomplete as it focuses on biological processes therefore it ignores other factors that may affect human behaviour (1), such as being aggressive during our menstrual cycle because we have observed and imitated others' aggression during their menstrual cycle rather than being a bodily rhythm (1). **Look for other reasonable marking points.**	**(2)**

Question Number	Answer	Mark
2(a)	**AO1 (4 marks)** Credit up to **four** marks for accurate description. For example: • Some research uses the correlational methods to determine if there is a relationship between hormones and aggression (1). Chang et al. (2012) found a positive correlation between aggression and testosterone in fish (1). Some research measures the level of hormones such as testosterone in saliva when researching the role of testosterone in aggression (1). Okhlopkova et al. (2018) found increased levels of cortisol and testosterone in males with pronounced levels of aggression (1). **Look for other reasonable marking points.**	**(4)**

Question Number	Answer	Mark
2(b)	**AO1 (2 marks), AO3 (2 marks)** Credit **one** mark for accurate identification of a strength and weakness (AO1) Credit **one** mark for justification/exemplification of the strength and weakness (AO3) For example: Strength: • Experimental research into the roles of hormones could be deemed scientific as it is empirical and uses observable data (1), for example they measure the amounts of hormones such as testosterone and the number of specific aggressive acts which is objective and unbiased (1). Weakness: • Research such as Chang et al. (2012) is conducted with animals so the results may not be representative of aggression in humans (1), as humans have more complex thinking patterns that may mediate their aggressive responses results from animal experiments may not be generalisable (1). **Look for other reasonable marking points.** **Generic answers score 0 marks.**	**(4)**

Question Number	Answer	Mark
3(a)	**AO2 (1 mark), AO3 (1 mark)** Credit **one** mark for accurate identification of significance in relation to scenario (AO2) Credit **one** mark for justification/ exemplification of significance (AO3) For example: • Juana found there was not a significant difference in brain activity when resting and when shown aggressive pictures (1), as the calculated value (12) is higher than the critical value of 10 when N=11 (1). **Look for other reasonable marking points.**	**(2)**

Question Number	Answer	Mark
3(b)	**AO2 (1 mark), AO3 (1 mark)** Credit **one** mark for accurate identification of strength in relation to scenario (AO2) Credit **one** mark for justification/ exemplification of strength (AO3) For example: • Juana should have exact copies of the computer images showing the brain activity when the participants saw the aggressive pictures (1), this makes it easier for other researchers to look at the same images of when the participants saw aggressive pictures and check Juana's results are accurate increasing reliability (1). **Look for other reasonable marking points.** **Generic answers score 0 marks.**	**(2)**

Question Number	Answer	Mark
4 (ai)	**AO2 (3 marks)** Credit **one** mark for appropriate title. Credit **one** mark for appropriate labelling of axes. Credit **one** mark for correct plots. For example:  **Look for other reasonable marking points.**	**(3)**

Question Number	Answer	Mark
4(aii)	**AO2 (1 mark)** Credit **one** mark for accurate statement in relation to the scatter diagram. For example: • Ferdinand found a positive correlation between the average number of hours slept per night and the average number of hours spent exercising per week (1). **Look for other reasonable marking points.**	**(1)**

Question Number	**Answer**	**Mark**
4(b)	**AO2 (1 mark), AO3 (1 mark)** Credit **one** mark for accurate identification of improvement (AO2) Credit **one** mark for justification/ exemplification of improvement (AO3) For example: • Ferdinand could ask his participants to wear a device which will measure the time they actually sleep rather than ask them how long they slept for (1), this will give more accurate results about the number of hours spent sleeping and so will make his results more valid (1). **Look for other reasonable marking points.** **Generic answers score 0 marks**.	**(2)**

Question Number	Answer	Mark
5(a)	**AO2 (3 marks)** Credit up to **three** marks for accurate description in relation to scenario. For example: • The family could have the MAOA-L gene which could have been inherited from the father by the children explaining why they are all aggressive (1). Those MAOA-L have increased levels of certain neurotransmitters which regulate aggression, so the two children fight each other (1). The father may have an extra Y chromosome which is thought to be linked to aggression so this could explain why he shouts at the children (1). **Look for other reasonable marking points.** **Generic answers score 0 marks**.	**(3)**

Question Number	Answer	Mark
5(b)	**AO2 (1 mark), AO3 (1 mark)** Credit **one** mark for accurate identification of a weakness in relation to scenario (AO2) Credit **one** mark for justification/ exemplification of the weakness (AO3) For example: • The MAOA gene in the children is not enough on its own to cause the aggression and fighting between the children as there needs to be an adverse environment as well (1). Therefore, genes in isolation do not fully explain why the children fight each other as it focuses on nature and excludes the nurture that also needs to be present (1). **Look for other reasonable marking points.** **Generic answers score 0 marks**.	**(2)**

Question Number	Indicative content	Mark
6	**AO1 (4 marks), AO3 (4 marks)** **AO1** • People affected by SAD should sit in front of a light box for around 30 to sixty minutes each morning depending on the light box used. • A dawn simulating box could be used, that gradually brightens the light in the room. • A full spectrum light box could be used, or a box that emits a specific bandwidth of blue light. • The box should emit 10,000 lux and be about 41 to 61 centimetres from the face and to be used daily. **AO3** • People who have eye problems or take some antibiotics cannot use light therapy due to the effect of the light on the eyes so it is not an effective treatment for everyone. • Danilenko et al. (2015) found that dawn simulators were almost as effective as bright light boxes with depression scores reducing by 42.2% showing that different types of light therapy are effective. • Patients who had cognitive behavioural therapy compared to light therapy had fewer depressive episodes two winters later compared to light therapy, so CBT may be better in the long term (Rohan et al. 2015). • Light therapy usually works after 1 to 2 weeks as reported in Avery et al. (2001), so may be better than other psychotherapies which can take longer to be effective.	**(8)**

Level	Mark	Descriptor
AO1 (4 marks), AO3 (4 marks) Candidates must demonstrate an equal emphasis between knowledge and understanding vs evaluation/conclusion in their answer.		
	0	No rewardable material.
Level 1	1-2 Marks	Demonstrates isolated elements of knowledge and understanding. (AO1) A conclusion may be presented, but will be generic and the supporting evidence will be limited. Limited attempt to address the question. (AO3)
Level 2	3-4 Marks	Demonstrates mostly accurate knowledge and understanding. (AO1) Candidates will produce statements with some development in the form of mostly accurate and relevant factual material, leading to a superficial conclusion being made. (AO3)
Level 3	5-6 Marks	Demonstrates accurate knowledge and understanding. (AO1) Arguments developed using mostly coherent chains of reasoning leading to a conclusion being presented. Candidates will demonstrate a grasp of competing arguments but evaluation may be imbalanced. (AO3)
Level 4	7-8 Marks	Demonstrates accurate and thorough knowledge and understanding. (AO1) Displays a well-developed and logical evaluation, containing logical chains of reasoning throughout. Demonstrates an awareness of competing arguments, presenting a balanced conclusion. (AO3)

Section B

Question Number	Answer	Mark
7	**AO1 (2 marks)** Credit up to **two** marks for accurate description. For example: • Primary reinforcement is a reward for a behaviour that satisfies a basic need (1). For example, a child receives food it likes after putting their toys away (1). **Look for other reasonable marking points.**	**(2)**

Question Number	Answer	Mark
8 (a) (i)	**AO2 (1 mark)** Credit **one** mark for accurate identification in relation to scenario. For example: • Xuanye used a random sample as each child in the village had an equal chance of being a participant (1). **Look for other reasonable marking points.** **Generic answers score 0 marks**	**(1)**

Question Number	Answer	Mark
8 (a) (ii)	**AO2 (1 mark), AO3 (1 mark)** Credit **one** mark for accurate identification of one strength relation to the scenario (AO2) Credit **one** mark for justification/ exemplification of the strength (AO3) For example: • As all the four-year-olds have an equal chance of being picked the sample is more objective and less biased than if Xuanye had chosen the four-year-olds himself (1), as he would not have been able to choose children that he knew would change their behaviour after gaining a reward so his results would be more valid (1). **Look for other reasonable marking points.** **Generic answers score 0 marks**	**(2)**

Question Number	Answer	Mark
8 (b)	**AO2 (3 marks)** Credit **one** mark for accurate **substitution into formulae** $\sqrt{\frac{48}{6-1}}$ Credit **one** mark for correct calculation of **dividing the sum of the differences² by (n-1)** = $\sqrt{9.6}$ Credit **one** mark for correct answer for **standard deviation** = 3.1 **Look for other reasonable marking points.**	**(3)**

Question Number	Answer	Mark
9 (a)	**AO2 (4 marks)** Credit up to **four** marks for accurate description in relation to the practical investigation. For example: • Before we carried out the observation we categorised toys into non-aggressive toys, such as dolls, and aggressive toys such as swords (1). We then observed a video of girls and boys playing with toys that we found on You Tube (1). The first toy a child played with we noted down on our tally chart whether it was an aggressive or non-aggressive toy (1). We then watched the video for a second time and noted down what the children were saying when they played with the aggressive and non-aggressive toys (1). **Look for other reasonable marking points.** **Generic answers score 0 marks.** **Answers must relate to the learning theories and development practical of an observation that gathered qualitative and quantitative data.**	**(4)**

Question Number	Answer	Mark
9 (b)	**AO2 (1 mark), AO3 (1 mark)** Credit **one** mark for accurate identification of a strength in terms of validity in relation to the practical investigation (AO2) Credit **one** mark for justification/exemplification of the strength in terms of validity (AO3) For example: • Four of us watched the same video of the children playing at their nursery so this has ecological validity as the children were in their natural setting (1), which meant the children's behaviour would have been realistic and the children would have played with aggressive and non-aggressive toys that they usually play with at the nursery (1). **Look for other reasonable marking points.** **Generic answers score 0 marks** **Answers must relate to the learning theories and development practical of an observation that gathered qualitative and quantitative data.**	**(2)**

Question Number	Answer	Mark
9 (c)	**AO2 (1 mark), AO3 (1 mark)** Credit **one** mark for accurate identification of an improvement in relation to practical investigation (AO2) Credit **one** mark for justification/exemplification of the improvement (AO3) For example: • We should have kept stopping the video when the children were talking to write down exactly what they were saying (1), this would mean that we had all the data available and so would increase reliability if people wanted to repeat our observation as they would get the same qualitative data (1). **Look for other reasonable marking points.** **Generic answers score 0 marks** **Answers must relate to the learning theories and development practical of an observation that gathered qualitative and quantitative data.**	**(2)**

Question Number	Answer	Mark
10 (a)	**AO1 (4 marks)** Credit up to **four** marks for accurate description For example: • Object relations therapy is based on the idea that past relationships with significant others affect present relationships (1). Relationships from our childhood unconsciously form our standards about relationships in the present (1). Object relations therapy aims to bring these unconscious ideas about relationships into the conscious so the client can gain an insight into their current behaviour (1). To do this the therapist needs to gain the trust of the client and show that they are listening so the client feels safe talking about their past relationships (1). **Look for other reasonable marking points.**	**(4)**

Question Number	Answer	Mark
10 (b)	**AO1 (1 mark), AO3 (1 mark)** Credit **one** mark for accurate identification of a weakness (AO1) Credit **one** mark for justification/exemplification of the weakness (AO3) For example: • Object relations therapy may not be effective for some disorders such as depression where clients may not be motivated to engage with the therapist, so other treatments may be better (1), so drug treatments may be better as the client does not need to talk about their past relationships with the clinician for the treatment to be effective (1). **Look for other reasonable marking points.**	**(2)**

Question Number	Answer	Mark
11	**AO1 (2 marks), AO3 (2 marks)** Credit **one** mark for accurate identification of each weakness (AO1) Credit **one** mark for justification/exemplification of each weakness (AO3) For example: • Classical conditioning only explains how we learn new reflexes, it does not explain how we learn new voluntary behaviour (1), unlike operant conditioning which explains how reinforcements teach new voluntary behaviours, so reducing the validity of it as an explanation of learning (1). • Classical conditioning focuses on nurture and ignores other explanations for behaviour such as biological explanations (1), therefore the theory may not be a complete explanation of human behaviours such as aggression which reduces its credibility (1). **Look for other reasonable marking points.**	**(4)**

Question Number	Indicative content	Mark
12	**AO1 (4 marks), AO3 (4 marks)** **AO1** • Capafóns et al. (1998) aimed to investigate whether systematic desensitisation was an effective treatment for the fear of flying. • A sample of 41 volunteers were randomly allocated, 20 to the treatment group and 21 to the control group. • A variety of measurements were used to measure fear of flying including the EMV to measure anxiety. • The results showed that there was a significant difference in fear of flying between the treatment group and control group, with the treatment groups having less fear of flying. **AO3** • The systematic desensitisation used videos to treat the participants so is may not have been a valid measurement fear when actually in an aeroplane. • As participants were randomly allocated to the treatment group it means there was no bias in deciding who got the treatment, so reducing participant variables which can increase validity. • The measurements used, such as EMV, are measurements that have been used before and other researchers can use them to replicate the study so increasing reliability. • Participants had between 12 and 15 sessions, so this may have affected the reliability of the results, as the number of sessions would impact on the reduction of the fear of flying. **Look for other reasonable marking points.**	**(8)**

Level	Mark	Descriptor
AO1 (4 marks), AO3 (4 marks) Candidates must demonstrate an equal emphasis between Knowledge and understanding vs assessment/conclusion in their answer.		
	0	No rewardable material.
Level 1	1–2 Marks	Demonstrates isolated elements of knowledge and understanding. (AO1) Generic assertions may be presented. Limited attempt to address the question. (AO3)
Level 2	3–4 Marks	Demonstrates mostly accurate knowledge and understanding. (AO1) Candidates will produce statements with some development in the form of mostly accurate and relevant factual material, leading to a generic or superficial assessment being presented. (AO3)
Level 3	5–6 Marks	Demonstrates accurate knowledge and understanding. (AO1) Arguments developed using mostly coherent chains of reasoning, leading to an assessment being presented which considers a range of factors. Candidates will demonstrate understanding of competing arguments/factors but unlikely to grasp their significance. The assessment leads to a judgement but this may be imbalanced. (AO3)
Level 4	7–8 Marks	Demonstrates accurate and thorough knowledge and understanding. (AO1) Displays a well-developed and logical assessment, containing logical chains of reasoning throughout. Demonstrates an awareness of the significance of competing arguments/factors leading to a balanced judgement being presented. (AO3)

Section C

Question Number	Indicative content	Mark
13	**AO1 (4 marks), AO2 (4 marks), AO3 (4 marks)** **AO1** • Freud states children develop in five stages, the oral, anal, phallic, latent and genital stages. • If a child does not successfully resolve a stage, then they become fixated this can affect their adult personality. • During the phallic stage males go through the Oedipus complex where they unconsciously desire their mother and fear their father. • The mind is made up of the conscious, preconscious and unconscious, which is the largest part of our mind and motivates our behaviour. **AO2** • Philippe is 27 years old so he should be in the genital stage where he gratifies his desires through relationships with the opposite sex. • Philippe may be fixated in the oral stage as he has started smoking due to his relationship failing. • Philippe may not have successfully resolved the Oedipus complex as his partner thought he was looking for a mother figure rather than a partner. • Philippe may unconsciously be causing arguments in relationships, as he denies that he is causing them deliberately. **AO3** • A criticism of Freud's theory of development is that he only studied one child, and the rest of his data came from adults and retrospectively used this to develop his theory of development. • Fisher and Greenberg (1996) carried out a meta-analysis and found that there was evidence of an oral personality with over-eating being one-way people sought to gain oral gratification. • Freud (1909) stated that Little Hans' fear of horses was unconsciously a fear of his father as he was going through the Oedipus complex. • Freud's theory can be deemed unscientific as it is hard to find empirical, directly observable, evidence for unconscious processes so may not explain behaviour as well as other scientific, theories. **Look for other reasonable marking points.**	**(12)**

Level	Mark	Descriptor
AO1 (4 marks), AO2 (4 marks), AO3 (4 marks) Candidates must demonstrate an equal emphasis between knowledge and understanding vs application vs evaluation/conclusion in their answer.		
	0	No rewardable material.
Level 1	1-3 Marks	Demonstrates isolated elements of knowledge and understanding. (AO1) Provides little or no reference to relevant evidence from the context (scientific ideas, processes, techniques & procedures). (AO2) A conclusion may be presented, but will be generic and the supporting evidence will be limited. Limited attempt to address the question. (AO3)
Level 2	4-6 Marks	Demonstrates mostly accurate knowledge and understanding. (AO1) Line(s) of argument occasionally supported through the application of relevant evidence from the context (scientific ideas, processes, techniques & procedures). (AO2) Candidates will produce statements with some development in the form of mostly accurate and relevant factual material, leading to a superficial conclusion being made. (AO3)
Level 3	7-9 Marks	Demonstrates accurate knowledge and understanding. (AO1) Line(s) of argument supported by applying relevant evidence from the context (scientific ideas, processes, techniques & procedures). Might demonstrate the ability to integrate and synthesise relevant knowledge. (AO2) Arguments developed using mostly coherent chains of reasoning leading to a conclusion being presented. Candidates will demonstrate a grasp of competing arguments but evaluation may be imbalanced. (AO3)
Level 4	10-12 Marks	Demonstrates accurate and thorough knowledge and understanding. (AO1) Line(s) of argument supported throughout by sustained application of relevant evidence from the context (scientific ideas, processes, techniques or procedures). Demonstrates the ability to integrate and synthesise relevant knowledge. (AO2) Displays a well-developed and logical evaluation, containing logical chains of reasoning throughout. Demonstrates an awareness of competing arguments, presenting a balanced conclusion. (AO3)

Question Number	Indicative content	Mark
14	**AO1 (6 marks), AO2 (4 marks) AO3 (6 marks)** **AO1** • A role model is someone that has certain characteristics such as having power or being attractive. • Because the role model is important to the observer the behaviour will be paid attention to and retained in the memory. • If the model is reinforced, then the observer is more likely to imitate the behaviour of the role model. • If the pre-frontal cortex is damaged it may stop the delay of gratification, meaning aggression may increase. • Damage to the pre-frontal cortex makes people more impulsive as decision making is negatively affected. • If there is decreased functioning of the pre-frontal cortex, then reactive aggression may take place in situations where it is unwarranted. **AO2** • The female lead in the martial arts film will have power as she will use her martial arts to gain victory over her opponents. • Henrietta may see the fame gained by the female lead as a reinforcer, so she will copy the actions she saw in the film. • Henrietta may not think about the consequences of throwing a book at her brother and throws it on impulse. • Henrietta threw a drink over a customer as she was reacting aggressively to the complaint about the service. **AO3** • Anjum et al. (2019) found that there was a significant positive relationship between how authoritarian parents were and levels of aggression so it may not just be social learning theory that caused Henrietta's aggression. • Bandura (1965) found that children were more likely to copy a role models behaviour when the model was rewarded for the behaviour, so this may explain why Henrietta imitates aggressive behaviour. • A lot of Bandura's research involved young children so social learning theory may not explain Henrietta's aggression as she is older than the children who took part in Bandura's research. • Choy et al. (2018) found that stimulating the pre-frontal cortex lead to participants having less intention to carry out a physical assault in a hypothetical situation, so if Henrietta's pre-frontal cortex is under stimulated it may explain why she is aggressive. • The pre-frontal cortex focuses on nature and ignores nurture factors that may affect aggression such as social factors like negative childhood experiences, so it may not completely explain Henrietta's aggression. • Raine et al. (1997) found that murderers had less activity in the left and right medial superior frontal cortex, suggesting reduced activity in this area of the pre-frontal cortex may cause Henrietta's aggression. **Look for other reasonable marking points.**	**(16)**

Level	Mark	Descriptor
AO1 (6 marks), AO2 (4 marks), AO3 (6 marks) Candidates must demonstrate an equal emphasis between knowledge and understanding vs judgement/conclusion in their answer. Application to the scenario is capped at maximum 4 marks.		
	0	No rewardable material.
Level 1	1–4 Marks	Demonstrates isolated elements of knowledge and understanding. (AO1) Provides little or no reference to relevant evidence from the context (scientific ideas, processes, techniques and procedures). (AO2) A judgement/decision may be presented, but will be generic and the supporting evidence will be limited. Limited attempt to address the question. (AO3)
Level 2	5–8 Marks	Demonstrates mostly accurate knowledge and understanding. (AO1) Line(s) of argument occasionally supported through the application of relevant evidence from the context (scientific ideas, processes, techniques and procedures). (AO2) Candidates will produce statements with some development in the form of mostly accurate and relevant factual material leading to a judgement/decision being presented. Candidates will demonstrate a grasp of competing arguments but response may be imbalanced. (AO3)
Level 3	9–12 Marks	Demonstrates accurate knowledge and understanding. (AO1) Line(s) of argument supported by applying relevant evidence from the context (scientific ideas, processes, techniques and procedures). Might demonstrate the ability to integrate and synthesise relevant knowledge. (AO2) Displays a mostly developed and logical argument, containing mostly coherent chains of reasoning. Demonstrates an awareness of competing arguments, presenting a judgement/decision which may be imbalanced. (AO3)
Level 4	13–16 Marks	Demonstrates accurate and thorough knowledge and understanding. (AO1) Line(s) of argument supported throughout by sustained application of relevant evidence from the context (scientific ideas, processes, techniques or procedures). Demonstrates the ability to integrate and synthesise relevant knowledge. (AO2) Displays a well-developed and logical argument, containing logical chains of reasoning throughout. Demonstrates an awareness of competing arguments and presents a balanced response, leading to a balanced judgement/decision. (AO3)

Pearson Education Limited. Registered company number 872828
with its registered office at 80 Strand, London, WC2R 0RL, United Kingdom