



**General Certificate of Education (A-level)**  
**June 2012**

**Psychology A**

**PSYA4**

**(Specification 2180)**

**Unit 4: Psychopathology, Psychology in Action  
and Research Methods**

**Final**

***Mark Scheme***

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## Section A Psychopathology

### Question 01

#### AO1 = 8 marks

Candidates are required to outline **one** biological therapy and **one** psychological therapy for schizophrenia. This can be interpreted broadly (eg drug treatment) or specifically (eg clozapine). Therapies must be relevant to the treatment of schizophrenia. Descriptions of therapies that are not appropriate for schizophrenia such as systematic desensitisation are not creditworthy.

- Drug therapy: anti-psychotic drugs (eg phenothiazines such as chlorpromazine) are used to reduce the effects of dopamine. Atypical anti-psychotic drugs (eg clozapine) also work on reducing serotonin activity. Answers which include no details of mode of action of drugs, cannot achieve higher than rudimentary.
- ECT was largely abandoned as a treatment for schizophrenia after the discovery of the antipsychotic drugs in the 1950s but has recently been re-introduced in the USA. In the UK, the use of ECT is not recommended by NICE except in very particular cases (mainly for catatonic schizophrenia). Outlines of ECT techniques are creditworthy but top band answers should make the description explicitly relevant and show awareness of the fact that this is not a mainstream therapy.
- There are several psychological therapies used in the treatment of schizophrenia: cognitive-behavioural therapy, family interventions, social interventions etc. Candidates need to describe how the chosen therapy is used in treating schizophrenia. Answers that give a generic description of the therapy without showing how it is used to treat schizophrenia will be restricted to the basic mark band.

Therapies such as psychoanalysis and psychosurgery have been used for schizophrenia in the past but are no longer generally considered suitable. A general outline of these techniques which are not made explicitly relevant to schizophrenia cannot achieve higher than rudimentary.

Partial performance criteria apply when candidates describe only biological or psychological therapies.

### AO1 Mark bands

#### **8 - 7 marks Sound**

Knowledge and understanding are accurate and well detailed.  
A good range of relevant material has been selected.  
There is substantial evidence of breadth and depth.  
Organisation and structure of the answer are coherent.

#### **6 - 5 marks Reasonable**

Knowledge and understanding are generally accurate and reasonably detailed.  
A range of relevant material has been selected.  
There is evidence of breadth and/or depth.  
Organisation and structure of the answer are reasonably coherent.  
*Partial performance is sound, accurate and well detailed. Maximum 6 marks.*

#### **4 - 3 marks Basic**

Knowledge and understanding are basic/relatively superficial.  
A restricted range of material has been presented.  
Organisation and structure of the answer are basic.  
*Partial performance is reasonable and generally accurate.*

#### **2 - 1 mark Rudimentary**

Knowledge and understanding are rudimentary and may be muddled and/or inaccurate.  
The material presented may be very brief or largely irrelevant.  
Lacks organisation and structure.  
*Partial performance is basic.*

#### **0 marks**

No creditworthy material.

### AO2/AO3 = 16 marks

### Evaluation of therapies

Candidates must evaluate one biological and one psychological therapy. Candidates are likely to evaluate therapies in terms of effectiveness and appropriateness as these are mentioned on the specification. Outcomes studies will also achieve AO2/AO3 credit. Evaluation must be relevant to therapies suited to schizophrenia. Material on other therapies will only be creditworthy if it is explicitly used to offer relevant commentary.

#### Effectiveness:

- Problems of measuring effectiveness eg when to measure, how to measure, what criteria to choose, appropriate comparison groups.
- Wide range of symptoms and sub-types – treatments might be effective for some but not others.
- Placebo effects.

#### Appropriateness:

- The nature of the disorder means that some therapies are more appropriate than others eg talking therapies are less appropriate than some other psychological therapies.
- Factors affecting the choice of treatment eg financial constraints, accuracy of original diagnosis.
- Ethical issues eg possible harmful side-effects, issues of informed consent, dehumanising effects of some treatments.

## Methodological issues

- Reliability and validity of research evidence.
- The extent to which generalisations can be made eg treatment outcome research often has problems of operational definition and issues concerning the allocation of patients to treatment groups.

Where it is clear that only one therapy has been evaluated, partial performance criteria will apply. However, examiners should be aware that some generic evaluation can apply to both biological and psychological therapies and in this case partial performance criteria would not apply.

AO2/AO3 material should first be placed in the appropriate band according to the descriptors. However, not all the criteria need be satisfied for an answer to be placed in a particular band. Weak performance in one area may be compensated for by strong performance in others.

### AO2/AO3 Mark band – Best fit

#### **16 - 13 marks Effective**

Evaluation/commentary demonstrate sound analysis, understanding and interpretation. The answer is well focused and shows coherent elaboration and/or a clear line of argument. Ideas are well structured and expressed clearly and fluently. Consistently effective use of psychological terminology. Appropriate use of grammar, punctuation and spelling.

#### **12 - 9 marks Reasonable**

Evaluation/commentary demonstrates reasonable analysis, understanding. The answer is generally focused and shows reasonable elaboration. Most ideas are appropriately structured and expressed clearly. Appropriate use of psychological terminology. Minor errors of grammar, punctuation and spelling occasionally compromise meaning.

*Partial performance demonstrates sound analysis and understanding. It is well focused and shows coherent elaboration and/or a clear line of argument. Maximum 10 marks.*

#### **8 - 5 marks Basic**

Evaluation/commentary demonstrate basic, superficial understanding. The answer is sometimes focused and shows some evidence of elaboration. Expression of ideas lacks clarity. Limited use of psychological terminology. Errors of grammar, punctuation and spelling are intrusive.

*Partial performance demonstrates reasonable analysis and understanding. It is generally focused and shows reasonable elaboration and/or a clear line of argument.*

#### **4 - 1 marks Rudimentary**

Evaluation/ commentary are rudimentary demonstrating a very limited understanding. The answer is weak, muddled and incomplete. Material is not used effectively and may be mainly irrelevant. Deficiency in expression of ideas results in confusion and ambiguity. The answer lacks structure often merely a series of unconnected assertions. Errors of grammar, punctuation and spelling are frequent and intrusive.

*Partial performance demonstrates basic, superficial understanding. It is sometimes focused and shows some evidence of elaboration.*

#### **0 marks**

No creditworthy material is presented.

## Question 02

### AO1 = 8 marks

Candidates are required to describe at least two biological explanations of any type of depression. Psychological explanations are not creditworthy. It is acceptable to describe more than two and examiners should be mindful of a depth/breadth trade-off for candidates who take this approach.

- Genetics – genetic explanations are difficult to describe in detail, so AO1 credit can be awarded for straight descriptions of family, adoption or twin studies (eg McGuffin 1996, Wender 1986) which are used to demonstrate the genetic explanation.
- Biochemistry – there are several variations of the amine hypothesis (eg Schildkraut's catecholamine hypothesis and Kety's permissive amine hypothesis). These could be credited as two separate explanations.
- Neuroendocrine theories – the importance of stress hormones (eg cortisol) and over activity of the HPA axis which is responsible for the stress response

Evolutionary explanations of depression can also gain AO1 credit.

If candidates describe only one explanation, partial performance criteria apply. For top band marks, there should be reasonable coverage of at least two explanations.

### AO1 Mark bands

#### 8 - 7 marks Sound

Knowledge and understanding are accurate and well detailed.  
A good range of relevant material has been selected.  
There is substantial evidence of breadth and depth.  
Organisation and structure of the answer are coherent.

#### 6 - 5 marks Reasonable

Knowledge and understanding are generally accurate and reasonably detailed.  
A range of relevant material has been selected.  
There is evidence of breadth and/or depth.  
Organisation and structure of the answer are reasonably coherent.  
*Partial performance is sound, accurate and well detailed. Maximum 6 marks.*

#### 4 - 3 marks Basic

Knowledge and understanding are basic/relatively superficial.  
A restricted range of material has been presented.  
Organisation and structure of the answer are basic.  
*Partial performance is reasonable and generally accurate.*

#### 2 - 1 mark Rudimentary

Knowledge and understanding are rudimentary and may be muddled and/or inaccurate.  
The material presented may be very brief or largely irrelevant.  
Lacks organisation and structure.  
*Partial performance is basic.*

#### 0 marks

No creditworthy material.

## AO2/AO3 = 16 marks

Candidates are required to discuss biological explanations of depression. Likely routes to AO2/AO3 credit include:

- Research that supports/challenges the explanations
- Different types of depression eg major depressive disorder, dysthmic disorder, SAD which may have different causal factors
- the possibility of multiple contributory factors, for example, a discussion of the diathesis-stress model as a way of combining psychological and biological factors

While the question is concerned with explanations, the effectiveness of therapies could be used as a means of evaluation. Psychological explanations can gain AO2/AO3 credit **only** if used as sustained, critical commentary on biological explanations.

If only one explanation is presented as AO1, partial performance will apply for AO2/AO3. However, if more than one explanation is presented as AO1 partial performance criteria will not apply as evaluation is likely to be generic.

AO2/AO3 material should first be placed in the appropriate band according to the descriptors. However, not all the criteria need be satisfied for an answer to be placed in a particular band. Weak performance in one area may be compensated for by strong performance in others.

### AO2/AO3 Mark bands – Best fit

#### 16 - 13 marks Effective

Evaluation/ commentary demonstrate sound analysis, understanding and interpretation. The answer is well focused and shows coherent elaboration and/or a clear line of argument. Ideas are well structured and expressed clearly and fluently. Consistently effective use of psychological terminology. Appropriate use of grammar, punctuation and spelling.

#### 12 - 9 marks Reasonable

Evaluation/commentary demonstrates reasonable analysis, understanding. The answer is generally focused and shows reasonable elaboration. Most ideas are appropriately structured and expressed clearly. Appropriate use of psychological terminology. Minor errors of grammar, punctuation and spelling occasionally compromise meaning.  
*Partial performance demonstrates sound analysis and understanding. It is well focused and shows coherent elaboration and/or a clear line of argument. Maximum 10 marks.*

#### 8 - 5 marks Basic

Evaluation/commentary demonstrate basic, superficial understanding. The answer is sometimes focused and shows some evidence of elaboration. Expression of ideas lacks clarity. Limited use of psychological terminology. Errors of grammar, punctuation and spelling are intrusive.  
*Partial performance demonstrates reasonable analysis and understanding. It is generally focused and shows reasonable elaboration and/or a clear line of argument.*

#### 4 - 1 marks Rudimentary

Evaluation/commentary are rudimentary demonstrating a very limited understanding. The answer is weak, muddled and incomplete. Material is not used effectively and may be mainly irrelevant. Deficiency in expression of ideas results in confusion and ambiguity. The answer lacks structure often merely a series of unconnected assertions. Errors of grammar, punctuation and spelling are frequent and intrusive.  
*Partial performance demonstrates basic, superficial understanding. It is sometimes focused and shows some evidence of elaboration.*

#### 0 marks

No creditworthy material is presented.

### Question 03

#### AO1 = 8 marks

Candidates are required to describe two or more explanations for phobias. As the question does not specify type of explanation, candidates can offer psychological explanations, biological explanations or a mixture of both. It is acceptable to describe more than two and examiners should be mindful of a depth/breadth trade-off where candidates present more than two explanations.

#### Biological explanations:

- Genetics – genetic explanations are difficult to describe in detail, so AO1 credit can be awarded for straight descriptions of family, adoption or twin studies (eg Torgerson 1983, Skre 2000, Ost 1992) which are used to demonstrate the genetic explanation.
- Biochemical – eg low levels of GABA leads to increased arousal.
- Neuroanatomical – eg increased activity in amygdala.
- Evolutionary preparedness – eg benefits to survival to have a fear of certain potentially dangerous situations.

#### Psychological explanations:

- Behavioural – eg classical conditioning and modelling (SLT).
- Psychodynamic – eg repressed conflicts are expressed as a phobia.
- Cognitive-behavioural – eg negative beliefs and expectations can be acquired through cognitive rehearsal of fear.

Although there does not have to be an equal weighting between descriptions, there should be reasonable coverage of at least two explanations for top band marks.

If candidates consider only one explanation, partial performance criteria apply.



### AO1 Mark bands

#### **8 - 7 marks Sound**

Knowledge and understanding are accurate and well detailed.  
A good range of relevant material has been selected.  
There is substantial evidence of breadth and depth.  
Organisation and structure of the answer are coherent.

#### **6 - 5 marks Reasonable**

Knowledge and understanding are generally accurate and reasonably detailed.  
A range of relevant material has been selected.  
There is evidence of breadth and/or depth.  
Organisation and structure of the answer are reasonably coherent.  
*Partial performance is sound, accurate and well detailed. Maximum 6 marks.*

#### **4 - 3 marks Basic**

Knowledge and understanding are basic/relatively superficial.  
A restricted range of material has been presented.  
Organisation and structure of the answer are basic.  
*Partial performance is reasonable and generally accurate.*

#### **2 - 1 mark Rudimentary**

Knowledge and understanding are rudimentary and may be muddled and/or inaccurate.  
The material presented may be very brief or largely irrelevant.  
Lacks organisation and structure.  
*Partial performance is basic.*

#### **0 marks**

No creditworthy material.

### AO2/AO3 = 16 marks

Candidates are required to discuss explanations of phobias. Likely routes to AO2/AO3 credit include:

- Research that supports/challenges the explanations
- Different types of phobia eg agoraphobia, social phobia which may have different causal factors
- The possibility of multiple contributory factors, for example, a discussion of the diathesis-stress model as a way of combining psychological and biological factors

While the question is concerned with explanations, the effectiveness of therapies could be used as a means of evaluation.

Given that much of the evaluation is relevant to more than one kind of explanation, no partial performance criteria apply.

AO2/AO3 material should first be placed in the appropriate band according to the descriptors. However, not all the criteria need be satisfied for an answer to be placed in a particular band. Weak performance in one area may be compensated for by strong performance in others.

**AO2/AO3 Mark bands – Best fit**

**16-13 marks Effective**

Commentary and/or evaluation demonstrate sound analysis, understanding and interpretation.

The answer is well focused and shows coherent elaboration and/or a clear line of argument. Ideas are well structured and expressed clearly and fluently. Consistently effective use of psychological terminology. Appropriate use of grammar, punctuation and spelling.

**12-9 marks Reasonable**

Commentary and/or evaluation demonstrate reasonable analysis and understanding.

The answer is generally focused and shows reasonable elaboration and/or a line of argument is evident.

Most ideas appropriately structured and expressed clearly. Appropriate use of psychological terminology. Minor errors of grammar, punctuation and spelling only occasionally compromise meaning.

**8-5 marks Basic**

Commentary and/or evaluation demonstrate basic, superficial understanding.

The answer is sometimes focused and shows some evidence of elaboration.

Expression of ideas lacks clarity. Limited use of psychological terminology. Errors of grammar, punctuation and spelling are intrusive.

**4-1 marks Rudimentary**

Commentary and/or evaluation are rudimentary, demonstrating a very limited understanding.

The answer is weak, muddled and incomplete. Material is not used effectively and may be mainly irrelevant.

Deficiency in expression of ideas results in confusion and ambiguity. The answer lacks structure, often merely a series of unconnected assertions. Errors of grammar, punctuation and spelling are frequent and intrusive.

**0 marks**

No creditworthy material is presented.

## Question 04

### AO1 = 4 marks

Candidates are required to outline **one biological** explanation for OCD. Descriptions of psychological explanations cannot gain credit.

Biological explanations of OCD include:

- Genetic explanations – genetic explanations are difficult to describe in detail, so AO1 credit can be awarded for straight descriptions of family, adoption or twin studies (eg Billett 1998, Arbor 2006) which are used to demonstrate the genetic explanation.
- Biochemical explanations - serotonin deficiency, comorbidity with depression,
- Neuroanatomical explanations - abnormalities have been found in the orbital frontal cortex (OFC), caudate – nucleus and basal ganglia (Rapoport 1990)

### AO1 Mark bands

|   |
|---|
| <b>4 marks Sound</b><br>Knowledge and understanding are accurate and well detailed.<br>Organisation and structure of the answer are coherent.                                 |
| <b>3 marks Reasonable</b><br>Knowledge and understanding are generally accurate and reasonably detailed.<br>Organisation and structure of the answer are reasonably coherent. |
| <b>2 marks Basic</b><br>Knowledge and understanding are basic/relatively superficial.<br>Organisation and structure of the answer are basic.                                  |
| <b>1 mark Rudimentary</b><br>Knowledge and understanding are rudimentary and may be very brief, muddled and/or inaccurate<br>Lacks organisation and structure.                |
| <b>0 marks</b><br>no creditworthy material.   |

### AO2/AO3 = 8 Marks

AO2/AO3 credit is awarded for an evaluation of the biological explanation of OCD presented. Likely routes to AO2/AO3 credit include:

- Research that supports/challenges the explanation presented
- Difficulties in establishing cause and effect in neuroanatomical/neuro chemical explanations
- Difficulties disentangling genetic and environmental influences
- The possibility of multiple contributory factors, for example, a discussion of the diathesis-stress model as a way of combining psychological and biological factors

While the question is concerned with explanations, the effectiveness of therapies could be used as a means of evaluation. Psychological explanations can gain AO2/AO3 credit **only** if used as sustained, critical commentary on biological explanations.

Given that much of the evaluation is relevant to more than one kind of biological explanation, no partial performance criteria apply.

### AO2/AO3 Mark bands

#### 8-7 marks Effective

Commentary and/or evaluation demonstrate sound analysis, understanding and interpretation.

The answer is well focused and shows coherent elaboration and/or a clear line of argument. Ideas are well structured and expressed clearly and fluently. Consistently effective use of psychological terminology. Appropriate use of grammar, punctuation and spelling.

#### 6-5 marks Reasonable

Commentary and/or evaluation demonstrate reasonable analysis and understanding.

The answer is generally focused and shows reasonable elaboration and/or a line of argument is evident.

Most ideas appropriately structured and expressed clearly. Appropriate use of psychological terminology. Minor errors of grammar, punctuation and spelling only occasionally compromise meaning.

#### 4-3 marks Basic

Commentary and/or evaluation demonstrate basic, superficial understanding.

The answer is sometimes focused and shows some evidence of elaboration.

Expression of ideas lacks clarity. Limited use of psychological terminology. Errors of grammar, punctuation and spelling are intrusive

#### 2-1 marks Rudimentary

Commentary and/or evaluation are rudimentary, demonstrating a very limited understanding. The answer is weak, muddled and incomplete. Material is not used effectively and may be mainly irrelevant.

Deficiency in expression of ideas results in confusion and ambiguity. The answer lacks structure, often merely a series of unconnected assertions. Errors of grammar, punctuation and spelling are frequent and intrusive.

#### 0 marks

No creditworthy material is presented.

### Question 05

#### AO1 = 4 marks

Candidates are required to outline **one or more therapies** for obsessive compulsive disorder. There is no stipulation in the question as to which types of therapies are required so candidates can offer psychological therapies or biological therapies or a mixture of both. Examiners should be mindful of a depth/breadth trade-off here.

- Drug therapy: antidepressant drugs particularly those effecting serotonin such as the SSRIs and tricyclics.
- Psychosurgery is also sometimes used, but is very much a last-resort. Technologies such as anterior cingulotomy are used.
- Exposure with ritual (response) prevention (ERP). Patients are exposed to their fear stimulus and then are prevented from carrying out their normal rituals.
- Cognitive behavioural therapy: challenging inappropriate thoughts and consequently changing the related behaviours.

Candidates could offer other therapies (biological or psychological) as long as they are explicitly relevant to the treatment of OCD.

### AO1 Mark bands

|   |
|---|
| <b>4 marks Sound</b><br>Knowledge and understanding are accurate and well detailed.<br>Organisation and structure of the answer are coherent.                                 |
| <b>3 marks Reasonable</b><br>Knowledge and understanding are generally accurate and reasonably detailed.<br>Organisation and structure of the answer are reasonably coherent. |
| <b>2 marks Basic</b><br>Knowledge and understanding are basic/relatively superficial.<br>Organisation and structure of the answer are basic.                                  |
| <b>1 mark Rudimentary</b><br>Knowledge and understanding are rudimentary and may be very brief, muddled and/or inaccurate<br>Lacks organisation and structure.                |
| <b>0 marks</b><br>No creditworthy material.   |

### AO2/AO3 = 8 marks Evaluation of therapies

Candidates are likely to evaluate therapies in terms of effectiveness and appropriateness since these are mentioned on the specification, but any relevant commentary/evaluation is creditworthy. Evaluation must be relevant to therapies suited to OCD. Material on other therapies will only be creditworthy if it is explicitly used to offer relevant commentary.

#### Effectiveness

- Problems of measuring effectiveness eg when to measure, how to measure, what criteria to choose, appropriate comparison groups.
- Range of symptoms and sub-types – treatment might be effective for some but not others.
- Placebo effects.

#### Methodological issues:

- Reliability and validity of research evidence.
- The extent to which generalisations can be made eg treatment outcome research often has problems of operation definition and issues concerning the allocation of patients to treatment groups.

#### Appropriateness:

- The nature of the disorder means that some therapies are more appropriate than others e.g. Cognitive based therapies are considered by the APA to be inappropriate for those with OCD as sufferer already knows their behaviour is irrational.
- Factors affecting the choice of treatment eg financial constraints, availability of appropriate therapist, accuracy of original diagnosis.
- Ethical issues e.g. possible harmful side-effects, issues of informed consent.

**AO2/AO3 Mark bands**

**8-7 marks Effective**

Commentary and/or evaluation demonstrate sound analysis, understanding and interpretation.

The answer is well focused and shows coherent elaboration and/or a clear line of argument. Ideas are well structured and expressed clearly and fluently. Consistently effective use of psychological terminology. Appropriate use of grammar, punctuation and spelling.

**6-5 marks Reasonable**

Commentary and/or evaluation demonstrate reasonable analysis and understanding.

The answer is generally focused and shows reasonable elaboration and/or a line of argument is evident.

Most ideas appropriately structured and expressed clearly. Appropriate use of psychological terminology. Minor errors of grammar, punctuation and spelling only occasionally compromise meaning.

**4-3 marks Basic**

Commentary and/or evaluation demonstrate basic, superficial understanding.

The answer is sometimes focused and shows some evidence of elaboration.

Expression of ideas lacks clarity. Limited use of psychological terminology. Errors of grammar, punctuation and spelling are intrusive.

**2-1 marks Rudimentary**

Commentary and/or evaluation are rudimentary, demonstrating a very limited understanding.

The answer is weak, muddled and incomplete. Material is not used effectively and may be mainly irrelevant.

Deficiency in expression of ideas results in confusion and ambiguity. The answer lacks structure, often merely a series of unconnected assertions. Errors of grammar, punctuation and spelling are frequent and intrusive.

**0 marks**

No creditworthy material is presented.

## Section B Psychology in Action

### Question 06

#### AO1 = 4 marks

Candidates can gain credit for describing any research into media influences on pro-social behaviour. This includes research studies and/or explanations/theories of media influence. Candidates can take a broad approach or can focus on one study in detail. Examiners should read answers carefully to decide what material is being presented as AO1 and AO2/3.

Likely content includes:

- Baran et al (1979) investigated the effects of The Waltons on children's pro-social behaviour.
- Gentile et al (2009) used students and video games.
- A General Learning Model (Buckley and Anderson 2006) was developed to account for pro-social effects.
- Social learning theory or more recent cognitive explanations are also relevant.

#### AO1 Mark bands

|   |
|---|
| <b>4 marks Sound</b><br>Knowledge and understanding are accurate and well detailed.<br>Organisation and structure of the answer are coherent.                                 |
| <b>3 marks Reasonable</b><br>Knowledge and understanding are generally accurate and reasonably detailed.<br>Organisation and structure of the answer are reasonably coherent. |
| <b>2 marks Basic</b><br>Knowledge and understanding are basic/relatively superficial.<br>Organisation and structure of the answer are basic.                                  |
| <b>1 mark Rudimentary</b><br>Knowledge and understanding are rudimentary and may be very brief, muddled and/or inaccurate.<br>Lacks organisation and structure.               |
| <b>0 marks</b><br>No creditworthy material eg description of Bandura's study of anti-social behaviour with no reference to pro-social behaviour.                              |

#### AO2/AO3 = 6 marks

Candidates are required to evaluate psychological research into media influences on pro-social behaviour.

Commentary on research is likely to focus on:

- The relatively small number of research studies into pro-social behaviour compared to anti-social behaviour.
- Methodological issues, eg those associated with the limitations of correlational research; operationalisation of and control of variables.
- Ethical issues.
- Comparison of findings from different research methods/settings/participants.
- How research findings relate to theories and models.
- Limited predictive ability of theories such as GLM.
- Implications of the research for real world applications.

**AO2/AO3 Mark bands**

**6 marks Effective**

Commentary and/or evaluation demonstrate sound analysis, understanding and interpretation.

The answer is well focused and shows coherent elaboration and/or a clear line of argument. Ideas are well structured and expressed clearly and fluently. Consistently effective use of psychological terminology. Appropriate use of grammar, punctuation and spelling.

**5-4 marks Reasonable**

Commentary and/or evaluation demonstrate reasonable analysis and understanding.

The answer is generally focused and shows reasonable elaboration and/or a line of argument is evident.

Most ideas appropriately structured and expressed clearly. Appropriate use of psychological terminology. Minor errors of grammar, punctuation and spelling only occasionally compromise meaning.

**3-2 marks Basic**

Commentary and/or evaluation demonstrate basic, superficial understanding.

The answer is sometimes focused and shows some evidence of elaboration.

Expression of ideas lacks clarity. Limited use of psychological terminology. Errors of grammar, punctuation and spelling are intrusive

**1 marks Rudimentary**

Commentary and/or evaluation are rudimentary, demonstrating a very limited understanding. The answer is weak, muddled and incomplete. Material is not used effectively and may be mainly irrelevant.

Deficiency in expression of ideas results in confusion and ambiguity. The answer lacks structure, often merely a series of unconnected assertions. Errors of grammar, punctuation and spelling are frequent and intrusive.

**0 marks**

No creditworthy material is presented.



## Question 07

### AO2/AO3 = 10 marks

Candidates are required to apply their knowledge of the effectiveness of television in persuasion to the scenario. There are two components to the question: firstly candidates are asked to provide advice for the company. Secondly they are required to justify this with reference to relevant research. There is a wide range of material that would be creditworthy in this answer. Candidates are most likely to refer to theories to explain how to put together an effective television advertising campaign. Potential material drawn directly from the specification includes:

- Hovland Yale model
- The Elaboration Likelihood model

Candidates may also refer to other theories related to the persuasive effects of television such as:

- uses and gratifications theory
- cultivation theory
- McGuire's theory
- Social learning theory and the impact of role models

Candidates could choose to draw on research studies which demonstrate the use of TV in advertising campaigns.

Candidates who make no attempt to engage with the material in the stem cannot achieve more than 4 marks.

### AO2/AO3 Mark bands

#### 10-9 marks Effective

Application demonstrates sound analysis and understanding.

The answer is well focused and effective.

A number of appropriate pieces of advice are presented and justified with reference to relevant theory or research.

Ideas are well structured and expressed clearly and fluently.

#### 8-6 marks Reasonable

Application demonstrates reasonable analysis and understanding.

Application of knowledge is generally focused.

Some appropriate advice is presented, this is partially justified with reference to relevant research.

Most ideas are appropriately structured and expressed clearly.

#### 5-3 marks Basic

Application demonstrates basic analysis and superficial understanding.

Application is sometimes focused.

Either appropriate suggestions are made but not justified OR relevant research is presented but not applied to the task OR both are very weak.

Expression of ideas lacks clarity.

#### 2-1 mark Rudimentary

Application is rudimentary demonstrating very limited understanding.

Suggestions for advice/ justification are weak, muddled and may be mainly largely irrelevant.

Deficiency in expression of ideas results in confusion and ambiguity.

#### 0 marks

No creditworthy material is presented.

## Question 08

### AO1 = 4 marks

Candidates are required to outline at least one evolutionary explanation of the attraction of “celebrity”. Examiners should be aware of a breadth/depth trade-off when candidates produce more than one explanation.

There are several evolutionary explanations of attraction to celebrity. These share the view that the behaviour is adaptive ie it increased the probability of survival. Relevant explanations include:

- Ornamental mind theory – Celebrities are attractive because they display fitness indicators such as creativity and entertainment value.
- Gossip theory – Gossiping about high status individuals could help individuals be more like them which might improve their attractiveness and chance of finding a mate.
- Preference for creative individuals – Music, art and humour are highly valued in mate choice. Attraction for celebrities could be an extension of this including neophilia (the love of novelty)
- Potential for education – Provides useful day to day social learning about consequences of cheating on partner, what to wear etc.

Entertainment as play theory and leisure time theory could also be used as long as links are made to the attraction to celebrity. Social psychological explanations cannot receive credit.

### AO1 Mark bands

|   |
|---|
| <b>4 marks Sound</b><br>Knowledge and understanding are accurate and well detailed.<br>Organisation and structure of the answer are coherent.                                 |
| <b>3 marks Reasonable</b><br>Knowledge and understanding are generally accurate and reasonably detailed.<br>Organisation and structure of the answer are reasonably coherent. |
| <b>2 marks Basic</b><br>Knowledge and understanding are basic/relatively superficial.<br>Organisation and structure of the answer are basic.                                  |
| <b>1 mark Rudimentary</b><br>Knowledge and understanding are rudimentary and may be very brief, muddled and/or inaccurate.<br>Lacks organisation and structure.               |
| <b>0 marks</b><br>No creditworthy material.   |

## Question 09

### AO1= 4 marks

AO1 credit is awarded for the outline of the cognitive explanation of problem gambling. Candidates can refer to any or all of the stages of addiction (initiation, maintenance and/or relapse). The cognitive model in general emphasises the importance of coping, expectancy and self-efficacy in addiction.

Likely material includes:

- Expectancy plays an important role in the initiation of gambling. The benefits of winning money are seen as very high in gamblers who tend overestimate the likelihood of winning
- Gamblers often place a higher priority on present excitement than on future consequences (cognitive myopia)
- Gamblers who find themselves in financial difficulties may gamble more often in an attempt to increase their negative mood creating a vicious cycle (Beck)
- Gambling may help people to cope by reducing negative mood states (such as boredom) and increasing positive moods (excitement)

### AO1 Mark bands

|   |
|---|
| <b>4 marks Sound</b><br>Knowledge and understanding are accurate and well detailed.<br>Organisation and structure of the answer are coherent.                                 |
| <b>3 marks Reasonable</b><br>Knowledge and understanding are generally accurate and reasonably detailed.<br>Organisation and structure of the answer are reasonably coherent. |
| <b>2 marks Basic</b><br>Knowledge and understanding are basic/relatively superficial.<br>Organisation and structure of the answer are basic.                                  |
| <b>1 mark Rudimentary</b><br>Knowledge and understanding are rudimentary and may be very brief, muddled and/or inaccurate.<br>Lacks organisation and structure.               |
| <b>0 marks</b><br>No creditworthy material.   |

### AO2/AO3 = 6 marks

AO2/AO3 credit is awarded for an evaluation of the cognitive explanation of problem gambling. Candidates may provide research studies which support the claims made by the cognitive explanation. For example:

- There is strong evidence that gambling is used to improve moods
- Studies have shown that gamblers engage in irrational self-talk and cognitive bias when gambling (Sharpe 1995), Griffiths (1994)
- Delfabbro and Winefield 1999 found that 75% of thoughts/self-talk during gambling are irrational - effectively gamblers tell themselves they are going to win!

Candidates may also discuss the difficulties with gathering cognitive evidence and establishing cause and effect in studies of gambling. It is particularly difficult to separate the effects of learning/association from cognitive factors. Candidates who present alternative explanations (eg Biological model) can receive credit provided the material is used effectively to comment on the limitations of cognitive explanations.

### AO2/AO3 Mark bands

#### 6 marks Effective

Commentary and/or evaluation demonstrate sound analysis, understanding and interpretation.  
The answer is well focused and shows coherent elaboration and/or a clear line of argument. Ideas are well structured and expressed clearly and fluently. Consistently effective use of psychological terminology. Appropriate use of grammar, punctuation and spelling.

#### 5-4 marks Reasonable

Commentary and/or evaluation demonstrate reasonable analysis and understanding. The answer is generally focused and shows reasonable elaboration and/or a line of argument is evident. Most ideas appropriately structured and expressed clearly. Appropriate use of psychological terminology. Minor errors of grammar, punctuation and spelling only occasionally compromise meaning.

#### 3-2 marks Basic

Commentary and/or evaluation demonstrate basic, superficial understanding. The answer is sometimes focused and shows some evidence of elaboration. Expression of ideas lacks clarity. Limited use of psychological terminology. Errors of grammar, punctuation and spelling are intrusive.

#### 1 marks Rudimentary

Commentary and/or evaluation are rudimentary, demonstrating a very limited understanding. The answer is weak, muddled and incomplete. Material is not used effectively and may be mainly irrelevant. Deficiency in expression of ideas results in confusion and ambiguity. The answer lacks structure, often merely a series of unconnected assertions. Errors of grammar, punctuation and spelling are frequent and intrusive.

#### 0 marks

No creditworthy material is presented.

## Question 10

### AO1 = 4 marks

AO1 credit is awarded for a description of **one** way in which the media influences addictive behaviour. Description could refer to the processes involved in media influence and/or research evidence related to media influence on addiction. Candidates could approach this question by presenting material related to negative or positive influences of the media on addiction. Likely ways include:

- TV advertising of alcohol, lottery tickets and other gambling outlets (eg scratch card instants) have been shown to encourage sales
- Passive advertising of cigarettes and gambling through sport
- Influence of role models (films, TV, celebrities) who may glamorise or discourage addictive behaviours
- Deliberate use of media to reduce addictive behaviour through government health campaigns targeted at smoking/drinking

Candidates who present social learning theory (modelling) must apply this material to the learning of addictive behaviour. General descriptions of social learning (eg Bandura's bobo dolls) cannot receive credit.

Answers comprised only of examples of media influence eg alcohol adverts during sporting events will receive rudimentary credit.

Where several ways are presented, the best one should be credited.

### AO1 Mark bands

|  |
|--|
| <b>4 marks Sound</b>   |
| Knowledge and understanding are accurate and well detailed.<br>Organisation and structure of the answer are coherent.                            |
| <b>3 marks Reasonable</b>  |
| Knowledge and understanding are generally accurate and reasonably detailed.<br>Organisation and structure of the answer are reasonably coherent. |
| <b>2 marks Basic</b>   |
| Knowledge and understanding are basic/relatively superficial.<br>Organisation and structure of the answer are basic.                             |
| <b>1 mark Rudimentary</b>  |
| Knowledge and understanding are rudimentary and may be very brief, muddled and/or inaccurate.<br>Lacks organisation and structure.               |
| <b>0 marks</b>   |
| No creditworthy material.  |

## Question 11

### AO2/AO3 = 10 marks

Candidates are required to identify one or more interventions for reducing addictive behaviour and then justify their choice by referring to the scenario. Candidates can choose to discuss biological and/or psychological interventions:

- Biological interventions: would be helpful at tackling Kerry's unpleasant withdrawal symptoms and high levels of anxiety/ stress. Nicotine replacement therapy would be useful to reduce Kerry's withdrawal symptoms. Bupropion would also be helpful at blocking pleasurable effects of smoking.
- CBT/cognitive restructuring: would be appropriate to tackle Kerry's belief that she will not succeed and could be useful as a method of preventing relapse.
- Theory of planned behaviour (TPB): this approach focuses on developing a sense of perceived behavioural control/self-efficacy for smokers which would be helpful for Kerry and develop her belief that she can give up smoking.

Candidates may also justify their choice of intervention with reference to research studies. This approach is creditworthy. Other interventions such as public health interventions eg Quitline should only receive credit if applied to Kerry.

Up to a maximum of 2 marks for selecting intervention(s) appropriate to Kerry.

### AO2/AO3 Mark bands

#### 10-9 marks Effective

Application demonstrates sound analysis and understanding.

The answer is well focused and effective.

One or more appropriate interventions are identified and fully justified with reference to the scenario.

Ideas are well structured and expressed clearly and fluently.

#### 8-6 marks Reasonable

Application demonstrates reasonable analysis and understanding.

Application of knowledge is generally focused.

One or more appropriate interventions are identified and these are justified with reference to the scenario.

Most ideas are appropriately structured and expressed clearly.

#### 5-3 marks Basic

Application demonstrates basic analysis and superficial understanding.

Application is sometimes focused.

One or more appropriate interventions are identified and these are partially justified.

Expression of ideas lacks clarity.

#### 2-1 mark Rudimentary

Application is rudimentary demonstrating very limited understanding.

One or more appropriate interventions are suggested. Or justification is weak, muddled and may be mainly largely irrelevant.

Deficiency in expression of ideas results in confusion and ambiguity.

#### 0 marks

No creditworthy material is presented.

## Question 12

### AO1 = 4 marks

PK refers to the supposed ability to move an object by mental intention alone. Note that a definition of PK is not creditworthy nor are descriptions of Ganzfeld.

Candidates are required to outline one way in which researchers have studied psychokinesis (PK). Most likely answers include:

- Dice-rolling: attempts are made to affect the roll of a dice by thought alone (eg Rhine with his dice-rolling machine). Answers could include issues of hit-rates and significance, and the risks of artefact (eg natural biases in the manufacture of dice that may emerge statistically after many rolls). Candidates could focus on a particular study, for example the Radin and Ferrari (1991) meta-analysis of 2.5 million dice throws since the 1930's.
- Random number generator (RNG) or a random event generator (REG): these use radioactive decay, electronic noise or computer algorithms to generate random events. Participants are asked to bias the output.
- Weaker answers may focus on examples of spontaneous PK, such as poltergeist activity or the activities of 'celebrity psychics' such as Uri Geller or Nina Kulagnina. Such answers should be credited in so far as there is a focus on methodology.

Some candidates may take a broader view and outline either micro-PK (very small effects which are detected statistically) or macro-PK (large scale and detectable with the naked eye). This is acceptable. Examiners should be aware the PK can take many forms and should therefore take care to investigate unusual answers. DMILS (Direct Mental Interaction with Living Systems) is a form of PK where one person tries to influence a biological system from a distance (eg the biological system of another person). Research into DMILS has included psychic healing, so an informed candidate could make material on psychic healing relevant here.

Where candidates choose to discuss a specific study, the focus should be on the **methodology** rather than the findings.

Descriptions of ESP are not creditworthy.

### AO1 Mark bands

|   |
|---|
| <b>4 marks Sound</b><br>Knowledge and understanding are accurate and well detailed.<br>Organisation and structure of the answer are coherent.                                 |
| <b>3 marks Reasonable</b><br>Knowledge and understanding are generally accurate and reasonably detailed.<br>Organisation and structure of the answer are reasonably coherent. |
| <b>2 marks Basic</b><br>Knowledge and understanding are basic/relatively superficial.<br>Organisation and structure of the answer are basic.                                  |
| <b>1 mark Rudimentary</b><br>Knowledge and understanding are rudimentary and may be very brief, muddled and/or inaccurate.<br>Lacks organisation and structure.               |
| <b>0 marks</b><br>No creditworthy material.   |

### Question 13

#### AO2/AO3 = 4 marks

The anomalistic experience in the scenario is a dream which coincidentally comes true. Psychological explanations are based around the idea that humans have a deep-seated need to seek causality. This leads us to see causes for random events which are the product of chance. Basically, people have a poor understanding of probability.

There is a wide range of potential explanations for Harry's experience/interpretation which candidates could draw on. Some of the more likely include:

- Intellectual ability: people who believe in psychic abilities often have reduced intellectual ability and do not appreciate the role of coincidence.
- Probability misjudgement: people who believe in the paranormal are poorer at estimating chance and coincidence than non-believers. It seems likely from his ready attribution of psychic ability that Harry was already a believer therefore less likely to understand the role of coincidence in his experience.
- The law of truly large numbers: with a large enough sample, the most improbable things happen. Because we all dream at night, this is a sufficiently large sample to ensure that at some point someone's dream will appear to come true. Since people believe that extreme events are unlikely to happen causality is misattributed to something paranormal.
- Subjective validation: this is a cognitive bias in which people tend to remember the affirming 'hits' and overlook the far more frequent 'misses'. It could explain Harry's behaviour, as it suggests that he will not remember all the dreams which did not come true but is now very focused on one coincidental event to confirm something that is already part of his belief system

Candidates could also use other concepts relevant to coincidence, eg the gamblers fallacy, probability, as long as what is presented as an explanation is applicable to Harry.

#### AO2/AO3 Mark bands

|   |
|---|
| <p><b>4 marks Effective</b><br/> Explanation/application demonstrate sound analysis and understanding.<br/> Application of knowledge is well focused and effective.<br/> Ideas are well structured and expressed clearly and fluently.</p>                                |
| <p><b>3 marks Reasonable</b><br/> Explanation/application demonstrate reasonable analysis and understanding.<br/> Application of knowledge is generally focused.<br/> Most ideas are appropriately structured and expressed clearly.</p>                                  |
| <p><b>2 marks Basic</b><br/> Explanation/application demonstrate basic analysis and superficial understanding.<br/> Application is sometimes focused.<br/> Expression of ideas lacks clarity.</p>   |
| <p><b>1 mark Rudimentary</b><br/> Explanation/application are rudimentary demonstrating very limited understanding.<br/> The answer is weak, muddled and may be mainly largely irrelevant.<br/> Deficiency in expression of ideas results in confusion and ambiguity.</p> |
| <p><b>0 marks</b><br/> No creditworthy material is presented.</p>   |



### Question 14

#### AO2/AO3 = 6 mark

This is a complex area, but several personality characteristics have been related to aspects of paranormal belief eg:

- Locus of control may be related to certain kinds of paranormal belief, eg an external locus of control is associated with more superstitious belief and behaviour. Some aspects of paranormal belief do not seem to be related to locus of control at all however, so examiners should watch for over-arching claims from candidates that internal/external locus of control is related to paranormal belief and mark accordingly for accuracy. To gain credit candidates need to refer to aspects of psychic powers that are linked to locus of control
- Extroversion – introversion: extroverts tend to perform better than introverts on ESP tasks.
- Neuroticism – significant correlations between neuroticism and superstition have been found (eg Wiseman 2004) but other studies (eg MacDonald 2000) have contradicted this.
- Sensation seeking personality traits: paranormal belief offers a source of excitement. Some research suggests that people with greater paranormal belief are more likely to score high on measures of sensation-seeking.
- Creativity and fantasy proneness: Research has indicated a positive correlation with paranormal belief. Other research suggests that highly artistic people tend to have a greater belief in the paranormal and score higher on tests of ESP.

It is legitimate for candidates to argue that methodological and theoretical problems with this kind of research limit the extent to which personality factors help us understand why Harry believes he has psychic powers.

Whilst the question asks for 'factors', candidates do not need to cover more than one, although it is possible that answers which focus on only one personality factor will lack sufficient depth for full marks.

**AO2/AO3 Mark bands**

**6 marks Effective**

Explanation/application demonstrate sound analysis and understanding.  
Application of knowledge is well focused and effective.  
Ideas are well structured and expressed clearly and fluently.

**5-4 marks Reasonable**

Explanation/application demonstrate reasonable analysis and understanding.  
Application of knowledge is generally focused.  
Most ideas are appropriately structured and expressed clearly.

**3-2 marks Basic**

Explanation/application demonstrate basic analysis and superficial understanding.  
Application is sometimes focused.  
Expression of ideas lacks clarity.

**1 mark Rudimentary**

Explanation/application are rudimentary demonstrating very limited understanding.  
The answer is weak, muddled and may be mainly largely irrelevant.  
Deficiency in expression of ideas results in confusion and ambiguity.

**0 marks**

No creditworthy material is presented.

### Question 15

**AO1 = 4 marks, AO2/AO3 = 6 marks**

Candidates could legitimately focus on theories/explanations of NDE/OBE's as AO1 and research studies as AO2/AO3 OR research studies as AO1 and evaluation of these as AO2/AO3 OR a combination of these approaches. Examiners should read answers carefully to decide what candidates are presenting as AO1 and AO2/AO3.

Candidates are required to outline research into OBE's and/or NDE's. They can elect to consider either or both, so examiners should be sensitive to breadth and depth trade-off here.

Textbooks vary considerably in how they cover this topic so the range of responses is likely to be wide ranging.

#### Psychological approaches

- Ring (1980) carried out semi-structured interviews of 102 people who had been near death and identified a NDE 'core experience': feelings of deep peace and well-being, sense of separation from the body, entering darkness/passing through a tunnel, seeing 'the light', entering the light/beautiful garden.
- There are many methodological problems with such research and it is likely that this will form the core of any evaluation, although contrasting neurological explanations could also be used effectively.

#### Neurological approaches

- Candidates may present a range of neurological explanations of OBE/NDE phenomena. For example, the release of endorphins when near death are claimed to bring about the reported feelings of euphoria and peace. Other neurological explanations include cortical anoxia to explain 'light at the end of the tunnel'. Abnormal activity within the temporal lobes could produce symptoms of flashbacks.
- Blanke et al (2004) found that OBE's can be produced by direct stimulation of a part of the brain called the angular gyrus. Weak stimulation of right angular gyrus made a patient feel she was 'sinking into the bed' or 'falling from a height', whilst stronger stimulation caused an OBE where reports were of seeing oneself lying in the bed or floating a couple of metres above.
- Ehrsson (2007) argues that OBE's are the result of a disconnection between brain areas that process visual and sensorimotor information. Recent studies using video goggles have shown that OBEs can be induced in the lab.
- Such research focuses on particular aspects of OBE and fails to explain the richness of experiences, nor can they easily explain anomalous occurrences such as people reporting things during OBE that they could not otherwise have known (eg what was on the top of a tall cupboard in the room).

Additional evaluation marks may be achieved through the use of supportive or contradictory research, alternative psychological approaches, and/or focus on the limitations of the individual neurological explanations in explaining the entire OBE/NDE experience. Since they are not rooted in research, spiritual and philosophical explanations cannot gain credit.

### AO1 Mark bands

|   |
|---|
| <b>4 marks Sound</b><br>Knowledge and understanding are accurate and well detailed.<br>Organisation and structure of the answer are coherent.                                 |
| <b>3 marks Reasonable</b><br>Knowledge and understanding are generally accurate and reasonably detailed.<br>Organisation and structure of the answer are reasonably coherent. |
| <b>2 marks Basic</b><br>Knowledge and understanding are basic/relatively superficial.<br>Organisation and structure of the answer are basic.                                  |
| <b>1 mark Rudimentary</b><br>Knowledge and understanding are rudimentary and may be very brief, muddled and/or inaccurate.<br>Lacks organisation and structure.               |
| <b>0 marks</b><br>No creditworthy material  |

### AO2/AO3 Mark bands

|  |
|--|
| <b>6 marks Effective</b><br>Commentary and/or evaluation demonstrate sound analysis, understanding and interpretation.<br>The answer is well focused and shows coherent elaboration and/or a clear line of argument. Ideas are well structured and expressed clearly and fluently. Consistently effective use of psychological terminology. Appropriate use of grammar, punctuation and spelling.  |
| <b>5-4 marks Reasonable</b><br>Commentary and/or evaluation demonstrate reasonable analysis and understanding. The answer is generally focused and shows reasonable elaboration and/or a line of argument is evident.<br>Most ideas appropriately structured and expressed clearly. Appropriate use of psychological terminology. Minor errors of grammar, punctuation and spelling only occasionally compromise meaning.  |
| <b>3-2 marks Basic</b><br>Commentary and/or evaluation demonstrate basic, superficial understanding. The answer is sometimes focused and shows some evidence of elaboration. Expression of ideas lacks clarity. Limited use of psychological terminology. Errors of grammar, punctuation and spelling are intrusive.   |
| <b>1 marks Rudimentary</b><br>Commentary and/or evaluation are rudimentary, demonstrating a very limited understanding. The answer is weak, muddled and incomplete. Material is not used effectively and may be mainly irrelevant.<br>Deficiency in expression of ideas results in confusion and ambiguity. The answer lacks structure, often merely a series of unconnected assertions. Errors of grammar, punctuation and spelling are frequent and intrusive. |
| <b>0 marks</b><br>No creditworthy material is presented.   |

## Section C Psychological Research and Scientific Method

### Question 16

#### AO1 = 5 marks

Replicability is the ability to check and verify scientific information.

Candidates could explain replicability as:

- the ability to repeat the method to assess if similar findings are achieved
- the ability to achieve similar findings

Award 1 mark for a brief definition of replicability.

Tautological definitions eg merely stating that ‘replicability is the ability to replicate’ should not be awarded credit.

Replicability is an important part of the scientific process. Scientific method involves defining a problem and formulating a hypothesis which is tested with empirical research. Research findings are an important part of this process. If we wish to draw conclusions from research studies, the procedures and findings should be repeatable. Unrepeatable results may imply flaws or lack of control within the method used and are of limited use in theory construction.

Award up to 4 marks for an explanation of why replicability is important. This is likely to be contextualised within a description of the scientific method.

#### AO1 mark bands

|                |                            |
|----------------|----------------------------|
| <b>4 marks</b> | Explanation is sound       |
| <b>3 marks</b> | Explanation is reasonable  |
| <b>2 marks</b> | Explanation is basic       |
| <b>1 mark</b>  | Explanation is rudimentary |
| <b>0 marks</b> | No creditworthy material   |

### Question 17

#### AO2/AO3 = 3 mark

A suitable non directional hypothesis would be ‘There is a correlation (relationship) between pupils’ scores on a test of mathematical ability and pupils’ scores on a test of musical ability’.

3 marks for a fully operationalised non directional hypothesis

2 marks for non-directional hypothesis that identifies both variables but does not operationalise them.

1 mark for non-directional hypothesis where the variables are not identified

No marks for a null or directional hypothesis or one referring to association or difference.

### Question 18

#### AO2/AO3 = 3 marks

The main issue is that the teacher has made up her own test:

- This involved subjective judgement on the part of the teacher who rates the students' musical ability. Her judgement may not reflect real differences in musical ability and is likely to differ from other people's judgement and/or any absolute criteria for tunefulness.
- Lack of reliability in rating musical ability would compromise the validity of the measure.
- As the students can choose the song they will sing, the rating of ability could reflect the teacher liking/dislike of the song rather than the student's ability.
- The rating may be invalid as the students selected songs which varied in difficulty so the tunefulness reflected the difficulty of the song not the students' ability.
- Operationalising musical ability as tuneful singing is a very narrow measure. Someone can have musical ability such as playing an instrument which would not be reflected by this measure.

1 mark for identifying an appropriate reason

2 further marks for elaboration, explanation of why it is a problem, how it might affect the result or for further reason(s).

Note that 3 marks can be awarded for one reason elaborated or more than one reason in less detail.

### Question 19

#### AO2/AO3 = 3 marks

In the case of the maths test candidates could refer to split half or test retest as methods of checking reliability. They could also refer to checking the reliability of scoring by using two separate markers for the test and comparing the scores. Credit any other appropriate suggestion.

1 mark for identifying an appropriate method or a brief explanation eg 'repeat the maths test'.

2 further marks for appropriate elaboration.

### Question 20

#### AO2/AO3 = 2 mark

The teacher chose to use a random sample because it would probably be more representative of the whole GCSE group than if she had used an opportunity or volunteer sample. Candidates could also say that she had ready access to her target population making it convenient for her to select a random sample.

No credit for definition of a random sample.

1 mark for a brief or muddled reason (it is not biased)

2 marks for a reason that clearly points to an advantage of random sampling. This could be achieved through a comparison with another method (it is less likely to be biased than a volunteer sample)

## Question 21

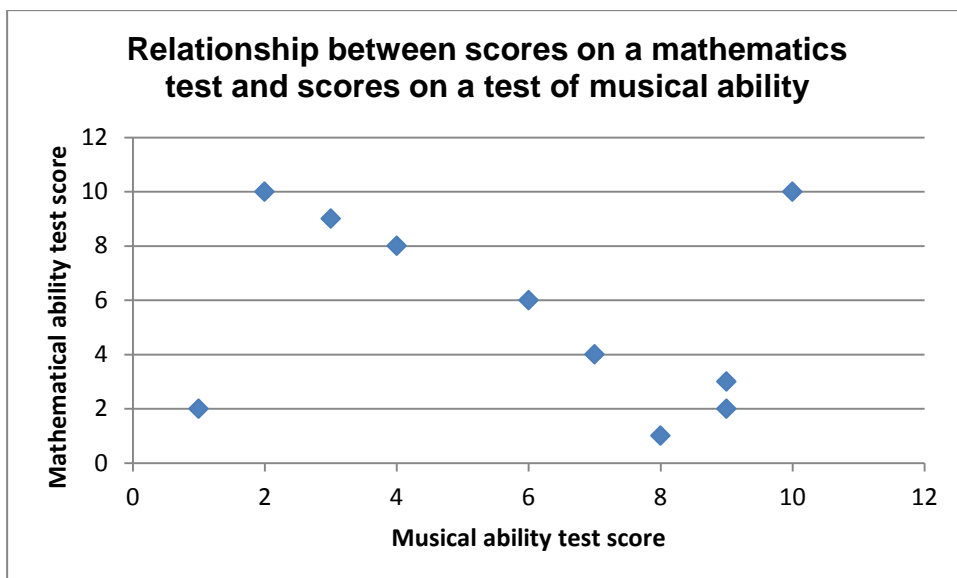
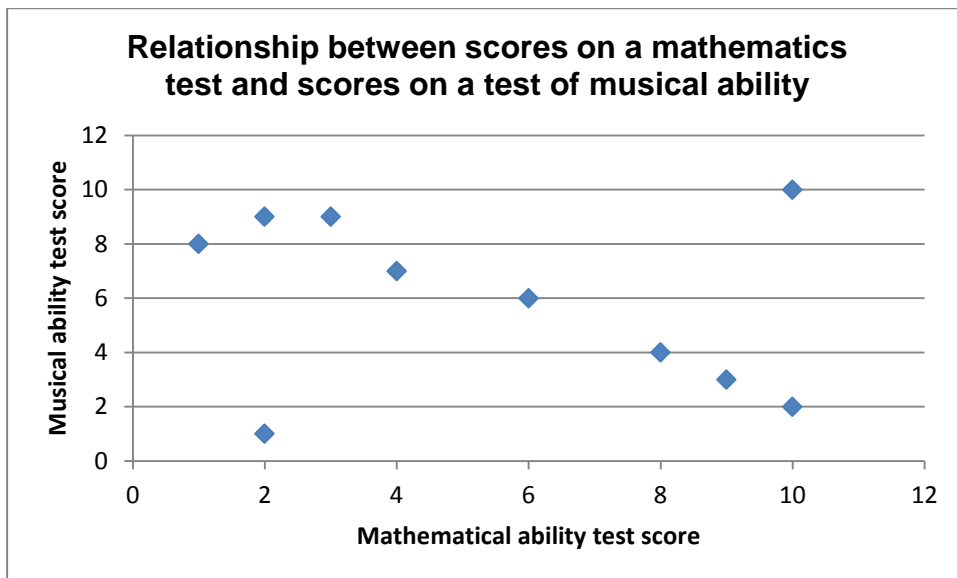
### AO2/AO3 = 3 marks

Credit should only be awarded for scattergraphs. Other graphs gain 0 marks.

1 mark for appropriately plotted scores.

1 mark for an appropriate title.

1 mark for correctly labelled axes.



## Question 22

### AO2/AO3 = 3 marks

Up to 3 marks for a discussion of the relationship between mathematical and musical ability.  
Likely points include:

- The graph seems to show a negative correlation between mathematical and musical ability
- This means that high scorers in mathematical ability tend to achieve low scores on musical ability and vice versa
- The presence of two strong outliers, means that the actual correlation is very weak and closer to zero.
- comment on the small sample size which limits the conclusions that could be drawn
- credit can be achieved for plausible interpretations of the strength of the correlation which are justified (ie looks moderate to strong or the outliers make it weak in practice) or those based on rough calculations (around -0.2).

1 mark for a very brief answer eg negative correlation or zero correlation.

2 further marks for elaboration/discussion this could be focused on one point in detail or several points in less detail.



### **Question 23**

#### **AO2/AO3 = 10 marks**

In question 23, candidates are asked to design a study to test if there is a difference between left-handed and right-handed students in musical ability.

#### Design – 1 mark

- Award 1 mark for identification of an appropriate design (independent measures or matched pairs).

#### Sampling – 2 marks

- Award 1 mark for explaining an appropriate sampling method and 1 further mark for justifying why this method would be appropriate. As left-handed people are less common in the population than right-handed people this needs to be addressed in the sampling method.

#### Procedure and assessment of musical ability – 4 marks

Award 1 mark for procedure, 1 mark for assessing musical ability and two further marks for elaboration of either or both of these.

- Description of the procedure eg each participant will be given a standardised musical ability test, participants should be tested within a controlled environment, with minimal noise or distraction.
- Students are required to suggest a plausible alternative method of assessing musical ability to the one in the stem (eg singing a short, novel phrase played on the piano). Further credit could be given for stating that the test should be identical for all students or for explaining how it will be assessed.

#### Debrief – 3 marks

- Award up to 3 marks for writing a debrief. This could include the aim of the study, thanking participants for taking part, asking if they have any questions, relevant ethical considerations.
- If this is not suitable to be read out to participants, maximum 1 mark.

**Question 24**

**AO2/AO3 = 3 marks**

Award 1 mark for a clear table appropriate for the study described in question 23.

**Musical ability scores:**

| Participant number | Left handed | Right handed |
|--------------------|-------------|--------------|
| 1                  |             |              |
| 2                  |             |              |
| 3                  |             |              |

Award 1 mark for the identification of an appropriate statistical test for the proposed design.  
Award 1 mark for one correct justification eg a test of difference, at least ordinal level data.

### Assessment Objectives Grid

| Question         | AO1 | AO2/3 | Total |
|------------------|-----|-------|-------|
| <b>Section A</b> |     |       |       |
| 1                | 8   | 16    | 24    |
| 2                | 8   | 16    | 24    |
| 3                | 8   | 16    | 24    |
| 4                | 4   | 8     | 12    |
| 5                | 4   | 8     | 12    |
| <b>Section B</b> |     |       |       |
| 6                | 4   | 6     | 10    |
| 7                |     | 10    | 10    |
| 8                | 4   |       | 4     |
| 9                | 4   | 6     | 10    |
| 10               | 4   |       | 4     |
| 11               |     | 10    | 10    |
| 12               | 4   |       | 4     |
| 13               |     | 4     | 4     |
| 14               |     | 6     | 6     |
| 15               | 4   | 6     | 10    |
| <b>Section C</b> |     |       |       |
| 16               | 5   |       | 5     |
| 17               |     | 3     | 3     |
| 18               |     | 3     | 3     |
| 19               |     | 3     | 3     |
| 20               |     | 2     | 2     |
| 21               |     | 3     | 3     |
| 22               |     | 3     | 3     |
| 23               |     | 10    | 10    |
| 24               |     | 3     | 3     |

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