Diploma Programme
Programme du diplôme
Programa del Diploma

Markscheme

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Psychology

Higher level and standard level

Paper 2

19 pages

Paper 2 assessment criteria

Criterion A — Focus on the question **[2]**

To understand the requirements of the question students must identify the problem or issue being raised by the question. Students may simply identify the problem by restating the question or breaking down the question. Students who go beyond this by **explaining** the problem are showing that they understand the issues or problems.

Marks	Level descriptor
0	Does not reach the standard described by the descriptors below.
1	Identifies the problem/issue raised in the question.
2	Explains the problem/issue raised in the question.

Criterion B — Knowledge and understanding **[6]**

This criterion rewards students for demonstrating their knowledge and understanding of specific areas of psychology. It is important to credit **relevant** knowledge and understanding that is **targeted** at addressing the question and explained in sufficient detail.

Marks	Level descriptor
0	Does not reach the standard described by the descriptors below.
1 – 2	The response demonstrates limited relevant knowledge and understanding. Psychological terminology is used but with errors that hamper understanding.
3 – 4	The response demonstrates relevant knowledge and understanding but lacks detail. Psychological terminology is used but with errors that do not hamper understanding.
5 – 6	The response demonstrates relevant, detailed knowledge and understanding. Psychological terminology is used appropriately.

Criterion C — Use of research to support answer **[6]**

Psychology is evidence based so it is expected that students will use their knowledge of research to support their argument. There is no prescription as to which or how many pieces of research are appropriate for their response. As such it becomes important that the research selected is **relevant** and useful in **supporting** the response. One piece of research that makes the points relevant to the answer is better than several pieces that repeat the same point over and over.

Marks	Level descriptor
0	Does not reach the standard described by the descriptors below.
1 – 2	Limited relevant psychological research is used in the response. Research selected serves to repeat points already made.
3 – 4	Relevant psychological research is used in support of the response and is partly explained. Research selected partially develops the argument.
5 – 6	Relevant psychological research is used in support of the response and is thoroughly explained. Research selected is effectively used to develop the argument.

Criterion D — Critical thinking **[6]**

This criterion credits students who demonstrate an inquiring and reflective attitude to their understanding of psychology. There are a number of areas where students may demonstrate critical thinking about the knowledge and understanding used in their responses and the research used to support that knowledge and understanding. The areas of critical thinking are:

- research design and methodologies
- triangulation
- assumptions and biases
- contradictory evidence or alternative theories or explanations
- areas of uncertainty.

These areas are not hierarchical and not all areas will be relevant in a response. In addition, students could demonstrate a very limited critique of methodologies, for example, and a well-developed evaluation of areas of uncertainty in the same response. As a result a holistic judgement of their achievement in this criterion should be made when awarding marks.

Marks	Level descriptor
0	Does not reach the standard described by the descriptors below.
1 – 2	There is limited critical thinking and the response is mainly descriptive. Evaluation or discussion, if present, is superficial.
3 – 4	The response contains critical thinking, but lacks development. Evaluation or discussion of most relevant areas is attempted but is not developed.
5 – 6	The response consistently demonstrates well-developed critical thinking. Evaluation or discussion of relevant areas is consistently well developed.

Criterion E — Clarity and organization **[2]**

This criterion credits students for presenting their response in a clear and organized manner. A good response would require no re-reading to understand the points made or the train of thought underpinning the argument.

Marks	Level descriptor
0	Does not reach the standard described by the descriptors below.
1	The answer demonstrates some organization and clarity, but this is not sustained throughout the response.
2	The answer demonstrates organization and clarity throughout the response.

Abnormal psychology

1. Discuss **one or more** research methods used in the study of factors influencing diagnosis. **[22]**

Refer to the paper 2 assessment criteria when awarding marks.

The command term "discuss" requires candidates to offer a considered review of one or more research methods used in the study of factors influencing diagnosis.

Candidates may discuss one research method in order to demonstrate depth of knowledge or more research methods in order to demonstrate breadth of knowledge. Both approaches are equally acceptable.

Diagnosis is influenced by multiple factors including, but not limited to:
- interpretation of diagnostic criteria (DSM/ICD)
- reliability of assessments
- validity of assessments
- cultural considerations
- socio-economic background
- clinician bias
- patient bias.

Relevant research methods could include, but are not limited to:
- experiments
- correlational studies
- case studies
- interviews (*eg*, semi-structured)
- surveys
- meta-analyses.

Relevant studies could include, but are not limited to:
- Rosenhan's (1973) case study (using observation) on the validity and reliability of diagnosis
- Kleinmann's (1984) interviews on cultural differences in the diagnosis of depression in Chinese population
- Beck et al.'s (1962) quasi-experiment on the reliability of diagnosis between two psychiatrists
- Cooper et al.'s (1972) quasi-experiment on inter-rater reliability of diagnosis among clinicians across different locations
- Jenkins-Hall and Sacco's (1991) quasi-experiment on discrimination and its effect on the validity of the diagnosis.
- Rück et al.'s (2014) correlational study on the validity and reliability of chronic tic disorder and obsessive-compulsive disorder diagnoses in the Swedish National Patient Register
- Di Nardo et al.'s (1993) correlational study on the reliability of the DSM III for the diagnosis of anxiety disorders
- Lipton and Simon's (1985) correlational study on the reliability of diagnosis for schizophrenia and mood disorders.

Critical discussion may include, but is not limited to:
- why the method(s) was/were selected and the appropriateness of the method(s) including strengths and weaknesses of the method(s)
- cultural and/or ethical considerations

- assumptions and biases
- relevant approaches and issues and debates (as long as they were shaped to how they affect factors in diagnosis) – e.g. idiographic vs. nomothetic, holism vs. reductionism
- the issues of validity and reliability
- the issues of generalizability of findings
- the ease and cost of procedures
- practical applications and implications – consequences for therapies/treatments
- comparison with alternative methods to draw out relevant strengths and weaknesses.

The question asks for a discussion of one or more research methods, marks awarded for criterion B should refer to definitions of terms and concepts relevant to the research methodology. Overall, this includes some knowledge of the specific topic (factors influencing diagnosis) and general knowledge and understanding related to research methods (for example definitions of relevant terms in research methodology).

Marks awarded for criterion C assess the quality of the description of a study/studies and assess how well the candidate linked aspects of the study to the question.

For studies where there may be more than one research method, candidates should not be penalised for discussing one of the research methods other than the main research method.

2. Discuss the prevalence rates of **one or more** disorders. **[22]**

Refer to the paper 2 assessment criteria when awarding marks.

The command term "discuss" requires candidates to offer a considered review of the prevalence rates of one or more disorder(s).

Candidates may refer to different types of prevalence: point, or period or life-time prevalence.

Relevant studies could include but are not limited to:
- Nolen-Hoeksema's (2001) review of gender differences in stress responses and depression
- Brown and Harris's (1977) study of social factors affecting vulnerability to depression in women
- Ettmann et al.'s (2020) survey related to depression symptoms in US adults before and during the COVID-19 pandemic
- De Souza Vivan et al.'s (2014) research on prevalence rates of OCD in adolescents in Brazil
- Atwoli et al.'s (2015) review of studies related to the prevalence of PTSD, risk factors and consequences cross-culturally
- Makino et al.'s (2004) study regarding the prevalence of eating disorders in Western and non-Western countries
- Amenson and Lewinsohn's (1981) study on gender differences in prevalence of unipolar depression.

Discussion points may include, but are not limited to:
- variations in prevalence rates across age and gender
- risk factors such as exposure to conflicts, traumatic events, physical or psychological abuse
- social and cultural factors (for example, poverty, social, and cultural norms)
- biological factors (for example, genetics, brain chemistry, hormonal imbalances, and neurological structure. These internal mechanisms shape vulnerability to disorders)
- variations in prevalence rates across cultures/ethnic groups
- diagnostic criteria and classification systems
- methodological and ethical considerations related to the research into prevalence rates of disorders
- practical applications/real world implications.

Candidates may discuss the prevalence rates of one disorder in order to demonstrate the depth of knowledge or may discuss the prevalence rates of a larger number of disorders in order to demonstrate the breadth of knowledge. Both approaches are equally acceptable.

3. Evaluate the biological treatment of **one or more** disorders. **[22]**

Refer to the paper 2 assessment criteria when awarding marks.

The command term "evaluate" requires candidates to make an appraisal of the effectiveness of the biological treatment by weighing up its strengths and limitations. Although a discussion of both strengths and limitations is required, it does not have to be evenly balanced to gain high marks.

Candidates may evaluate biological treatment of one disorder in order to demonstrate depth of knowledge or may evaluate biological treatment of a larger number of disorders in order to demonstrate breadth of knowledge. Both approaches are equally acceptable.

Biological treatment could include, but is not limited to:
- drug therapy
- electroconvulsive therapy (ECT)
- brain stimulation
- psychosurgery.

Relevant studies may include, but are not limited to:
- TADS (2004-2007) multi-site longitudinal study on drug treatment of adolescents with depression
- Kirsch et al.'s (2014) and Holen et al.'s (2002) study on criticism of drug treatment for depression
- Spaans et al.'s (2015) study on remission using ECT vs. medication among elderly patients with depression
- MacNamara et al.'s (2016) study on the effectiveness of SSRIs for post-traumatic stress disorder
- Boggio et al.'s (2010) study on repetitive transcranial magnetic stimulation (rTMS) treatment for the post-traumatic stress disorder
- Norris et al.'s (2011) study on the effectiveness of drug treatment for eating disorders.

Discussion may include, but is not limited to:
- long term/short term effectiveness of the chosen treatment(s) (including the issue of side effects)
- the assumptions about etiology upon which the treatment is based
- advantages and disadvantages of the treatment
- comparing/contrasting alternative approaches to treatment eg CBT or interactionist approach by linking these to potential advantages and disadvantages of biological treatments
- relevant issues and debates
- real world implications (e.g. for the economy, mental health services).

If the candidate addresses only strengths or only limitations, the response should be awarded up to a maximum of **[3]** for criterion D: critical thinking. All remaining criteria should be awarded marks according to the best fit approach.

Developmental psychology

4. Discuss the influence of childhood trauma on cognitive and/or social development. **[22]**

Refer to the paper 2 assessment criteria when awarding marks.

The command term "discuss" requires candidates to give a considered review of the influence of childhood trauma on cognitive and/or social development.

Childhood trauma could include but is not limited to: physical, psychological or sexual abuse, physical or psychological neglect, household dysfunction, loss or bereavement, bullying and/or peer victimization, community and environmental trauma (eg, war, political violence, natural disasters).

Cognitive and/or social development may include, but is not limited to:
- memory and learning
- executive functioning
- language development
- attachment styles
- peer relationships
- emotional regulation.

Relevant studies include, but are not limited to:
- Curtiss's (1977; 1981) case studies on Genie
- Gould et al.'s (2011) study on the effects of child abuse and neglect on cognitive functioning in adulthood
- Milojevich et al.'s (2018) study on associations among maltreatment, disengagement coping, and behavioural functioning in high-risk youth
- Rutter *et al*.'s (2011) study on the consequences of deprivation in Romanian orphans
- Koluchova's (1972; 1976) case studies showing the possibility of reversing the effects of deprivation
- Zeanah et al.'s (2005) Bucharest early intervention project on the effects of institutionalization on children
- Werner's (2005) study on the effect of a series of different stressors and traumatic events.

Discussion may include, but is not limited to:
- long-term/short-term effects of childhood trauma
- methodological and ethical considerations
- gender/cultural considerations
- practical applications and implications of the findings
- assumptions and biases
- supporting and/or contradictory evidence
- alternative explanations or factors (e.g. individual differences, resilience).

5. Evaluate **one or more** theories of attachment. **[22]**

Refer to the paper 2 assessment criteria when awarding marks.

The command term “evaluate” requires candidates to make an appraisal of the chosen theory/theories of attachment by weighing up their strengths and limitations. Although a discussion of both strengths and limitations is required, it does not have to be evenly balanced to gain high marks.

Candidates may evaluate one theory of attachment in order to demonstrate depth of knowledge or a larger number of theories of attachment in order to demonstrate breadth of knowledge. Both approaches are equally acceptable.

Relevant theories may include, but are not limited to:

- learning theory of attachment
- Bowlby’s monotropy theory of attachment
- Kagan's temperament theory of attachment.

Relevant studies may include, but are not limited to:

- Dollard and Miller’s (1950) study on learning theory of attachment
- Harlow’s (1958) study on attachment in monkeys
- Rutter et al.'s (2004) study on attachment disorder
- Van Ijzendoorn and Kroonenberg’s (1988) study on cross-cultural variation
- Ainsworth's (1969) study on the “strange situation”
- Schaffer and Emerson's (1964) study on stages of attachment
- Pederson et al.'s (1990); Main's (1981) studies on the mother's behaviour and secure attachment
- Blehar et al.'s (1977) study investigating how early mother-infant play predicts attachment patterns.

Discussion may include, but is not limited to:

- methodological and ethical considerations
- gender and/or cultural considerations
- the accuracy and clarity of the concepts
- practical applications and implications of the findings
- assumptions and biases
- supporting and/or contradictory evidence
- relevant issues and debates (e.g. holism vs. reductionism).

Responses referring to research on animals, such as Harlow’s study of rhesus monkeys should be linked to attachment in humans. Responses that do not explicitly make any link to human behaviour should be awarded up to a maximum of **[3]** for criterion C: use of research to support the answer. All remaining criteria should be awarded marks according to the markbands independently and could achieve up to full marks.

If the candidate addresses only strengths or only limitations, the response should be awarded up to a maximum of **[3]** for criterion D: critical thinking. All remaining criteria should be awarded marks according to the best fit approach.

6. Discuss **one or more** theories/models of cognitive development. **[22]**

Refer to the paper 2 assessment criteria when awarding marks.

The command term "discuss" requires candidates to offer a considered review of one or more theories/models of cognitive development.

Theories/models may include, but are not limited to:

- Piaget's theory of cognitive development
- Vygotsky's sociocultural theory
- Bruner's theory suggesting that thinking is the result of cognitive development.

Relevant studies may include, but are not limited to:

- Piaget and Inhelder's (1956) three-mountain study
- Baillargeon (1986); Baillargeon and Graver's (1987) VOE research
- Bower and Wishart's (1977) study on object permanence
- Samuel and Bryant's (1984) study on conservation experiment
- Chi's (1978) study on processing skills
- Nichols's (1996) study testing Vygotsky's theory
- Giedd's (2004) MRI studies on normal brain development
- Wood et al.'s (1976) study on the role of tutoring in problem-solving.

Discussion may include, but is not limited to:

- methodological and ethical considerations of research addressed within the context of the question
- gender/cultural considerations
- stages versus continuous process
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- implications and practical applications of the findings
- assumptions and biases
- supporting and/or contradictory evidence
- comparison of theories to draw out relevant strengths and weaknesses of each (eg the information-processing approach to cognitive development; neurobiological explanations of cognitive development)
- relevant issues and debates and approaches.

Candidates may discuss one theory/model of cognitive development in order to demonstrate depth of knowledge or may discuss a larger number of theories/models in order to demonstrate the breadth of knowledge. Both approaches are equally acceptable.

Health psychology

7. Evaluate **one or more** studies related to the effectiveness of **one or more** health promotion programmes. **[22]**

Refer to the paper 2 assessment criteria when awarding marks.

The command term "evaluate" requires candidates to make an appraisal by weighing up strengths and limitations of one or more studies related to the effectiveness of one or more health promotion programmes. Although a discussion of both strengths and limitations should be addressed, it does not have to be evenly balanced to gain high marks.

Relevant studies may include, but is not limited to:

- Sly et al.'s (2002) survey on community based anti-smoking promotion among teens
- Holm et al.'s (2002) survey on the efficiency of health campaigns
- Huhman et al.'s (2007) evaluation of a national physical activity intervention for children (VERB campaign)
- Lowe et al.'s (2011) case study on the "Food Dudes" programme in the UK
- Sanderson and Yopuk's (2007) study on social cognitive theory and safe-sex behaviour
- Pechmann and Reibling's (2006) study of the effectiveness of fear campaigns (eg anti-smoking)
- Yee et al.'s (2006) study of effectiveness of strategies to change behaviours related to obesity
- Prochaska and Di Clemente's (1983) 'Longitudinal research on the effectiveness of the Integrative Model of change for smoking behaviour'.

Evaluation may include, but is not limited to:

- methodological considerations (eg, generalization of findings)
- cultural, age and/or gender considerations
- supporting and/or contradictory empirical evidence
- how the findings of research have been interpreted and applied
- implications of the findings
- issues of validity and reliability
- approaches and debates (e.g. free will vs. determinism)

If the candidate addresses only strengths or only limitations, the response should be awarded up to a maximum of **[3]** for criterion D: critical thinking. All remaining criteria should be awarded marks according to the best fit approach.

Candidates may evaluate one study in order to demonstrate depth of knowledge, or may evaluate a greater number of studies in order to demonstrate breadth of knowledge. Both approaches are equally acceptable.

In questions that ask for evaluation of studies, in criterion A we assess to what extent is the response focused on the question. Responses that are generic, lack a focus on the specific question and seem as pre-prepared essays of relevance to the general topic (but not to evaluation of one or more studies) should be awarded **[0]** for this criterion. If the response identifies which studies will be evaluated but there is also extra information that is not relevant or necessary for the specific question then **[1]** should be awarded. Responses that are clearly focused on evaluating one or more studies should be awarded **[2]**.

Marks awarded for criterion B should refer to definitions of terms and concepts. Overall this could include some knowledge of topic but more specifically knowledge and understanding related to research methods and ethics of chosen studies. Marks for criterion B should be awarded as follows:

- 1–2 General knowledge of topic (effectiveness of health promotion programmes)
- 3–4 Knowledge of general research terms and concepts is provided but lacks detail. Some minor errors might be present
- 5–6 Relevant knowledge of specific research methods material is utilized and concepts are defined within the context of the specific study.

Marks awarded for criterion C assess the quality of the description of as study/studies and assess how well the student linked the findings of the study to the question - this doesn't have to be very sophisticated or long for these questions but still the aim or the conclusion should be linked to the topic of the specific question.

Criterion D assesses how well the student is explaining strengths and limitations of the study/studies.

8. To what extent are **one or more** health problems influenced by biological factors? **[22]**

Refer to the paper 2 assessment criteria when awarding marks.

The command term “to what extent” requires candidates to consider the influence of biological factors on health problems.

It is appropriate and useful for candidates to address sociocultural and/or cognitive factors in order to respond to the command term “to what extent”.

Candidates are likely to write about health problems in relation to health topics in the psychology guide, namely stress, obesity, addiction, chronic pain, and/or sexual health.

Biological factors influencing health problems may include, but are not limited to:

- genetics
- hormones
- physiological responses
- brain chemistry.

Relevant studies may include, but are not limited to:

- DiFranza et al.’s (2005) research on biological factors in adolescents’ smoking history and addiction
- Powel and Chaloupka’s (2003) study on the role of parental influences on the probability of youth smoking
- Unger et al.’s (2001) cross-cultural survey on adolescent smoking considering the peer factor as well as individualistic and collectivistic cultures
- Volkow et al.’s (2002) fMRI study of obese individuals indicating one possible explanation of overweight (support of the theory of compulsive overeating)
- Prentice and Jebb’s (1995) correlational study on increase in obesity and car ownership and television viewing
- Teevale et al.’s (2010) mixed-method study on the role of sociocultural factors in obesity in Pacific adolescents and their parents
- Gibson and Helme’s (2000) study on cognitive factors and the experience of pain and suffering in older persons
- Speisman et al.’s (1964) study on the role of cognition in mediating stress caused by watching circumcision.

When responding to the command term “to what extent”, considerations may include, but are not limited to:

- degree of empirical support
- methodological and/or ethical considerations of research addressed within the context of the question (e.g. generalizability of findings)
- cultural, age and/or gender considerations
- possible theoretical assumptions and/or biases
- issues of validity and reliability
- alternative explanations or findings
- comparison of explanations/factors
- relevant approaches and issues and debates
- practical applications and real world implications.

Candidates may discuss one biological factor in order to demonstrate depth of knowledge, or may discuss a greater number of factors in order to demonstrate breadth of knowledge. Both approaches are equally acceptable.

9. Discuss the biopsychosocial model of health and well-being. **[22]**

Refer to the paper 2 assessment criteria when awarding marks.

The command term “discuss” requires candidates to offer a considered review of the biopsychosocial model of health and well-being.

The biopsychosocial model uses a holistic approach to understanding health and illness that incorporates sociocultural factors, psychological factors, biological factors and individual behaviour.

Relevant research may include, but is not limited to:

- Steptoe and Marmot’s (2003) study (using questionnaires) looking at differences in stress responses
- Prentice and Jebb’s (1995) correlational study on increase in obesity and car ownership and television viewing
- Olson and Strawderman’s (2003) study investigating how the biopsychosocial model predicts gestational weight gain
- Sorensen’s (1998) longitudinal study on genetic variability and the role of environment on obesity
- Gatchel and Peng et al.’s (2007) review of the biopsychosocial approach to chronic pain
- Alonso’s (2004) study on the biopsychosocial model and the evolution of health concepts
- Hoffman and Driscoll’s (2000) study on health promotion and disease prevention using the biopsychosocial model.

Critical discussion points may include, but are not limited to:

- methodological and ethical considerations of research addressed within the context of the question
- cultural/gender considerations
- usefulness of application
- degree of empirical support relevant approaches and issues and debates
- comparison with alternative model (e.g. the biomedical model) if addressed within the context of the question

Psychology of human relationships

10. Discuss **one or more** factors influencing by-standerism. **[22]**

Refer to the paper 2 assessment criteria when awarding marks.

The command term "discuss" requires candidates to offer a considered review of one or more factors influencing by-standerism.

Candidates may discuss one factor influencing by-standerism in order to demonstrate depth of knowledge, or may discuss a larger number of factors in order to demonstrate breadth of knowledge. Both approaches are equally acceptable.

Factors influencing by-standerism may include, but are not limited to:

- group size
- diffusion of responsibility
- pluralistic ignorance
- normative social influence (conformity)
- cultural considerations
- costs/rewards of helping behaviour
- dispositional characteristics.

Relevant studies may include, but are not limited to:

- Latane and Darley's (1970; 1968) studies of unresponsive by-stander
- Darley and Batson's (1973) study on the role of situational and dispositional factors
- Piliavin et al.'s (1969) subway study of helping behaviour
- Oliner and Oliner's (1988) study of dispositional factors in by-standerism
- Levine's (2005) study on situational characteristics in football fans
- Drury et al.'s (2009) virtual reality study on by-standerism.

Critical discussion may include, but is not limited to:

- degree of empirical support
- methodological and ethical considerations of research addressed within the context of the question
- real life applications and implications of the findings
- relevant approaches, issues and debates (e.g. free will vs. determinism; nature vs. nurture)
- interaction or antagonistic interaction between factors (e.g. dispositional vs. situational factors)
- comparison with alternative explanations.

11. Evaluate **one or more** research methods used to investigate group dynamics. **[22]**

Refer to the paper 2 assessment criteria when awarding marks.

The command term "evaluate" requires candidates to make an appraisal of one or more research methods used to investigate group dynamics by weighing up the strengths and limitations of the research method(s). Although a discussion of both strengths and limitations is required, it does not have to be evenly balanced to gain high marks.

Candidates may evaluate one research method in order to demonstrate depth of knowledge, or may evaluate a greater number of research methods in order to demonstrate breadth of knowledge. Both approaches are equally acceptable.

Relevant research methods could include, but are not limited to:
- correlational studies
- case study
- experiments
- interviews (*e.g.* semi-structured)
- naturalistic observations
- meta-analysis.

Relevant research may include, but is not limited to:
- Dawes et al.'s (2007) experiment on the degree of cooperation in the prisoner's dilemma game
- Sherif et al.'s (1961) field experiment investigating competition between groups 'Robbers Cave'
- Harris and Fiske's (2006) experiment on biological correlates of stereotypes and prejudice
- Peterson et al.'s (1998) correlational study of group dynamics in top management teams
- Vigier and Spencer-Oatey's (2018) case study on the link of rules, asymmetries in language fluency and team dynamics in culturally diverse teams
- Pettigrew and Tropp's (2006) meta-analysis on the relationship between group contact and prejudice.

Evaluation may include, but is not limited to:
- the appropriateness of the method
- possible theoretical assumptions and/or biases in relation to the chosen method
- the issues of validity and reliability
- correlation vs. causation
- methodological and or ethical considerations (e.g. generalizability of findings)
- comparison of methods to draw out relevant strengths and weaknesses
- combining method (triangulation)
- practical applications and implications of findings
- relevant approaches and issues and debates.

If the candidate addresses only strengths or only limitations, the response should be awarded up to a maximum of **[3]** for criterion D: critical thinking. All remaining criteria should be awarded marks according to the best fit approach.

For questions that ask for evaluation of research methods, marks awarded for criterion B should refer to definitions of terms and concepts relevant for research methodology. Overall, this includes some knowledge of the specific topic (group dynamics) and general knowledge and understanding related to research methods and ethics (for example definitions of relevant terms in research methodology or ethics in research). Marks awarded for criterion C assess the quality of the description of a study/studies and assess how well the student linked aspects of the study to the question.

12. To what extent are personal relationships influenced by biological factors? **[22]**

Refer to the paper 2 assessment criteria when awarding marks.

The command term "to what extent" requires candidates to consider the contribution of biological factors in personal relationships.

It is appropriate and useful for candidates to address cognitive and/or sociocultural factors influencing personal relationships in order to respond to the command term "to what extent".

Candidates may address specific types of personal relationships (*eg* romantic, peer, parent–adolescent) or personal relationships in general. Both approaches are equally acceptable.

Biological factors influencing personal relationships may include, but are not limited to:

- pheromones
- hormones
- evolutionary explanations (e.g. parental investment theory)
- brain chemistry (neurotransmitters)

Relevant research may include, but is not limited to:

- Buss et al.'s (1989) study on the evolutionary theory as a factor for mate selection
- Fisher et al.'s (2005) study on the brain systems involved in early-stage intense romantic love
- Clarke and Hatfield 's (1989) study on gender differences in accepting casual sex: an evolutionary view
- Wedekind's (1995) study on the role of body odour in personal relationships
- Walster et al.'s (1966) matching hypothesis: rating own level of attractiveness and matching it with potential partner
- Karandashev et al.'s (2020) study on the cultural factors of sensory preferences in romantic attraction
- Hazan and Shaver's (1987) study on attachment and personal relationships.

Discussion may include, but is not limited to:

- degree of empirical support
- methodological and ethical considerations of research addressed within the context of the question
- application of findings and real life implications
- cultural and/or gender considerations
- interaction between factors
- the accuracy and clarity of the concepts
- correlation vs. causation
- comparison with non-biological factors to illustrate strengths and limitations of biological explanations/factors
- relevant issues and debates (e.g. nature vs. nurture; reductionism vs. holism).