Oxford Revise | AQA A Level Psychology | Answers

Chapter 7

All exemplar answers given would achieve full marks or the top level.

1. **Marks for this question: AO2 = 3**

   3 marks for a fully operationalised hypothesis that includes both co-variables. It should ideally be directional or a null because the stimulus specifies that it's 'following previous research', indicating we can make a prediction. However, a non-directional hypothesis can be accepted.

   2 marks if the hypothesis identifies a positive correlation instead of a negative one, or where one of the co-variables is not operationalised.

   1 mark where both co-variables are not operationalised.

   0 marks for an experimental hypothesis or a general statement or aim.

   Exemplar answer:
   There will be a negative correlation between a participant's score on an anxiety questionnaire and their eyewitness testimony score.

2. **Marks for this question: AO1 = 1**

   random sampling

3. **Marks for this question: AO3 = 4**

   This question is level-marked:

Level	Marks	Description
2	3–4	• One strength **AND** one limitation of a random sample is clear, appropriate, and effective. • There is appropriate use of specialist terminology.
1	1–2	• One strength **AND** one limitation of a random sample is limited or muddled. Use of specialist terminology is either absent or inappropriate. **OR** only one strength **OR** one limitation is explained at Level 2.
	0	No relevant content about a random sample.

Possible AO3 evaluation:

- There is no researcher bias: each person has an equal chance of being selected.
- It might cause a biased sample because not everyone selected will agree to take part, potentially only leaving a certain type of person in the actual sample (such as motivated participants).
- It can be difficult, expensive, and time-consuming to carry out.

ISBN 9781382034098

4. Marks for this question: AO2 = 3

1 mark for each of the following points:

- Using test-retest reliability.
- Participants complete the questionnaire twice, usually one week apart.
- If their scores on both questionnaires correlate by 0.8 or more, the questionnaire is reliable.

Note: split-half reliability is not on the specification but can be credited. It means splitting the questionnaire in half. A participant answers all the questions; if the score on the first half correlates by 0.8 with the score on the second half, it's reliable.

5. Marks for this question: AO2 = 5

This question is level-marked:

Level	Marks	Description
3	5	• The consent form has a professional tone and is well detailed and practical, showing sound understanding of the requirements of a good consent form. • The answer is clear and coherent. • Specialist terminology is used effectively. • Minor detail is sometimes lacking.
2	3–4	• The consent form is mostly detailed and practical, showing some understanding of the requirements of a good consent form. • The answer is mostly clear and well organised. • Specialist terminology is mostly used effectively.
1	1–2	• The consent form only includes basic details of what participants can expect to happen in the experiment or how they will be protected. • Knowledge of the requirements of a good consent form is limited. • The whole answer lacks clarity, has many inaccuracies, and is poorly organised. • Generic consent forms without any links to the stem.
	0	No relevant content.

Possible content and style for informed consent form:

- It has a title that gives the overall aim of the study. E.g. 'An investigation into anxiety and accuracy of eye-witness testimony.'
- It has a brief amount of information about the purpose of the study. E.g. 'I am a psychologist looking for participants to take part in an investigation into the relationship between anxiety and accuracy of eye-witness testimony.'
- It has information regarding the task, including how long it will take, so that people can make an informed decision about whether to take part. E.g. 'All participants will be required to fill in a personality questionnaire to assess their level of anxiety. They will then watch a video of a violent crime. These tasks

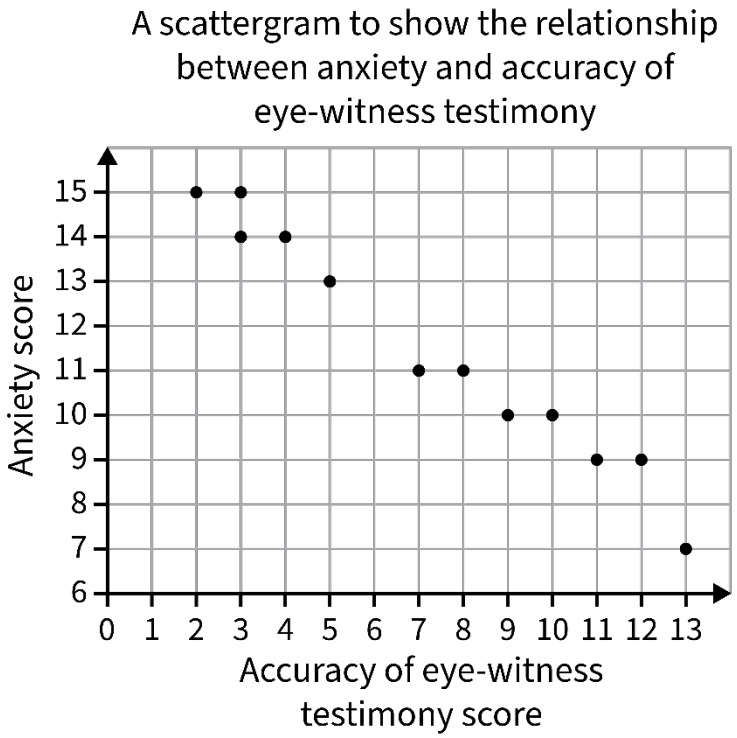
will take no longer than 30 minutes. 48 hours later, participants will be required to return to the laboratory and fill in another questionnaire to assess their accuracy of recall of the crime. This will take no longer than 30 minutes.'

- It has ethical information. E.g. 'Any participants who choose to take part have the right to withdraw from the study at any time.'
- Space is included for the participant to sign, print their name, and date the form.
- The form has a professional tone.

6. Marks for this question: AO2 = 3

3 marks for a scattergram that has each of the following features:

- A correct scale and scatterplots are in the correct places.
- A title containing both co-variables.
- Correctly labelled axes (it doesn't matter which co-variable goes on which axis).



7. Marks for this question: AO2 = 3

For **3 marks**, identify the **strength** and **direction** of the relationship and **explain what this means**.

Exemplar answer:

The scattergram demonstrates a strong negative correlation between anxiety and the accuracy of eye-witness testimony. The higher the anxiety score, the lower their eye-witness testimony score.

8. Marks for this question: AO1 = 3

1 mark for identifying that this means there is a 5% probability the results are due to chance (they can be 95% certain the results are not due to chance).

1 mark for identifying that this strikes the balance between making a Type I and Type II error.

1 mark for explaining that a Type I error might occur if the significance level is too lenient ($p < 0.10$) and a Type II error might occur if the significance level is too stringent ($p < 0.01$).

9. Marks for this question: AO2 = 3

1 mark for identifying that the calculated value of *Rs* = –0.986 is significant.

1 mark for explaining that the calculated value of *Rs* = –0.986 is significant because it is higher than the critical value of *Rs* = 0.503.

1 mark for stating that where *N* = 12, $p < 0.05$ for a one-tailed test.

Exemplar answer:
The calculated value of Rs *= –0.986 is significant because it is higher than the critical value of* Rs *= 0.503 where* N *= 12,* p *< 0.05 for a one-tailed test.*

10. Marks for this question: AO2 = 2

1 mark for explaining that the psychologist did not think she had made a Type I error because the calculated value of *Rs* = –0.986 is still higher than the critical value of *Rs* = 0.671 at the $p < 0.01$ level of probability.

1 mark for explaining that this means there is a less than a 1% probability the results are due to chance.

Credit answers identifying that it's significant at the $p < 0.005$ level, *Rs* = 0.727, meaning there is less than a 0.5% probability the results are due to chance.

11. Marks for this question: AO1 = 4

This question is level-marked:

Level	Marks	Description
2	3–4	• Description of the purpose **AND** content of an abstract is clear and accurate. • The answer is mostly coherent with effective use of specialist terminology.
1	1–2	• Knowledge of the purpose **AND** content of an abstract is briefly stated with little elaboration. • The answer may include inaccuracies and be poorly organised. • Specialist terminology is either absent or inappropriately used. **OR** the purpose **OR** content of the abstract is described at Level 2.
	0	No relevant content.

Possible AO1 content:

- An abstract is a short summary of the overall investigation so the reader can decide whether they want to read the whole report.

- It appears at the beginning of a research paper.
- It contains brief descriptions of the aims, hypotheses, procedure, results, and conclusions.

Credit other relevant material.

12. Marks for this question: AO2 = 6, AO3 = 6

This question is level-marked:

Level	Marks	Description
4	10–12	• Suggestions are generally well detailed and practical, showing sound understanding of experimental studies. • All three elements are presented appropriately. • Justifications are appropriate. • The answer is clear and coherent. • Specialist terminology is used effectively. • Minor detail and/or explanation is sometimes lacking.
3	7–9	• Suggestions are mostly sensible and practical, showing some understanding of experimental techniques. • The three elements are presented appropriately. • There is some appropriate justification. • The answer is mostly clear and well organised. • Specialist terminology is mostly used effectively.
2	4–6	• Some suggestions are appropriate, but others are impractical or inadequately explained. • At least two elements are presented appropriately. • Justifications are partial or muddled. • The answer lacks clarity, accuracy, and organisation on occasions. • Specialist terminology is used but might not be effective on all occasions.
1	1–3	• At least one element is addressed but knowledge of experimental techniques is limited. • Justifications are absent. • The whole answer lacks clarity, has many inaccuracies, and is poorly organised. • Limited or no use of specialist terminology.
	0	No relevant content. 0 marks if an answer describes a correlational study because this would not be testing the difference between conditions of the IV.

Answer guidance:

- The answer should be written in continuous prose, although there could be some bulleted sections (e.g. when listing the specialist materials needed for the experiment).
- The most obvious study would be an experiment (test of difference) with the conditions of the IV being to take medication before watching a video of a violent crime, and to not take medication or take a placebo before watching a video of a violent crime.

Possible experimental design:

Each section below represents approximately 4 marks.

Section 1: Design (include reference to the variables, experimental design, and controls)

- For full marks on this section, the IV and DV must be **operationalised**. The most obvious anxiety-inducing task to test eye-witness testimony would be to watch a video of a violent crime and then be tested on accuracy of recall 48 hours later.
- Answers might include other anxiety-inducing tasks. Credit all reasonable tasks, but make sure they are ethical, so the participant won't be asked to watch a real crime or be abused in any way.

Example of variables (credit other relevant variations of the IV and DV):

- IV: 20mg of anxiety medication before watching a video of a violent crime/no medication (or placebo medication) before watching a video of a violent crime.
- DV: eye-witness testimony score after 48 hours.

Note: The **experimental design** can be either independent groups, repeated measures, or matched pairs. If matched pairs is chosen, specific criteria that participants should be matched on that are relevant to the stimulus should be identified. For example, anxiety score on a personality questionnaire, educational achievement, sex, age, etc.

Possible justification for the experimental design (will be dependent on which experimental design is chosen):

For an **independent groups design**:

- Because participants would only do one condition of the IV, this means that the video of the violent crime is the same for each condition, improving validity.
- Participants are only doing one condition of the IV, so they are less likely to guess the true purpose of the study and display demand characteristics.
- Participants won't suffer from order effects (boredom, practice, or fatigue) as they are only doing one condition of the IV.

For a **repeated measures design**:

- Each participant acts as their own control, so their baseline anxiety level is the same, giving a good indication of whether the anxiety medication makes a difference to their accuracy of eye-witness testimony.
- Fewer participants would need to be recruited because each participant generates two sets of data.

For a **matched pairs design**:

- Participants are matched on specific criteria and then one person from each match does a different condition of the IV.
- This gives the same advantages of an independent groups design (less chance of demand characteristics, fewer order effects of boredom, practice, and fatigue).
- In addition, participants are acting more as their own control because they have been matched on appropriate criteria.

Note: the factors to be matched on must be identified. Possible matching criteria for this study include baseline anxiety score, age, gender, education level, ethnicity.

Possible control measures (will be dependent on which experimental design is chosen):

- All answers could include a pilot study. This must explain the things to be tested in relation to this study. For example, a **pilot study** would control for extraneous variables. In this study the psychologist might test the length and content of the video of the crime, and the equipment that the video is being shown on, including the screen, speakers, and volume. They might test whether the questionnaire that will determine the accuracy of eye-witness testimony is suitable in terms of the number of questions and content of questions.
- Identify that the pilot study will control things that might influence the DV (accuracy of eye-witness testimony). For example, if the video of the crime is too long, people might get bored and lose concentration and so not recall as many facts; this would influence the DV and would mean that it is possible that the participants got bored and stopped concentrating rather than it was the anxiety/anxiety medication affecting the accuracy of recall.
- All answers could include **standardised instructions** as a control measure, although this alone would not be enough for full marks in this section. Also identify how standardised instructions will control for extraneous variables. For example, standardised instructions reduce investigator bias and investigator effects because all participants will get the same instructions delivered in the same way, not allowing the investigator to give subtle cues about what is expected.
- For **independent groups design**, identify that the study will use **random allocation** to assign people to the conditions of the IV, to spread the individual differences (participant variables) between the groups. Identify personality characteristics that would need to be spread across the conditions of the IV, such as participants' scores on an anxiety questionnaire, their memory, etc.
- For **repeated measures design**, identify **counterbalancing** to control for the order effects of boredom, practice, and fatigue. Also identify that because participants are doing both conditions of the IV, there must be two different videos of a crime, otherwise participants will have already seen the video in the first condition and do better the second time around. The study must therefore match the two videos as closely as possible – e.g. the length of the video, the number of people in it, the nature of the crime – so that one is not easier to recall than the other.
- For **matched pairs design**, include the **pilot study** and **standardised instructions** for control measures (see above for details on these).

- Other **general control measures** could include general information about the conditions the video(s) are shown in being the same for all participants, e.g. the room, the lighting, the seating. Credit all relevant controls.

Section 2: Materials/apparatus/procedure – describe the task, procedure, and any special materials required
For full marks in this section, the task should relate to the IV, DV, and experimental design. It should also relate to the stimulus, so it must include taking anxiety medication for one of the conditions of the IV and not taking it for the other condition.

Possible content for the task and procedure:

For an **independent groups design**:

- Participants should be randomly allocated to conditions of the IV, e.g. half taking anxiety medication before watching a video of a violent crime, and half not taking anxiety medication before watching the same video.
- After 48 hours, all participants will fill in a questionnaire to assess their accuracy of eye-witness testimony. These scores for both conditions of the IV will then be compared to test for a difference.

For a **repeated measures design**:

- All participants will complete both conditions of the IV, so they will watch a video of a violent crime without taking anxiety medication beforehand, and they will watch a different video of a violent crime having taken anxiety medication beforehand. Participants will be counterbalanced to avoid order effects of boredom, practice, and fatigue. So, half will do condition A followed by condition B, and half will do condition B followed by condition A.
- After 48 hours of seeing each film, the participants will fill in a questionnaire to assess their accuracy of eye-witness testimony.
- These scores for the conditions of the IV will then be compared to test for a difference.

For a **matched pairs design**:

- Participants will be matched for appropriate criteria such as baseline anxiety score, age, gender, education, etc. One person from each pair will go into a condition of the IV.
- All participants will see the same video of a violent crime, but half will have taken anxiety medication before seeing the film and half wont.
- After 48 hours, all participants will fill in a questionnaire to assess their accuracy of eye-witness testimony. These scores for both conditions of the IV will then be compared to test for a difference.

Specialist equipment and materials will include:

- Video of a violent crime (two videos that have been matched if a repeated measures design)
- Video player, screen, speakers
- Anxiety medication and glasses of water
- Controlled room to watch the video
- Appropriate seating to view the video

Credit any other relevant specialist equipment and materials needed.

Section 3: Data analysis (include reference to descriptive *and* inferential analysis)

Descriptive statistics:

- Award marks for an appropriate measure of central tendency AND measure of dispersion.
- Because it's ordinal data, ideally the median and range should be chosen, justified by stating that it is ordinal data. The median could be chosen, justified by stating that it removes anomalies (extreme scores), and the range is quick and easy to calculate.
- Marks are also awarded for the mean and standard deviation with justification, e.g. the mean is the most sensitive measure of central tendency as it includes all the scores. The standard deviation is a more sophisticated calculation that shows how closely clustered the scores are around the mean.

The **inferential statistics** will depend on the experimental design chosen:

- For a repeated measures or matched pairs design, use the **Wilcoxen test** because it's a test of difference, uses ordinal data (the eye-witness testimony score), and uses a repeated measures or matched pairs design.
- For an independent groups design, use the **Mann-Whitney test** because it's a test of difference, uses ordinal data (the eye-witness testimony score), and uses an independent groups design.

Note: the question required data suitable for testing at the ordinal level of measurement, so if an answer contains interval data it will be capped at 6 marks due to the fact the inferential statistics will be incorrect.

Questions on previous content

1. **Marks for this question: AO1 = 2**

   sympathetic nervous system

   parasympathetic nervous system

2. **Marks for this question: AO1 = 3**

   3 marks for a clear, coherent outline of cognitive neuroscience, using appropriate terminology.

   2 marks for an outline of cognitive neuroscience that lacks some clarity or detail.

   1 mark for a brief or muddled outline of cognitive neuroscience.

Possible AO1 content:

- Cognitive neuroscience is the scientific study of the influence of brain structures on mental processes.
- Scanning techniques like fMRI allow psychologists to see which part of the brain is active for different functions.
- For example, researchers found that guilt activated the medial pre-frontal cortex.

Credit other relevant material.

3. Marks for this question: AO3 = 3

3 marks for a clear, coherent strength or limitation of the use of electroencephalogram (EEG) as a way of investigating the brain, using appropriate terminology.

2 marks for a strength or limitation of the use of electroencephalogram (EEG) as a way of investigating the brain that lacks some clarity or detail.

1 mark for a brief or muddled strength or limitation of the use of electroencephalogram (EEG) as a way of investigating the brain.

Possible AO3 evaluation:

- Has a high temporal resolution, providing a recording of brain activity in real time (compared to fMRI which has a low temporal resolution).
- Invaluable in the diagnosis of conditions like epilepsy.
- Contributed to our understanding of the stages of sleep.
- Electrical activity can be picked up by several neighbouring electrodes, so it's not useful for pinpointing the exact source of activity.
- EEG can only detect activity in the superficial regions of the brain, not the deeper regions such as the hypothalamus. (In comparison, post-mortem can examine deeper regions of the brain.)

Credit any valid strength or limitation.

4. Marks for this question: AO1 = 3

3 marks for clear, coherent outline of the role of adrenaline in the fight or flight response, using appropriate terminology.

2 marks for an outline of the role of adrenaline in the fight or flight response that lacks some clarity or detail.

1 mark for a brief or muddled outline of the role of adrenaline in the fight or flight response.

Possible AO1 content:

- When the amygdala detects a threat via sensory signals, it sends a signal to the hypothalamus.
- The hypothalamus activates the sympathetic nervous system to send a message to the adrenal glands.
- The adrenal medulla releases the hormone adrenaline into the bloodstream.
- Physiological responses to adrenaline include increased heart rate and blood pressure, faster respiration (breathing) and perspiration (sweat), all of which enable us to punch harder (fight) or run faster (flight) to deal with the danger.

Credit other relevant material.

5. Marks for this question: AO1 = 2, AO2 = 2

This question is level-marked:

Level	Marks	Description
2	3–4	• Knowledge of genotype and phenotype is clear and accurate, and focused on distinguishing between the concepts. • The material is applied appropriately to a relevant example. • The answer is mostly coherent with effective use of specialist terminology.
1	1–2	• Knowledge of genotype and phenotype is briefly stated with little elaboration. • The answer may include inaccuracies and be poorly organised. • Application to an example is not always appropriate. • Specialist terminology is either absent or inappropriately used.
	0	No relevant content.

Possible AO1 content:

- A person's genotype (their actual genetic makeup) can differ from their phenotype (how the genes are expressed) due to environmental influences.

Credit other relevant material.

Possible AO2 application:

Credit any relevant example of how a person's environmental influences may affect their phenotype. For example:

- A person may have the genotype for a disease called PKU, an allergy to protein causing brain damage and death. However, if they have a restricted diet without protein, their phenotype is expressed as a healthy individual.

6. Marks for this question: AO3 = 4

This question is level-marked:

Level	Marks	Description
2	3–4	• Evaluation of the role of neurochemistry on behaviour is clear and effective. • There is appropriate use of specialist terminology.
1	1–2	• Evaluation of the role of neurochemistry on behaviour is limited or muddled. • Use of specialist terminology is either absent or inappropriately used.
	0	No relevant content.

Possible AO3 evaluation:

- The biological approach uses scientific methods such as scanning techniques, drug trials, and twin studies. The use of sophisticated imaging and recording techniques produces objective and reliable data that is less likely to be misinterpreted by investigator bias. Experimental methods are highly controlled and systematically reported, allowing for replication.

- The biological approach's focus on the influence of neurochemistry on behaviour has led to the development of drug therapies for mental disorders such as depression. Drug therapies allow people to manage their condition and improve their quality of life.
- Breaking down complex human behaviours into their constituent neurochemical parts, such as explaining depression as simply having low levels of serotonin, is a reductionist approach that may be missing the whole picture. It may mean only drug therapy is offered, which may treat the symptoms but not the cause. Research indicates a combination of drug and talking therapies are beneficial for many conditions.
- Explaining behaviour in terms of internal forces, such as neurotransmitters, is deterministic and doesn't account for free will.

Credit other relevant evaluations.

7. Marks for this question: AO1 = 4

This question is level-marked:

Level	Marks	Description
2	3–4	• Knowledge of the procedure **AND** findings of one study of split-brain research to investigate hemispheric lateralisation is clear and accurate. • The answer is mostly coherent with effective use of specialist terminology.
1	1–2	• Knowledge of the procedure **AND** findings of one study of split-brain research to investigate hemispheric lateralisation is briefly stated with little elaboration. • The answer may include inaccuracies and be poorly organised. • Specialist terminology is either absent or inappropriately used. **OR** the procedure or findings are present at Level 2.
	0	No relevant content.

Possible AO1 content:

Procedure:

- 11 right-handed patients whose corpus callosum had been cut as a treatment for epilepsy (meaning their right and left hemispheres could not communicate) took part in a study.
- An image or word was flashed for one tenth of a second to the patient's right or left visual field, and they were asked to say or draw what they saw.

Findings:

- If the image or word was presented to the right visual field (processed in the left hemisphere), the patient would say what they saw.
- If the image or word was presented to the left visual field (processed in the right hemisphere), they often reported 'nothing'. However, they could draw it with their left hand.

Credit other relevant split-brain research, or variations such as the 'touch' variation or 'composite words' variation.