

Mark schemes

Q1.

[AO2 = 1]

B

[1]

Q2.

(a) [AO2 = 3]

3 marks for a clearly stated and appropriate non-directional operationalised hypothesis: there will be a (significant) correlation (relationship) between stress level on a scale of 1–10 and number of days absent (from work) due to sickness in the previous 6 months.

2 marks for a statement with both variables that lacks the clarity of the 3 mark answer or with only one variable operationalised.

1 mark for a muddled statement or where neither variable is operationalised.

0 marks for a directional hypothesis or aim/questions/causal statements.

Full credit can be awarded for a hypothesis expressed in a null form.

Note: Can accept illness/sickness/absence as a non-operationalised co-variable.

3

(b) [AO2 = 1]

1 mark for volunteer/self-selected sample.

1

(c) [AO2 = 2]

Award **one** mark for each of the following:

- there is a positive relationship/correlation
- suggesting that as stress levels increase so do the number of days off work due to sickness (in the last six months) (accept alternative wording).

2

(d) [AO3 = 3]

3 marks for a clear and coherent explanation with explicit reference to causation/cause and effect

2 marks for an explanation that lacks clarity/some detail.

1 mark for a muddled or limited explanation.

Possible content:

- this is a correlational study, not an experiment, no manipulation of IV
- correlation does not allow for inference of a causal relationship
- stress levels may affect illness/illness may affect stress levels
- a third factor may affect both making the two appear linked.

Accept other valid points.

3

(e) [AO2 = 2]

B – Primary and **D – Quantitative**

2

[11]

Q3.

[AO3 = 1]

Answer: B – The hypothesis should include fully operationalised variables.

[1]

Q4.

[AO3 = 4]

For **each** ethical limitation award marks as follows:

2 marks for a clear and coherent explanation of an ethical limitation of Asch's investigations

1 mark for a muddled or limited explanation.

Possible limitations:

- deception - participants believed they were taking part in a test of perception
- lack of protection from harm - participants were put in a stressful and embarrassing situation
- lack of informed consent - participants did not consent to take part in a study of conformity.

Credit other relevant ethical limitations.

Note: Methodological limitations are not creditworthy.

[4]

Q5.**[AO3 = 2]**

2 marks for a clear coherent explanation of how a different named sampling technique could be used to select participants.

1 mark for naming a different sampling technique and/or a muddled/limited explanation.

Possible content:

- opportunity sampling could be used to select participants by the researcher asking people who are willing and available to take part
- random sampling could be used to select participants by the researcher putting the names of the members of the target population in a hat and drawing out the required number
- stratified sampling could be used to select participants by the researcher by identifying the strata, calculating the proportions and drawing names out of a hat in proportion to the makeup of the population
- systematic sampling could be used to select participants by the researcher taking every nth person from a list.

Credit other relevant material.

[2]**Q6.****[AO2 = 2]**

2 marks for a clear ethical issue explained in the context of a patient who had difficulty sleeping.

1 mark for a limited and/or muddled explanation of an ethical issue.

Possible content:

- sensitive information may be revealed about the patient's sleeping habits (if their name was used)
- the patient might not agree to take part in the study if they were aware they would be asked personal questions about their sleeping habits
- the patient may decide they no longer want to continue to participate in the study as they are struggling to sleep
- the psychologist may distress the patient and make them more anxious about sleeping.

Credit other relevant information.

Note – no marks for just naming an ethical guideline without identifying the ethical problem.

[2]

Q7.**[AO3 = 3]****1 mark** for date (of publication).**1 mark** for publisher.

PLUS

1 further mark for any 1 of the following: place of publication/location, page number(s), date accessed, chapter, volume, edition.**[3]****Q8.****[AO3 = 4]**Award **up to 2 marks** for **each** reason why as follows:**2 marks** for a clear and coherent explanation of why conducting a peer review might improve the research.**1 mark** for a muddled/limited explanation.**Possible content:**

- would guarantee high quality of the written investigation through the suggestion of possible improvements
- would ensure quality data analysis for example by suggesting collection of more data or a different type of analysis
- would ensure that the research is appropriate for publication, eg suitable terminology and language used for the target audience and changed if required, check work is original (not copied/plagiarised)
- would ensure that the research is credible and thus maintaining the reputation of the institution and securing future funding for research.

Credit other relevant content.

[4]**Q9.****[AO1 = 1 AO2 = 1]**

Award marks as follows:

1 mark for a clear outline of what is meant by an aim, eg a general statement of the purpose of the study/a general statement about what the researcher intends to study.**1 mark** for a clear aim for this study, eg to investigate whether/to see if sleep affects productivity.

Do not accept hypotheses or general predictive statements.

[2]

Q10.**(a) [AO2 = 2]**

Award marks as follows:

1 mark for correctly identifying the type of hypothesis as directional.

1 mark for an explanation of why it should be directional, eg previous research has shown that more sleep leads to better problem solving/the original study showed that more sleep leads to better productivity so expect/predict the same direction of results/outcome.

2

(b) [AO2 = 3]

3 marks for a clearly stated and appropriate directional operationalised hypothesis: people will take less time to solve 10 simple mathematical problems correctly after they have had six hours' sleep than after they have had two hours' sleep.

2 marks for a statement with both conditions of the IV and the DV present but either the IV or DV is not fully operationalised.

1 mark for a muddled statement with both the IV and DV present but neither is fully operationalised OR for a clearly stated directional operationalised hypothesis which explicitly refers to different groups of participants.

0 marks for expressions of aim/questions, for correlational/non-directional/null hypotheses or for statements with only the IV or DV or one condition of the IV present.

Accept directional hypothesis expressed in the other direction.

3

[5]**Q11.****[AO2 = 3]**

Award marks as follows:

1 mark for a suggestion of an appropriate variable, eg difficulty of the mathematical problems, quality of the sleep gained, environmental conditions (eg room temperature, other distractions in the room etc), boredom/fatigue/practice.

Accept other appropriate suggestions.

1 mark for an explanation of why it should be controlled, eg if the mathematical problems in one condition were easier than those in the other condition then participants would record a quicker time due to the relative difficulty of the mathematical problems and not the amount of sleep they got.

1 mark for a practical description of how it could be controlled, eg the researcher would need to standardise the 20 mathematical problems to ensure they are of similar difficulty and then allocate 10 to each condition.

Note: these three marks should match so that the variable that has been identified is then explained and dealt with providing a coherent response.

[3]

Q12.

[AO3 = 4]

Level	Marks	Description
2	3-4	The explanation of how reliability could be improved is clear and detailed. The answer is generally coherent with effective use of specialist terminology.
1	1-2	The explanation of how reliability could be improved is limited or muddled. Specialist terminology is not always used appropriately or is absent.
	0	No relevant content.

The answer should be focused on improving the reliability of the content analysis to gain level 2 marks

Possible content:

- researchers should clarify/establish/agree/review operationalised codes/categories etc
- researchers could create new categories if necessary (that are mutually exclusive)
- researchers should be trained carefully in using these identified codes/categories (words/phrases)
- they should analyse a small number of diary extracts using the same analytic/coding system
- any improvement in reliability could be determined by establishing inter-rater/inter-observer reliability (between the two researchers); test-retest reliability.
- the two researchers' results are compared for similarity to check improvements (+0.8 or above would indicate reliability).

Accept other valid points

No credit given for reference to including an additional researcher.

[4]

Q13.**[AO2 = 4]**

Level	Marks	Description
2	3-4	Explanation of the possible effects of self-report on the validity of the data collected is clear and mostly accurate. The material is applied appropriately. The answer is generally coherent with effective use of terminology.
1	1-2	Limited or muddled explanation of the possible effects of self-report on the validity of the data collected. Application is limited. The answer lacks accuracy and detail. Use of terminology is either absent or inappropriate.
	0	No relevant content.

Possible content:

- students may not give a truthful rating of their stress levels due to social desirability bias/demand characteristics
- if students are not truthful it decreases the validity of the stress levels collected
- stress level is a subjective measure so a slightly stressed student may rate themselves as 8 whereas another student with a similar level of stress may rate themselves as 6 decreasing the validity of the data
- students may produce more valid data through self-report as only they know how stressed they feel, it would be difficult to assess the level of stress through an observation, or an interview situation may make them feel more stressed or make them more affected by demand characteristics.

Credit other relevant material.

[4]

Q14.(a) **[AO2 = 2 AO3 = 2]**

For each co-variable award:

2 marks for a clear, coherent suggestion with necessary detail to be practical.

1 mark for a limited or unclear suggestion.

Possible content:

- swimming – students could be given a questionnaire/interview in which they self-report the average time they spend doing swimming per week
- swimming – students could be observed during school swimming classes to see how long they participated during the swimming sessions
- anxiety levels – the students could be observed for behavioural signs of anxiety
- anxiety levels – students could have their blood pressure/pulse rate monitored.

Credit other relevant material.

4

(b) **[AO2 = 4 AO3 = 1]**

1 mark for Spearman's rho/Pearson's r (only award Pearson's r if this does not contradict the level of data credited to justify their choice of statistical test)

For each of the following bullet points award:

2 marks for a clear and coherent reason explicitly linked to the study.

1 mark for a limited reason implicitly linked to the study.

- The psychologist is testing a correlation/relationship/association (not a difference).
- If Spearman's rho is suggested – some of the data collected is ordinal **OR** If Pearson's r is suggested – both measures of the data collected must be interval

Note – appropriate reasons can be credited even if an incorrect test is named or no test is given.

Note – where more than two reasons are given, only the first two should be marked.

5

[9]

Q15.**[AO1 = 2]**

2 marks for a clear, coherent reason with appropriate elaboration.

1 mark for a limited or muddled reason.

Possible content:

- to reduce chances of flawed/unscientific research being published and therefore treated as 'fact' and misinforming the public
- to improve quality of published reports by suggesting amendments or further control/extension work.

Note – accept to allocate research funding if presented in the context of independent peer evaluation of research project proposals.

Credit other relevant material.

[2]**Q16.****[AO1 = 6]**

Award **one mark** for **each** ethical issue identified (**max 2 marks**).

For explanation of how each ethical issue could be dealt with award:

2 marks for a clear, coherent explanation with appropriate elaboration.

1 mark for a limited or muddled explanation.

Possible content:

- informed consent – participants should be given a consent form including all the details of the study so they can make an informed decision as to whether they wish to participate; for children under 16 years their parent/guardian needs to sign on their behalf; presumptive consent/retrospective consent
- deception – fully debrief participants at the end of the study and make them aware of the true aims of the study; participants should be given the right to withdraw their data from the study
- protection from harm – reassurance provided about their behaviour/performance in the study (debrief); counselling provided if necessary; fully debrief participants at the end of the study and make aware of the true aims of the study; participants should be given the right to withdraw their data from the study
- privacy & confidentiality – protect any personal details collected; maintain anonymity by using pseudonyms/initials/numbers when referring to participants.

Credit other relevant material, e.g. ethical issues related to the use of animals.

[6]

Q17.**[AO3 = 4]****Demand characteristics**

2 marks for a clear and coherent explanation of a way to eliminate or reduce demand characteristics applied to **this study**.

1 mark for a limited/muddled way.

Possible ways:

- not informing the patients which condition they are in (using a single-blind procedure/double-blind procedure), the new drug or the placebo condition
- allowing all patients to believe they are receiving the new drug/deceiving patients in the placebo condition by misleading them into believing they are taking the new drug
- ensuring that patients are not aware of the other condition, eg through careful wording of standardised instructions; making sure patients do not have any contact with patients in the other condition.

Investigator effects

2 marks for a clear and coherent way to eliminate or reduce investigator effects applied to **this study**.

1 mark for a limited/muddled way.

Possible ways:

- ensure the person administering the drug does not know which patients are taking the new drug and which are taking the placebo (using a double-blind procedure)
- anonymising patients, for example, by assigning them a number so the researcher dealing with patients does not know who is in which condition
- having standardised procedures and conditions so all patients are treated in exactly the same way.

If one strategy only, must be made clear how this strategy reduces/eliminates each bias, for full credit.

Credit other relevant suggestions.

[4]

Q18.**[AO2 = 4]**

Level	Marks	Description
2	3-4	Application of knowledge of standardisation and control is clear and mostly accurate. Application is explicit and appropriate. The answer is generally coherent with effective use of terminology.
1	1-2	Some application of knowledge of standardisation and control is apparent but may be implicit. The answer lacks accuracy and detail. Use of terminology is either absent or inappropriate. OR only one element explained at L2.
	0	No relevant content.

Possible content:

- a standardised script would ensure the same greeting was given to the children and their parents when they arrived, providing a high level of control
- without using a standardised script, the researcher's welcome may vary causing unintentional bias, eg may use more child-friendly vocabulary which may make the child less anxious and thus more sociable, etc
- using a controlled observation helps to reduce extraneous variables which may have an impact on the social behaviour of the children, affecting the validity of the study.

Credit other relevant material.

[4]**Q19.****[AO2 = 4]**Award **1 mark** for each of the following points:

- two observers would use same behavioural categories/discuss and agree on an interpretation of each of the social behaviours in the category system
- two observers would make independent observations/tallies (of the same child at the same time/the 5-minute sessions are filmed and each observer watches and records the data for each film)
- the two observers' tally charts would be compared to check for agreement/calculate the correlation between the recordings of the two observers to determine the level of inter-observer reliability
- researchers generally accept +0.8 correlation as a reasonable degree of reliability.

Note - For responses with no explicit application a maximum of 3 marks can be awarded.**[4]**

Q20.**[AO2 = 1 AO3 = 1]**

2 marks for a clear, coherent reason with appropriate elaboration in the context of this study.

1 mark for a limited or muddled reason with inappropriate/no elaboration.

Possible content:

- social behaviours are complex and contextual, quantifying them will lose detail
- loss of detail may mean important contextual information is missing, eg sarcastic smile as opposed to a friendly smile
- by quantifying the social behaviours, the relative importance of the social behaviour or combination of behaviours may be lost reducing validity.

Credit use of examples in the context of observed social behaviours of children to illustrate how using quantitative data could reduce the validity of the study.

Credit other relevant material.

[2]**Q21.****[AO2 = 3]**

Level	Marks	Description
3	3	Application of knowledge of the implications of psychological research for the economy is explicit and mostly effective. The answer is generally clear and coherent.
2	2	Application of knowledge of the implications of psychological research for the economy is evident. The answer lacks clarity in places.
1	1	Application of knowledge of the implications of psychological research for the economy is limited. The answer as a whole lacks clarity.
	0	No relevant content.

Possible application:

- if the study suggests increased social behaviour in children of stay-at-home parents, then parents may delay returning to work until children start school resulting in a negative impact on the economy
- if the study suggests increased social behaviour in children of working parents, then parents may be encouraged to return to work earlier, boosting the economy
- costs of providing childcare for working parents
- provides employment opportunities for nursery/childcare employees.

Credit other relevant material.

Note – responses focussing on the **minor** financial impact of **conducting** the study, as opposed to the wider implications of the findings of the study for the economy, can be awarded a maximum of 1 mark.

[3]

Q22.

[AO1 = 3]

Award **1 mark** for each of the following points:

- first section of a report (accept alternative wording)
- brief/summary/100-300 words (accept alternative wording)
- contains (a summary of) the aims, methods, results, and conclusions (accept alternative wording).

[3]

Q23.

(a) [AO2 = 1 AO3 = 1]

1 mark for a brief explanation of why the researcher's questionnaire would produce primary data.

Possible content:

- the questionnaire will be used to collect data specifically for the purpose of the investigation
- the questionnaire data will be gathered first-hand from the participants themselves.

Accept alternative wording.

PLUS

1 mark for one limitation of primary data.

Possible limitations:

- requires time and effort on the part of the researcher (to develop resources, etc)
- may be costly compared to secondary data which can be easily accessed.

Accept other valid limitations.

(b) [AO3 = 4]

Level	Mark	Description
2	3-4	The explanation of how the validity of the researcher's questionnaire could be improved is clear and detailed. The answer is generally coherent with effective use of specialist terminology.
1	1-2	The explanation of how the validity of the researcher's questionnaire could be improved is limited or muddled. Specialist terminology is not always used appropriately or is absent.
	0	No relevant content.

Possible content:

- the researcher could compare the two questionnaires and note any differences
- the researcher could (identify and) remove/deselect any items on his questionnaire that are problematic
- items might be problematic because they are leading, ambiguous, too complex, double-barrelled etc
- the researcher could incorporate a lie scale, so respondents are less aware that locus of control is being tested.

Accept other valid improvements.

Suggestions regarding the design of the study are not creditworthy.

4

[6]

Q24.

[AO1 = 2]

2 marks for a clear and coherent explanation.

1 mark for a limited/muddled explanation.

Possible content:

- the extent to which behaviours observed and recorded in a study reflect the behaviours that actually occur in the real world.

Credit other relevant material.

[2]

Q25.**[AO1 = 3 AO2 = 3 AO3 = 2]**

Level	Mark	Description
4	7-8	Knowledge of the features of science is accurate with some detail. Application and discussion is effective. Minor detail and/or expansion of argument is sometimes lacking. The answer is clear, coherent and focused. Specialist terminology is used effectively.
3	5-6	Knowledge of the features of science is evident but there are occasional inaccuracies/omissions. There is some appropriate application/discussion. The answer is mostly clear and organised but occasionally lacks focus. Specialist terminology is used appropriately.
2	3-4	Limited knowledge of the features of science is present. Focus is mainly on description. Any application/discussion is of limited effectiveness. The answer lacks clarity, accuracy and organisation in places. Specialist terminology is used inappropriately on occasions.
1	1-2	Knowledge of the features of science is very limited. Application/discussion is limited, poorly focused or absent. The answer as a whole lacks clarity, has many inaccuracies and is poorly organised. Specialist terminology is either absent or inappropriately used.
	0	No relevant content.

Possible content:

- objectivity and the empirical method
- replicability and falsifiability
- theory construction and hypothesis testing
- paradigms and paradigm shifts.

Possible application/discussion:

- use of research studies/theories/approaches to discuss the features of science
- comparison of approaches to discuss features of science, eg Freud's psychodynamic approach is unfalsifiable
- difficulties of the subjective nature of psychological investigations
- prevalent paradigms, eg behaviourism in 1920s onwards, 1970s paradigm shift – the cognitive revolution.

Credit other relevant material.

Q26.

(a) [AO1 = 2 AO2 = 2]

Level	Mark	Description
2	3-4	Knowledge of behavioural categories is clear and detailed, showing sound understanding. The explanation is clear and appropriate. There is appropriate use of specialist terminology.
1	1-2	Knowledge of behavioural categories is limited/muddled, showing limited understanding. The explanation lacks detail. Use of specialist terminology is either absent or inappropriate.
	0	No relevant content.

Possible content:

- a system of behavioural categories is a list/tally chart examples of behaviour likely to occur during an observation
- these should be observable/objectively defined/operationalised/unambiguous.

Possible explanation:

- using a set of behavioural categories should enable the recordings of friendly behaviour made by the two students to be consistent (can help to establish inter-observer reliability)
- this means that the observations can be carried out reliably/be less subjective interpretations of what is friendly and what is not.

Credit other relevant material.

4

(b) [AO3 = 4]

Award **1 mark each** for each of two behaviours suggested. For credit, behaviours should be both observable and friendly.

Possible suggestions: giving a toy to another child, holding hands, cuddling, playing a game that involves co-operation, sharing snacks, talking to each other, playing together.

PLUS

2 marks for a clear, coherent explanation of why/how the suggested behaviours might be more valid, showing sound understanding of the concept of validity.

1 mark for a limited/muddled explanation.

Possible content:

- how the suggested behaviours have face validity because they appear to measure what they are supposed to measure, ie friendly

- behaviour
- how the suggested behaviours show kindness, mutual enjoyment or similar
- whereas the behaviours in the table have no obvious friendly element – a child could be playing, sitting, standing near to another but these activities may have no friendly or even social element.

4

(c) [AO3 = 4]

Level	Mark	Description
2	3-4	Knowledge of what the students need to do is clear and detailed, showing sound understanding of the use of inferential testing. The explanation is clear and appropriate. There is appropriate use of specialist terminology, including the language of statistical testing.
1	1-2	Knowledge of what the students need to do is limited/muddled, showing limited understanding of the use of inferential testing. The explanation lacks detail. Use of specialist terminology is either absent or inappropriate.
	0	No relevant content.

Possible content:

- they would need to use a Chi-squared test/statistical test/inferential test with the data
- in this case there is categorical/nominal data and an independent design
- the result of the test (the observed/calculated value) would be compared to the critical table value at the 0.05 level
- if there is a less than 5% probability that the difference is due to chance, then the students could say the difference is significant
- then they can accept their research hypothesis (reject the null)

Accept other relevant material.

4

(d) [AO1 = 1 AO2 = 2]

1 mark – an idiographic approach.**PLUS****2 marks** for a clear and coherent outline with clear application.**1 mark** for a limited/muddled outline.**Possible content:**

- an idiographic approach would involve investigation of friendliness/friendly behaviour in an individual child or their parents
- eg interview/observe/carry out a case study of one child, focussing on their friendly behaviour

- results should not be used to generalise findings/propose general laws about friendly behaviour (and play space).

3

[15]**Q27.**(a) **[AO2 = 4]**

Level	Mark	Description
2	3-4	There is appropriate explanation of relevant ethical issues that should have been considered in these studies. The answer is generally coherent with effective use of appropriate terminology.
1	1-2	There is limited or partial explanation of relevant ethical issues that should have been considered in these studies. The answer lacks coherence and use of appropriate terminology. Or one ethical issue is explanation at level 2.
	0	No relevant content.

Possible content:

- anonymity/confidentiality and how this would be managed in terms of the observation and/or the questionnaire – use numbers rather than names
- consent and right to privacy (in public places)
- withdrawal and debriefing opportunities.

Credit other relevant information.

4

(b) **[AO1 = 2 AO3 = 2]****2 marks** for a clear and coherent explanation of operationalisation.**1 mark** for a muddled/limited explanation.**Content: operationalisation:**

- clear identification/definition of the observable actions/behaviours to be recorded
- this enables the behaviour under review to be measured objectively.

PLUS**1 mark each** for two observable behaviours that could represent 'type of work', eg making notes, using a laptop, reading a book.

Credit any relevant observable behaviour.

4

[8]

Q28.(a) **[AO2 = 1]****A** – Field experiment

1

(b) **[AO2 = 3]****3 marks** for an appropriate, clear and coherent directional operationalised hypothesis.**2 marks** for an unclear statement with both conditions of the IV and a DV operationalised **OR** an appropriate and clear statement with both conditions of the IV and DV but with only **one** variable operationalised.**1 mark** for an unclear statement with the DV and both conditions of the IV.**0 marks** for expressions of aim/questions/correlational/null/non-directional hypotheses or statements with only one condition of the IV present.**Possible content:**

- students will give a higher rating of how well rested they felt when they saw good sleep data rather than poor sleep data.

Accept alternative wording.

3

(c) **[AO2 = 1]****D** – Volunteer sampling

1

(d) **[AO2 = 4]**For **each** strength/limitation award:**2 marks** for a clear, coherent strength/limitation with appropriate elaboration in the context of the study.**1 mark** for a limited or muddled strength/limitation.**Possible content:**

- one strength is that students will be happy and willing to participate so will be more likely to complete the daily sleep questionnaire
- one strength is that it is not a time-consuming method/minimal input from the researcher as the psychologist only puts up a poster at the university and waits for students to volunteer
- one limitation is that it would provide a biased sample as it would only include psychology students at one particular university which would not necessarily reflect the population as they are all of a similar age/academic level
- one limitation is that the sample may be biased as the type of student who volunteers may have differing traits to the general population, for example they may be more extrovert.

Credit other relevant material.

Note - If an incorrect answer is given in part (c), credit can still be awarded for the relevant strength and limitation of the sampling method they have selected.

4

(e) [AO2 = 2]

2 marks for a clear and coherent strength of collecting quantitative data in this study.

1 mark for a limited/muddled strength.

Possible content:

- would enable the researcher to easily analyse the sleep data
- would enable the researcher to perform a statistical test to enable conclusions about how beliefs about sleep affect feelings of restedness.

Credit other relevant material.

2

(f) [AO2 = 2]

2 marks for a clear, coherent way in which the researcher could deal with the issue of deception with appropriate elaboration in the context of the study.

1 mark for a limited or muddled way in which the researcher could deal with the issue of deception.

Possible content:

- at the end of the study students should be given a full debrief where they are made aware that the sleep data provided was manipulated once students had been informed that the sleep data had been manipulated, they should be given the right to withdraw their data if they would like to.

Credit other relevant material.

2

(g) [AO2 = 2]

2 marks for a clear and coherent reason why the psychologist decided to include additional questions on the questionnaire.

1 mark for a limited/muddled explanation.

Possible content:

- additional questions distract the students from realising that the focus of the study was on their perceived quality of sleep (rating scale 1-10)
- students would be less likely to alter their ratings about their sleep quality, reducing demand characteristics (improving validity).

Credit other relevant material.

2

(h) [AO2 = 2]

2 marks for a clear and coherent limitation of assessing sleep quality using a rating scale.

1 mark for a limited/muddled explanation.

Possible content:

- sleep quality is subjective and so may be interpreted differently by each student
- a rating of 3, for example, might mean something different for different students
- students are not able to explain their rating.

Credit other relevant material.

2

(i) [AO3 = 4]

Level	Mark	Description
2	3-4	The suggestion and explanation are clear and appropriate, showing sound understanding of how to identify and control extraneous variables. The material is applied appropriately. There is effective use of terminology.
1	1-2	The suggestion and explanation show some understanding of how to identify and control extraneous variables. Application is not always effective. The answer lacks clarity and coherence. Use of terminology is either absent or inappropriate.
	0	No relevant content.

Possible content:

- delay between waking and responding to the questionnaire – phone battery ran out/they took a shower/etc before completing the questionnaire, they may feel more awake so pay greater attention to the sleep data (increasing the impact of the IV on the DV). Control – ask students to keep phones on charge overnight/asked to complete questionnaire immediately upon waking/before getting up
- consumption of alcohol/caffeine prior to sleep – this may make students feel worse in the morning making them give a lower rating regardless of the sleep tracker data (decreasing validity). Control – tell students not to consume any stimulants/depressants in the evenings of the study.

Credit other relevant suggestions and explanations.

Note: do not credit answers identifying actual number of hours slept as the extraneous variable.

Note: this is a repeated measures study.

4

[21]

Q29.

(a) [AO2 = 2]

Award **one mark** for each of the following:

- the hypothesis should be non-directional
- previous research is contradictory.

2

(b) [AO2 = 2]

B and D

2

(c) [AO2 = 2]

2 marks for a clear and coherent explanation for why watching students covertly should reduce demand characteristics with some elaboration.

1 mark for a muddled/limited explanation.

Possible content:

- the students are unaware they are being watched so they do not have an opportunity to change their behaviour in the study spaces
- this means what they are doing is their natural behaviour in the library.

2

(d) [AO2 = 2 AO3 = 2]

Level	Mark	Description
2	3-4	The data is used accurately to present clear and appropriate summaries about student choices. The answer is generally coherent with effective use of appropriate terminology.
1	1-2	The data is used to present appropriate summaries about student choices. The answer lacks coherence and use of appropriate terminology. Or only one conclusion at Level 2.
	0	No relevant content.

Possible points:

- more students choose to use the settees rather than either the single desks/table – 303 chose this space 71 + 45 the other spaces
- more students choose to use the work spaces in the afternoon than the morning – 243 > 176
- fewer students choose to use a large table and chairs – 45 < 71 < 303
- there is a clear difference in usage of settees between the morning and the afternoon.

Credit other relevant points.

4

(e) **[AO3 = 2]**

2 marks for a clear and coherent explanation.

1 mark for a muddled/limited explanation.

Possible content:

- open questions might give the researcher detailed insight into reasons for behaviour
- open questions could lead to ideas for further investigation
- respondents find open questions less frustrating than forced choice.

Credit other relevant information.

2

(f) **[AO2 = 2 AO3 = 2]**

AO2

2 marks for a clear and coherent explanation of the differences in the data in the two tables.

1 mark for a limited/partial explanation.

- The data in the two tables is contradictory.
- There were many more responses on the questionnaire that claimed they preferred to work at a single desk, whereas settees were much more popular during the observation.

AO3

2 marks for a clear and coherent conclusion that can be drawn from the differences in the data in the two tables.

1 mark for a limited/partial conclusion.

- This suggests that students may have lied on the questionnaire/given socially desirable responses.
- They may have wanted to appear more studious as settees are associated with relaxing.

Accept other relevant conclusions.

[4]

[16]

Q30.

(a) [AO2 = 1]

A – Field experiment

1

(b) [AO2 = 3]

3 marks for an appropriate, clear and coherent directional operationalised hypothesis.

2 marks for an unclear statement with both conditions of the IV and a DV operationalised **OR** an appropriate and clear statement with both conditions of the IV and DV but with only **one** variable operationalised.

1 mark for an unclear statement with the DV and both conditions of the IV.

0 marks for expressions of aim/questions/correlational/null/non-directional hypotheses or statements with only one condition of the IV present.

Possible content:

- students will give a higher rating of how well rested they felt when they saw good sleep data rather than poor sleep data.

Accept alternative wording.

3

(c) [AO2 = 1]

D – Volunteer sampling

1

(d) [AO2 = 4]

For **each** strength/limitation award:

2 marks for a clear, coherent strength/limitation with appropriate elaboration in the context of the study.

1 mark for a limited or muddled strength/limitation.

Possible content:

- one strength is that students will be happy and willing to participate so will be more likely to complete the daily sleep questionnaire
- one strength is that it is not a time-consuming method/minimal input from the researcher as the psychologist only puts up a poster at the university and waits for students to volunteer
- one limitation is that it would provide a biased sample as it would only include psychology students at one particular university which would not necessarily reflect the population as they are all of a similar age/academic level
- one limitation is that the sample may be biased as the type of student who volunteers may have differing traits to the general population, for example they may be more extrovert.

Credit other relevant material.

Note - If an incorrect answer is given in part (c), credit can still be awarded for the relevant strength and limitation of the sampling method they have selected.

4

(e) [AO2 = 2]

2 marks for a clear and coherent strength of collecting quantitative data in this study.

1 mark for a limited/muddled strength.

Possible content:

- would enable the researcher to easily analyse the sleep data
- would enable the researcher to perform a statistical test to enable conclusions about how beliefs about sleep affect feelings of restedness.

Credit other relevant material.

2

(f) [AO2 = 2]

2 marks for a clear, coherent way in which the researcher could deal with the issue of deception with appropriate elaboration in the context of the study.

1 mark for a limited or muddled way in which the researcher could deal with the issue of deception.

Possible content:

- at the end of the study students should be given a full debrief where they are made aware that the sleep data provided was manipulated once students had been informed that the sleep data had been manipulated, they should be given the right to withdraw their data if they would like to.

Credit other relevant material.

2

(g) [AO2 = 2]

2 marks for a clear and coherent reason why the psychologist decided to include additional questions on the questionnaire.

1 mark for a limited/muddled explanation.

Possible content:

- additional questions distract the students from realising that the focus of the study was on their perceived quality of sleep (rating scale 1-10)
- students would be less likely to alter their ratings about their sleep quality, reducing demand characteristics (improving validity).

Credit other relevant material.

2

(h) **[AO2 = 2]**

2 marks for a clear and coherent limitation of assessing sleep quality using a rating scale.

1 mark for a limited/muddled explanation.

Possible content:

- sleep quality is subjective and so may be interpreted differently by each student
- a rating of 3, for example, might mean something different for different students
- students are not able to explain their rating.

Credit other relevant material.

2

(i) **[AO3 = 4]**

Level	Mark	Description
2	3-4	The suggestion and explanation are clear and appropriate, showing sound understanding of how to identify and control extraneous variables. The material is applied appropriately. There is effective use of terminology.
1	1-2	The suggestion and explanation show some understanding of how to identify and control extraneous variables. Application is not always effective. The answer lacks clarity and coherence. Use of terminology is either absent or inappropriate.
	0	No relevant content.

Possible content:

- delay between waking and responding to the questionnaire – phone battery ran out/they took a shower/etc before completing the questionnaire, they may feel more awake so pay greater attention to the sleep data (increasing the impact of the IV on the DV). Control – ask students to keep phones on charge overnight/asked to complete questionnaire immediately upon waking/before getting up
- consumption of alcohol/caffeine prior to sleep – this may make students feel worse in the morning making them give a lower rating regardless of the sleep tracker data (decreasing validity). Control – tell students not to consume any stimulants/depressants in the evenings of the study.

Credit other relevant suggestions and explanations.

Note: do not credit answers identifying actual number of hours slept as the extraneous variable.

Note: this is a repeated measures study.

4

[21]

Q31.**[AO2 = 3]****1 mark** for identification of the correct type of experiment – quasi.**PLUS****2 marks** for identifying the IV as age with clear justification for the correct type of experiment.**1 mark** for a limited and/or muddled justification for the type of experiment.**Possible justification:**

- the IV is age which is pre-existing/naturally occurring/has not been manipulated/could not have been controlled by the researcher
- the IV is age so random allocation of the children to each condition is not possible.

Credit other relevant content.

If the type of experiment is wrong or absent, but the justification could apply to a quasi-experiment in this study, then this can receive credit up to a maximum of 2 marks.

[3]**Q32.****[AO2 = 6 AO3 = 6]**

Level	Marks	Description
4	10-12	Suggestions are generally well detailed and practical, showing sound understanding of experimental design. All three elements are present. Justifications are appropriate. The answer is clear and coherent. Specialist terminology is used effectively. Minor detail and/or explanation sometimes lacking.
3	7-9	Suggestions are mostly sensible and practical, showing some understanding of designing the experiment. At least two elements are present. 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 for designing the experiment, but others are impractical or inadequately explained. At least one element is addressed. Justifications are partial, muddled, or absent. The answer lacks clarity, accuracy and organisation on occasions.
1	1-3	Knowledge of designing the experiment is limited. The whole answer lacks clarity, has many inaccuracies and is poorly organised.
	0	No relevant content.

Three elements of design to be credited:

- type of experimental design with justification – eg independent groups design (half the children watched the new TV programme, the other half watched the existing TV programme), repeated measures design (all the children watch both programmes) or matched pairs design and why
- method of data collection – type of self-report technique (questionnaires or interviews, structured/unstructured) and why this would be appropriate, quantitative/qualitative data with justification, description of critical question/key data obtained, avoidance of leading questions, logistical details of data collection, eg postal questionnaire, mobile phone questionnaire etc, with justification, eg high response rate, confidentiality, reducing social desirability bias etc
- controlling **one** extraneous variable with justification why this needs to be controlled, eg minimising distractions whilst the TV show was on, number of siblings in household (if independent groups design), time of day TV programme was watched, order effects (if repeated measures design), minimising demand characteristics by having similar style TV programmes/not informing children of the purpose of the study/avoiding leading questions etc. Justification related to the impact on validity if the identified extraneous variable was not controlled.

[12]