

MARKSCHEME

November 2000

PSYCHOLOGY

Higher Level

Paper 2

SECTION A

- 1. State *two* essential features of an experiment that this research study lacks. [2 marks]**

Experimenter does not manipulate/control independent variable. Participants are not allocated at random to conditions. Points concerning the laboratory are irrelevant. Give [1 mark] for an expression that there is not a lot of control in this research study, if it is expressed clearly enough.

- 2. State an appropriate research hypothesis for the differences in tiredness. [2 marks]**

Prediction of a difference between the two groups on tiredness scores, whether 'significant' or not, are adequate for [1 mark] but a **direction** (Internet group higher) should be stated for [2 marks] (given the summary of background thinking), and as long as it is clear that the difference is between the two specific groups.

- 3. State a precise null hypothesis for the correlation between Internet use and sociability. [2 marks]**

The [population] correlation between Internet use scores and sociability scores is zero. [2 marks] wherever the null hypothesis is statistical and refers somehow to an existing lack of correlation in general. Where the samples are clearly intended give only [1 mark] and the same for any statement in a predictive form such as the inevitable 'there will be no [significant] correlation.....' which is **not** a null hypothesis but an implication of it and what should actually happen most of the time if the null hypothesis is true.

4. Some features of the control group were similar to those in the experimental group.

- (a) Explain why it is important that the control group should be similar to the experimental group.**

[2 marks]

Any uncontrolled differences between the two might confound the [interpretation of] results. Give *[2 marks]* wherever this is clear even without technical terms, *e.g.*: if the two groups differed in some important way that factor might cause the difference in tiredness and not the difference in Internet use. No mark where it is only said that, *e.g.*, ‘the results might be biased’ unless some kind of consistent difference or other more specific and accurate point is described.

- (b) State two ways in which the two groups are similar.**

[2 marks]

Both had visited the store recently and both (most) must live in the same region. The groups did not differ in sociability or tiredness at the beginning of the study.

- (c) Give two important differences between the two groups which might possibly confound the research findings. Give a reason for the possible confounding in each case.**

[4 marks]

The control group had not bought any equipment (might not have the same economic status/amounts of money); The control group did not own a computer (different motivations towards computers); The control group were selected at the store on one day (specific types of person that day *e.g.* those on holiday; they were selected there rather than visited at home so might react differently). It is also possible that individuals from either control or experimental groups might be required to use the Internet in their work place.

- 5. (a) What is meant by the phrase ‘the difference between the two groups means for sociability was significant ($p < 0.05$)’? (lines 17 - 18)**

[2 marks]

Hopefully candidates will state that the probability of obtaining the difference under the null hypothesis was less than 0.05. All similar accurate explanations receive *[2 marks]*. ‘The probability of the difference occurring by chance is less than 0.05’ is incomplete and can receive *[1 mark]*. Similar likely *[1 mark]* answers will be:

‘The experimenters can be 95% certain that the difference did not occur by chance’ ‘Such a difference would only occur 5% of the time or less by chance’.

Generally, an answer using ‘by chance’ and mentioning 5% or 95% in the appropriate direction should receive *[2 marks]* whereas, ‘The results did not occur by chance’ and similar answers should receive only *[1 mark]*.

- (b) **Of the two significant differences mentioned in the report (lines 18 - 19), which shows the higher level of significance? Give a reason for your answer.** [2 marks]

That for tiredness – because 0.01 is less than 0.05. A fuller explanation tends to run into parts of the last answer – e.g. for the tiredness result the probability of the result occurring under H_0 is even less than for the sociability result – the probability is 5 times lower. Give credit here, if full marks are not already awarded, where a point is made that could not be credited in the last answer through its lack of clarity there.

6. **Explain why the researchers who assessed the interview content were kept ‘unaware of the research hypothesis’. (lines 14 - 15)** [2 marks]

So they could not bias the assessments (good enough for only [1 mark]) in the direction of the hypothesis [2 marks]; Candidates could mention a ‘blind’ procedure but use of the term ‘blind’ alone does not ‘explain’ so [1 mark] only for the likes of: ‘because they used a blind procedure’.

7. **The tiredness levels were assessed through the use of interviews.**

- (a) **State one advantage of using interviews compared with the use of questionnaires. Give a reason for this advantage.** [2 marks]

Advantage: interviewer can pick up on misunderstandings; some participants might be inhibited by clinical nature of questionnaire; perhaps easier for participant to look good or mislead on a questionnaire.

[1 mark] for an advantage; [1 mark] for a good, relevant reason. Do not compensate a well described advantage if no clear reason is included.

- (b) **State one disadvantage of using interviews compared with the use of questionnaires. Give a reason for this disadvantage.** [2 marks]

Disadvantage: no interpersonal variables to confound the data gathering; give a mark if the statement amounts to this point; could also argue that the process would be less subjective, less subject to interviewer bias in recording data or asking questions; could answer in terms of strict control since all participants receive exactly the same wording, order etc. No mark for ‘quicker’ because this isn’t necessarily so.

[1 mark] a disadvantage; [1 mark] for a good, relevant reason. Do not compensate a well described advantage if no clear reason is included.

8. **The raw data in Table I below are the scores on sociability for the control group. Arrange these into a stem and leaf diagram (note: no special paper is required for this procedure).**

[5 marks]

This should look something like:

Stem	Leaves
1	011245789
2	00111589
3	1224556

Give [1 mark] for the notion of a split into stem and leaves; [1 mark] for appropriate stems – these could be 1, 1* *etc.* where 1* is 15 onwards; [1 mark] if the leaves are just the digit portions (candidates may try to include the whole score as leaves); [1 mark] for appropriate order in the leaves (ascending; correct breaks) and [1 mark] for general accuracy in the leaves as a whole (permit *e.g.* 1 error).

9. **The participants were contacted by using customer addresses held by the computer store. Imagine you are the researcher making the first face-to-face contact with the customer. Outline three ethical issues that you should consider when asking people to participate in this research project.**

[3 marks]

Assure of confidentiality, anonymity, no harm. Candidates might elaborate on the confidentiality point considering the way in which this group have been contacted already possibly an invasion of privacy, so give credit where this is dealt with in a relevant ethical fashion (*e.g.* reassurances that participants' addresses will not be passed on further; apologies for intrusion *etc.*).

10. **One participant scored extremely low on sociability and demonstrated worrying levels of general health through the interview process. On ethical grounds how might the researchers respond?**

[4 marks]

Candidates should produce a few lines of discussion staying relevant to the problem described in the question. That is, ignore items of ethical responsibility that have no obvious relationship with the discovery of worrying scores on health and sociability (such as the right to withdraw from an experiment) unless clearly made relevant. Also ignore points that concern the avoidance of litigation (*e.g.* 'the researchers should ensure that the participant is not badly affected by the study in order to clear themselves of responsibility'). Candidates might discuss the researchers' responsibility to debrief and to discuss issues raised by the participant, offering reassurances and counselling or further professional support where possible and appropriate. Award at least [2 marks] where offering some sort of help/advice is recognised. Award [3 marks] or [4 marks] for more substantial and/or more fully explored answers.

- 11. There was a negative correlation between Internet use and level of sociability (line 20). Explain the term *negative correlation* in the context of this research.** [2 marks]

‘As one increases the other decreases’ is a fair enough statement for [1 mark]. More specific answers gain the [2 marks], such as ‘increasing sociability scores are associated with decreasing Internet scores’. A single word – ‘inverse’ – can gain [1 mark], given the command word used – ‘state’ – but this term ‘inverse’ should be somehow explained, even if only incompletely, for [2 marks].

- 12. Explain why the researchers were cautious in their suggestion that Internet use is a cause of the changes in sociability and tiredness. (line 21)** [3 marks]

A simple recognition that ‘support’ for theories is provided in research studies, not proof, would be enough for [1 mark]. Better answers will take on the no-cause form correlation theme more or less successfully. ‘You can’t assume cause from a correlation’ is worth [1 mark] whereas an answer that clearly but briefly explains why and/or includes consideration of the fact that the two groups started equal yet end up apart, will be worth the full [3 marks].

- 13. The tiredness data are treated as ordinal level data. State an appropriate test of difference between the two groups for the tiredness data. Give a reason for your choice, other than the level of data measurement.** [2 marks]

Mann-Whitney; it is a test of difference/unrelated design (or between groups, independent samples/groups *etc.*).

- 14. Consider the sample of Internet users selected for this study. Give two reasons why the ways in which they were selected did not produce a random sample of the general population.** [2 marks]

Only those agreeing to take part are selected into the samples; only those using the computer shop, living in that region and supplying their address/telephone number to the shop, agreeing to stop and talk can be selected. Any two of these and any other more ingenious but valid and relevant given the text of the research scenario provided.

- 15. There are weaknesses in the design of this research that make it problematic to assume that Internet use was a direct cause of increased tiredness and decreased sociability. Describe changes to this design *or* a new design, which could eliminate some of these weaknesses.**

[5 marks]

It is difficult to predict the entire range of possible answers to this question. The idea here is to permit good candidates to ‘shine’ in using their research methods competence to create solutions to recognised design weaknesses. Guidelines only are then: credit the plural of ‘weaknesses’ generously, given there are only *[5 marks]* available. Two would be sufficient provided the account of the design clearly and substantially deals with them. One weakness mentioned and dealt with can at most receive *[3 marks]*. Knee-jerk reactions like ‘Take more participants’ can only receive *[1 mark]* since the sample size is not specified in the scenario and significance is anyway obtained. The question does not ask for weaknesses to be described first but good answers would usually relate their design improvements clearly to the weaknesses they deal with. It is just feasible that a very good answer will not make direct references to the weakness dealt with but do give full credit where a good design description clearly would eliminate several of the weaknesses (*e.g.* description of a true experiment in which ‘participants would be allocated at random to conditions in order to balance out any participant variation on sociability and tiredness’). Give credit for those who recognise the scenario as a quasi-experiment with participant selection and variable control problems. A ‘true’ experiment, well described, would deal with these but it is possible to modify the original design with good protesting and perhaps additional observation or questionnaire data to reinforce the conclusions of the study.

SECTION B

Biological bases of behaviour

- 16. Examine the motivational and/or emotional factors that may influence the regulation of food intake in humans.**

[25 marks]

Motivational and/or emotional factors that affect food intake are fairly numerous. Despair, loneliness, grief are emotional factors that affect food intake, whereas pressure of work, stress to do well in performance sports or a perceived need to become more attractive to others, are examples of motivation that can affect food intake. Candidates may also refer to studies that involve the hypothalamus and its influence in regulating glucose fats and amino acids using homeostatic mechanisms. It may be argued by some candidates that genetic factors also influence food intake and that this reduces the extent to which motivational or emotional factors are involved.

It is most likely that many answers will focus on bulimia or anorexia nervosa. Several studies show that anorexia appears mainly in females in western societies. Bruch, Garfinkel and Gardner in their distorted body image work have shown that anorexics perceive themselves as fatter than they are in reality. Explanations include the possibility that some girls want to preserve their boyish shape and size and to avoid the difficulties associated with becoming a mature woman. These same girls may also intend to stop their menstruation. Garfinkel and Gardner have proposed that a malfunction of the hypothalamus may lead to a diminished hormone secretion and a consequent loss of appetite.

It is possible that candidates may discuss how motivational/emotional factors may promote a healthy diet and regular exercise. Providing that this approach is made relevant and based on empirical evidence, it should receive credit.

Candidates should focus on psychological evidence in this question. Anecdotal evidence should receive little, if any credit.

- 17. Explain how degenerative disease may damage the brain and how the degeneration may be arrested or slowed down.**

[25 marks]

Alzheimer's is a progressive disease in which the neurons degenerate and the size of the brain shrinks and brain waves become slower. Since the disease is accompanied by failing memory and a marked decline in learning abilities, it has been suspected and confirmed that acetylcholine depletion exists in patients with Alzheimer's. Butt *et al* have shown increased acetylcholine activity in rats which are learning discrimination between one stimulus and another. Brain grafting techniques of material rich in acetylcholine has proved successful in rats although this treatment is not yet ready for humans. Good diet, exercise and keeping occupied are current treatments with occasional use of tranquillising drugs when needed.

Parkinson's disease has been well documented. The disease is caused by the degeneration of dopamine releasing neurons in the substantial nigra. PET scans have showed that areas of the brain which normally use dopamine and are responsible for movement activities are less active in Parkinson patients. As the basal ganglia degenerate because of the lack of dopamine, they are unable to control the nerve pathways to the muscles that control muscle contractions. The result is over-tensed muscles which cause tremor and slow movements. The main treatments are drugs or more controversially the use of dopamine secreting tissue obtained from aborted fetuses.

The effect of Alzheimer's disease is general loss of memory, accompanied in some cases by depression and anxiety. This is followed by severe memory loss and eventually by chronic disorientation and a loss of a sense of purpose. In Parkinson's the body displays tremor and there is a distinct loss of coordination in which an unbalanced walk is evidenced and sometimes uncontrolled tiny running steps. The intellect is unimpaired until much later in the disease.

18. (a) Describe what is meant by cortical activity in the brain.

[13 marks]

Candidates may take several approaches to this part of the question. For example a structural-functional approach may be taken but this should address the concept of cortical activity. An additional or alternative approach could include an examination of neural activity and its effect on establishing neural pathways.

Cortical activity is the electro-chemical activity that constantly occurs in the cortex. Its effect is to fire a chain or group of neurons that are connected by bundles of nerve fibres or axons. Repeated exposure to the same message means that some pathways are selected and gradually made larger. Groups of neurons that are not fired over a long period of time tend to atrophy through lack of use. Candidates may well describe the way in which excitatory or inhibitory chemicals are involved in cortical activity at the synapses and this can also earn marks.

(b) Explain methods of how psychologists have investigated localisation of functions within the human brain.

[12 marks]

Candidates should indicate an understanding of what is meant by localisation. Localisation of function has been investigated in several ways including mechanical stimulation of areas of the brain during surgery. More recent techniques have involved electrical recording (EEG) single cell recording techniques, and the various scanning techniques – computer axial tomography (CAT), magnetic resonance imaging (MRI) and positron emission tomography (PET). Scanning techniques have been invaluable since they allow investigation of specific areas whilst the brain area is operating. This in particular allows psychologists to identify centres for specific processing such as speech, motor movement, balance or visual processing.

If only one method is explained, award a maximum of **[6 marks]** for part (b).

Comparative psychology

19. (a) Describe *two* examples of apparent altruism in social insects.

[13 marks]

Bees and ants are the most likely choice of social insect that most candidates will choose although there are others such as wasps which are equally valid. In honey bee hives, each individual bee shares the same genes as its sister bees (there are few males), since all descend from the same queen bee. If Dawkins' idea of selfish genes is applied, their apparent altruistic behaviour in sacrificing their own lives to defend the hive against intruders, is shown to be an example where genetic programming induces bees to act in this way. The altruism is only apparent since they are defending their own shared genes. Similar sacrificial behaviour is shown by army ants when their immense number of individuals march in the search for food and a new site. The leading ants may have to form living bridges across streams for their fellow ants to cross. Many ants die in this behaviour, but their behaviour is 'wired in'. Candidates who describe only one example of altruism should receive a maximum of [7 marks].

(b) Evaluate explanations for altruistic behaviour in social insects.

[12 marks]

Such behaviours are not strictly speaking 'altruistic'. The instinctive behaviour demonstrated by these insects only serves to protect their shared genes. However, in another sense, the actions of the altruists do demonstrate a sacrifice of their own fitness and an enhancement of the fitness of the recipients. Some candidates will argue that in ants specifically, a number of individuals are genetically programmed to specialise only in defence or attack, and that altruism and fitness debates do not enter into the discussion.

20. Describe and evaluate the use of non-human animals in research studies concerned with visual perceptual processes.

[25 marks]

Candidates have a large choice of studies from which to choose and so long as those are relevant to visual perception they should be credited. Amongst the most popular studies could be those conducted by Hubel and Weisel in their work with cats and the identification of single cell and multiple cell firing to different stimuli presented to the visual field. Cats were also used in Blakemore and Cooper's vertical and horizontal line environments where kittens raised under either of these conditions were eventually able to respond to lines of the same orientation. The other cells had atrophied through lack of use. Held and Hein also used kittens in the carousel experiments with 'active' and 'passive' conditions. Only the 'active' kittens could guide their paw placement. Other studies have been conducted involving chicks wearing prisms over their eyes to study the effects of re-learning where to peck for food. The eyes of salamanders have also been changed from left to right and vice versa. It was found that the nerves re-generated with fibres leading to the correct eyes even though they were in a new position.

These studies can certainly all be evaluated on ethical grounds and each of them can be claimed to be cruel. But the evidence from these studies has been useful in helping us to understand the process of visual perception in animals including humans. We know that infants have a 'plasticity stage' early in their development in which they must be placed in a stimuli-rich visual environment if they are to develop good vision.

If only one study is mentioned then candidates should be awarded a maximum of *[13 marks]*. Candidates who present just description without evaluation should also receive a maximum of *[13 marks]*.

21. Explain the role of the dominant male and/or the dominant female in courtship and mating behaviour in non-human animals.

[25 marks]

Both dominant males and females achieve their roles in a hierarchical group through a competitive process which usually involves aggression and sometimes a fight to the death. It may be argued by some candidates that what such competition achieves is the passing on of genes by the fittest animals. In line with Darwinian theory the fittest animals survive. The neo-Darwinists, Dawkins or Bennett for example, suggest that it is not the individual animal that is important, but rather its genes. The gene line is thus kept healthy. At the same time the less fit animals, and their genes, are defeated and hence their genes are not passed on.

While in most species, it is the male who is dominant, in some rarer cases (*e.g.* phalaroea south American duck species that lives in marshes) it is the female which is dominant and renders her services to a number of males. She competes with other females for access to males, and presents eggs to males who sit at separate nests to incubate the eggs and raise the hatchings.

In ostriches, the dominant female ‘owns’ a nest site and invites satellite females to lay their eggs around the outside of her own eggs to lessen the chance of these being eaten by predators. The offspring of her successful eggs may then contain genes that inherit similar behaviour traits.

Examiners should be aware that full marks can be gained for either male or female dominance, or a combination of the two.

Delinquency and crime

22. **To what extent do cultural values explain the differences in reported crime rates between different racial groups?**

[25 marks]

The term 'to what extent' invites candidates to critically consider whether incidence of reported crime is due to cultural issues or to other factors, which may also play a part. Therefore, a descriptive response should not receive more than [13 marks]. Candidates should identify the role of cultural values in differential crime rates. Candidates may consider the differences between the cultural norms and values of collectivist and individualistic cultures together with the influence of social and cultural norms on an individual's behaviour. Arguments should be supported through reference to appropriate examples. However, if these are anecdotal and subjective in nature, they should not receive any credit. Alternative explanations for differences in crime rates should then be introduced *e.g.* the theories of Hall, Lea and Young. Gilroy's argument that black criminality is a myth could also be discussed. Candidates should also include some discussion of the accuracy of criminal statistics and the evidence for institutionalised racism *e.g.* Box, who queries the reliability of official statistics gathered in the UK.

23. (a) **Describe two theories of social identity development.**

[10 marks]

Candidates are required to describe two theories of social identity development. Therefore, responses which include reference to only one theory should be awarded a maximum of [5 marks]. The most obvious examples would be Tajfel's theory which refers to social identity and its relationship to group membership. Candidates could also refer to the influence of cognitive factors in social categorisation as identified by Moscovici. Marks should be awarded for a competent description of any two appropriate theories.

- (b) **Discuss the ways in which criminal behaviour may be influenced by social identity.**

[15 marks]

In the second part of the question, candidates must discuss the extent to which criminal behaviour is influenced by social identity. Candidates may refer to the importance of group membership, status, role models, safety *etc.* Candidates may also wish to consider cross-cultural differences in this context, distinguishing between individualistic and collectivist cultures. The injunction 'discuss' requires the candidate to support their opinion with 'as much evidence and sound argument as possible' and a maximum of [8 marks] should be awarded for primarily descriptive responses.

24. Critically consider whether criminal behaviour is a manifestation of blocked access to socially legitimate goals.

[25 marks]

Candidates should explain appropriate theories which argue that crime may be due to blocked access to socially legitimate goals *e.g.* the work of Merton who argues that although all members of a society may share the same goals (*e.g.* the acquisition of material goods, status, *etc.*), the ability to achieve those goals is not equally distributed within a society. This may lead to criminal behaviour. Cohen argues that status frustration may lead to the emergence of a delinquent subculture whilst Lea and Young argue that relative deprivation and marginalisation also play a part. Candidates should produce a critical consideration of the validity of these arguments as a satisfactory explanation for all criminal behaviour. The arguments should be supported by reference to appropriate research if candidates are to receive marks in the higher bands. A descriptive appropriate which does not discuss the issues in any depth should receive a maximum of *[13 marks]*.

Dysfunctional behaviour

25. Compare genetic and environmental aetiologies for *one* dysfunctional disorder.

[25 marks]

Candidates may choose to consider the similarities and differences between disorders such as manic-depressive disorder and phobias but the majority are likely to focus on the Higher Level extension, schizophrenia and related disorders.

From a description of the symptoms associated with the syndrome, and an outline of the two aetiologies, candidates should be able to identify similarities and differences in assumed causation.

Answers attracting marks in the higher bands will evaluate the contrasting aetiologies both in terms of supporting or challenging empirical research findings, and in the methodologies used. A sound conclusion may well reflect current thinking which suggests a genetic predisposition predisposes an individual to the disorder and that additional environmental factors are required to ‘trigger’ the disorder.

Award a maximum of **[13 marks]** to essays simply describing aetiologies without attempting evaluation, or to those responses which either compare or contrast but not both.

26. (a) Define *dysfunctional behaviour*, with examples.

[5 marks]

Definitions should identify behaviours which interfere with the individual’s ability to achieve the everyday necessities of living – daily functioning, being unable to work, losing the motivation to care for oneself effectively, *etc.* Examples may include anxiety disorders (*e.g.* phobias or post-traumatic stress disorder), affective disorders – unipolar and bipolar depression, schizophrenia, personality disorders, eating disorders, *etc.*

(b) With reference to cross-cultural issues, account for the preference of many psychologists for the use of the term ‘dysfunctional’ rather than ‘abnormal’ when referring to certain types of human behaviour.

[20 marks]

This section of the question requires the candidate to present a reasoned case for the use of the term in preference to the label ‘abnormal’. In highlighting its limitations, responses may refer to ethical as well as practical implications associated with the use of the latter term. Candidates should demonstrate an awareness and understanding of the range of issues which may contribute to cultural variation in what is considered ‘abnormal’ behaviour.

Answers excluding explicit reference to cross-cultural issues should attract a maximum of **[10 marks]**.

27. (a) **Outline the underpinning assumptions about dysfunctional behaviour from both the humanistic and the biomedical models.**

[13 marks]

The biomedical model assumes a direct relationship between behaviour and the biology of the individual, viewing dysfunctional behaviour as having physical causes thus being a form of illness which is amenable to treatment using somatic therapy. Biochemical theories assume dysfunctional behaviours result from imbalance in neurochemicals, whilst genetic theories assume transmission of disorders in DNA.

Humanistic psychologists assume dysfunctional behaviours arise because external factors prevent personal growth, resulting in a distorted self-concept. This affects our behaviours by causing us to deny our true feelings, interferes with our awareness of our own uniqueness, and blocks our potential for growth. Strictly speaking, the Humanistic approach does not have a model of dysfunctional behaviour. Person-centred therapies aim to remove blocks to self-development, assuming that a supportive environment will allow a client to achieve self-awareness, self-acceptance, personal fulfilment and self-actualisation. Candidates who outline only one model should receive a maximum of [7 marks].

- (b) **Evaluate the effectiveness of the therapies based on *one* of the two approaches.**

[12 marks]

Responses to this require an appraisal of either somatic or person-centred therapies. The biomedical approach utilises chemotherapy, electroconvulsive therapy and psychosurgery in the treatment of dysfunctional behaviour, which may be evaluated from both a practical and ethical viewpoint. Humanistic therapies (Rogers) utilise non-directive techniques, focusing on the client's feelings in the here-and-now. Gestalt therapy (Perls) adopts a directive approach, also aimed at helping the individual to integrate conflicting parts of the self concept.

Better quality answers will acknowledge the difficulties in determining criterion for success, when trying to assess the effectiveness of therapy. Candidates discussing biomedical treatments may refer to studies comparing chemotherapy and psychotherapies. The issue of therapist effectiveness may be addressed in Humanistic answers, *e.g.* Truax & Carkhuff, 1964.

Award marks in the highest bands for answers explicitly coming to an informed judgement about the effectiveness of the selected therapy. Essays simply describing the selected therapy should attract a maximum of [6 marks].

The psychology of gender

- 28. (a) Describe the controversial findings of research relating to the psychology of gender.**

[13 marks]

This question firstly invites candidates to describe some of the areas of controversial findings in the area of psychology of gender and to refer to the research that leads to these controversies.

Candidates may refer to differences in intelligence, empathy, social behaviour (*e.g.* aggression, nurturing behaviour, understanding non-verbal communication, achievement motivation), levels of activity, differences in children in toy choice.

- (b) Evaluate the possible methodological weaknesses of the research which may have contributed to these controversies.**

[12 marks]

For gaining **[12 marks]** in part (b) candidates should identify the possible reasons for this equivocal evidence through evaluation of research. Candidates do not necessarily have to mention any specific names of researchers, but they should identify the possible methodological weaknesses leading to these controversies, *e.g.* experiments controlling all the variables can't be conducted for ethical reasons, several findings are based on small and unrepresentative samples, difficulties occur when trying to separate hereditary factors from environmental influences; methods used, *e.g.* surveys, may not be so reliable; expectancy effect and researcher bias and similar.

- 29. (a) Describe cross-gender differences in mental health throughout the life span.**

[13 marks]

In better quality answers it is expected that candidates will talk about differences throughout the life span (because of different rates of occurrence) and also differences in several areas of mental health. Differences may include depression, suicide, post-partum depression and premenstrual syndrome.

- (b) Explain the possible reasons for these differences.**

[12 marks]

Possible reasons for differences may include: women might experience more stressful events and cope with them differently, social expectations, biological predispositions, stereotyped judgements, gender bias in diagnosis of mental health, possible gender bias in DSM. More than one of these reasons should be encompassed in a good answer. If only one reason is given a maximum of **[6 marks]** should be awarded.

- 30. In many cultures, men receive more formal education than women. Account for the possible reasons for these gender differences with reference to appropriate theories.**

[25 marks]

It is expected that a good answer will explain different gender roles through different theories, such as biological, sociobiological, social and cognitive. Not all of them have to be mentioned for a good answer, but at least two theories should be discussed.

Candidates are invited to present reasons for the existence of men being more formally educated than women. It is expected that candidates will talk about traditional roles of men being breadwinners and women homemakers, suggesting women don't need to be formally educated. Other gender stereotypes, like men being more intelligent, more ambitious, more assertive and dominant vs. women being submissive, more appropriate for child care and more empathic might be mentioned as well. Oppression of women might be mentioned and evidence about differences in payment between men and women.

A poor answer will talk about the educational matters only in a lay form – about traditional gender roles, without any reference to the theories that try to explain different roles men and women occupy in most societies. Award no more than ***[12 marks]*** for a purely descriptive answer.

Intelligence and personality

31. Analyse controversies in defining personality.

[25 marks]

Personality theorising has traditionally suffered from theoretical and cultural biases. Often the theories are framed from experiences in a particular time and place. (Freud, Rogers, Skinner are particularly good examples of such biased theorising). The tests developed to ‘measure’ personality traits are ethnocentric in their content and application (*e.g.* concepts of “openness to experience”, Eysenck). In other instances, dimensions such as dependence/independence may be seen as normal or pathological depending on the cultural context where the individual is immersed. The MMPI (Minnesota Multiphasic Personality Inventory) has been criticised for failing to recognise cultural differences (Edwards and Edwards, 1991). Even the very definition of personality as stable patterns that characterise an **individual** fail to account for the Asian emphasis on sameness as a desirable trait.

Biological/genetic (heritability) vs. psychogenic theories, reductionism, determinism and uniqueness versus universality, collectivist versus individualistic orientations may also be analysed in presenting a coherent argument regarding controversies.

Descriptive accounts without analysis of controversies should not obtain more than *[5 marks]*.

32. Describe and evaluate research findings that identify relevant environmental factors in the development of intelligence.

[25 marks]

Answers may start with definitions of intelligence and environmental influences followed by some background on the nature-nurture debate clearly indicating the interaction between the two. Arguments and research exploring environmental influences on intelligence may include:

- Influence of parent's IQ score, socioeconomic status (Heim, Labov, Steinberg) and education (Ceci)
- Correlational studies involving natural and foster or adoptive parents (Schieff)
- Conflicting outcome studies involving Headstart (a preschool program in USA)
- Studies of children raised in isolation and later exposed to an enriched environment. Other longitudinal studies would also be appropriate.

Critical appraisals may involve the difficulties in separating socioeconomic status from nutritional / health factors. Concepts of risk and vulnerability may also be included. Discussion of heredity should receive no credit if discussed in isolation from environmental factors.

Considerations of IQ as a cultural construct and an understanding of the ambiguous nature of intelligence would be appropriate. A general conclusion about the interactive nature of both, heredity and environment could be included.

Candidates who only describe research findings should receive a maximum of *[13 marks]*.

33. (a) Discuss the use of intelligence and personality tests. [13 marks]

Intelligence or personality tests are used and misused in schools, for personnel selection in industry, hospitals and mental health settings (other settings may be mentioned). If candidates discuss either intelligence or personality award a maximum of [7 marks].

(b) Examine the controversies surrounding their use. [12 marks]

Some of the issues involve:

- Performance in tests may be affected by external, temporary factors unknown to the tester (*e.g.* students may travel long distances for required admissions testing to school and jet lag may be a factor).
- Reductionism – if no other ways of knowing the participant are implemented, a single test may not provide the full picture of the individual tested.
- Cultural bias – the test may not have been devised for the group to which the test taker belongs.

Popularity of tests may be based on:

Time factors (economy of time)

Objectivity: may be considered a more objective appraisal of an individual's functioning as compared to other instruments (such as observations)

A coherent account, including references to specific tests would be required for top marks.

Life span psychology

34. Critically consider the relative contribution of genetic factors and pre-natal learning on post-natal development.

[25 marks]

Genetic endowment provides a baseline with which environmental factors interact. There is an intrinsic relationship between both factors. In the absence of inherited defects (*e.g.* biochemical, chromosomal deficits), intact organisms develop normally if the environmental conditions within the womb are not disturbed. Teratogenes, noxious substances, diet and stress may also affect prenatal development.

In the 1980s, research that has now become popularised in lay forums presented some evidence (De-Casper and Spence, 1986) regarding the possibility of learning inside the womb. It involved out loud reading of a popular highly rhythmic child book (*The Cat in the Hat*) during late pregnancy and testings and comparisons were carried out. The research findings seemed to indicate that the new born babies preferred listening to what their mothers had read to them while in the womb. These findings have led many parents to early stimulation of their unborn and newborn babies. So far the evidence shows a preference for the familiar.

Candidates are invited to offer a detailed examination of the available information as well as appropriate criticism from a methodological, ethical and psychological viewpoints. Current research about the also very popular topic of ‘brain research’ could be included.

35. Compare *two* theories of adult development.

[25 marks]

Candidates may choose any **two** theories of adult development. A pertinent distinction between crisis and transition should be understood. The concept of crisis / turning points can be used to describe adult crises in the movement from one stage to the next. Levinson’s emphasis on ‘transitions’ or seasons may help a candidate frame an appropriate contrast. This question could lend itself to the inclusion of ‘critical life events’ (Holmes & Rahe) and that would be appropriate specially if the candidate is exploring contemporary views on adult development. Evaluative criticisms (cross-cultural applicability, ‘male-centred’ research, limitations of stage theories) would be expected to obtain marks in the highest band.

36. (a) Describe *two* long term studies within life span psychology. [13 marks]

The types of studies described may be experimental or non-experimental. The focus should be on issues related to longitudinal studies. They could involve any periods of the life span.

(b) Evaluate each of the studies you have described referring to their advantages and disadvantages. [12 marks]

Longitudinal studies have advantages:

- More detailed and abundant data than cross sectional type of research leading to possibly deeper understanding of what is studied.
- More ecological and external validity if the participants are studied longer and in different settings and at different times.

Among the disadvantages:

- Difficulties inferring cause effect relationships with the multitude of variables involved in long term studies.
- No control over historical/local/environmental changes *e.g.* Eastern Europe's 'culture' has drastically changed in the last 11 years. The tragedies associated with war or natural disasters (El Niño floods) greatly affect people's lives.
- The need to operationalise variables at different stages depending on how the problem changes (*e.g.* effects of attachment may have different manifestations at different points in time)
- Subjectivity and bias may arise from on going knowledge of the participants are the imposition of theoretical bias (*e.g.* case studies)
- Difficulties involved in replicability and generalisation of results.

Accept answers that may show a bias including more problems than advantages since the syllabus refers to 'problems' arising from long term studies.

Higher marks will be awarded to essays that integrate evaluate comments involving methodology, ethics, cross-cultural issues. Award a maximum of [13 marks] to essays that only describe long term studies without evaluating them.

The migrant, sojourner and tourist experience

37. (a) Why are values difficult to investigate cross-culturally?

[10 marks]

The topics of values should be approached carefully within this essay, since the term itself is not a purely psychological one. The IB Higher Level syllabus addresses this topic within the greater sphere of cross-cultural communication and psychological responses to values conflicts. Therefore, examiners are cautioned to look for essays which consider values within a cross-cultural context and to award the very highest marks to those essays which limit their discussions to this context alone. The first part of the question **[10 marks]** requires a relatively simple account of value differences and the cultural variation in defining and ranking values. This account should be at least implied in the candidate's answer. The difficulty in investigating values should be viewed as principally a methodological one.

For example, issues of cross-cultural similarity in defining any particular value (and translating related terms into language of equal meaning) may be explored. Similarly, instrument construction, interview schedules, and experimental designs must all take into account cultural differences. Award the highest marks for a thorough exploration of these issues.

(b) Which values, according to psychological research, are most beneficial to cultural mediation?

[15 marks]

Values may include any of the following or other appropriate examples – understanding cultural diversity and norms, non-verbal, spoken and written communication, roles and status, the variety of religious experience, differences in age grading, awareness of gender differences, attitudes to the environment *etc.*

38. “For refugees the migration experience is particularly stressful.” What psychological evidence exists to support this statement?

[25 marks]

There is no shortage of empirical research on this question. Much of the research borrows heavily from biomedical studies of migrant pathology. More recent research considers the plight of refugees as particularly harsh considering their almost total lack of advanced warning or preparation for this new experience. Candidates can achieve high marks for a clear differentiation between the migration experience for refugees as compared with the experience of sojourners or immigrants. In order to gain maximum marks the candidate must be prepared to show empirical support for statements made. Without psychological evidence **[0 marks]** should be awarded.

39. Select *one* psychological interpretation of the migration experience and analyse its theoretical advantages and disadvantages.

[25 marks]

The list of psychological interpretations of the migration experience is a long one. There are theories dealing with immigrants, sojourners, and refugees (all three of these categories are acceptable in this essay). The selected interpretation can apply to all three migrant categories mentioned above or to just one or two of them. Candidates must consider the theoretical advantages **and** disadvantages; neglect of either one results in a maximum score of *[12 marks]*. The very best essays must demonstrate analysis and not a simple rendering of a psychological interpretation. The range of possibilities is wide, with many choices from theories of adjustment, models of social skills and communication, to schematic processing of the social field. The candidate can receive high marks for a competent analysis of any of these or others.

Organisational psychology

40. Using empirical research, consider to what extent the style of leadership influences productivity and satisfaction within an organisation.

[25 marks]

There are several well-known studies candidates could use in order to answer this question. Studies such as: Fiedler's Contingency model; Lewin *et al* (1939) classic study on leadership style; the Ohio Studies (Stogdhill & Coons 1956, Fleishman & Harris 1962); Vroom & Yetton (1973) decision model; McGregor's Theory X and Y, Blake & Mouton's (1985) managerial grid. More recent research has looked at transformational leadership models (*e.g.* Bass 1985) and is more concerned with leaders managing 'organisational culture'.

Since the question asks candidates to consider **to what extent** does the style of leadership influence behaviour, simply describing the studies or theories will not be sufficient and will receive only [13 marks]. It is important that candidates are able to indicate that many of these studies have found that there is not one style that is consistently the most effective. Even the very early work by Lewin *et al* noted that each of the three styles had strengths and weaknesses.

The better answers will also use cross-cultural research to evaluate their answers, especially when considering later replications of Lewin's work and the support found for the Ohio studies.

41. (a) Describe sources of conflict that may exist within organisations. [13 marks]

There are many different sources that could be described; the most common ones will probably be those due to divergence of interests (between managers and non-managers) since each group tends to have different goals and objectives. Another possible source is competitiveness both between managers and non-managers as well as between different groups within an organisation. Candidates could consider intra-group conflict and inter-group conflict.

Candidates who only describe **one** source of conflict should receive a maximum of **[6 marks]**.

(b) Evaluate strategies that may be used to overcome conflicts. [12 marks]

There are numerous strategies that could be considered. Schmidt & Tannenbaum (1960) or Lawrence & Lorsch (1972) propose various bargaining strategies that could be adopted to cope with conflict. Strategies such as avoidance, smoothing, forcing compromise and confrontation all have strengths and limitations.

An astute candidate could also consider the tactics used within the strategies such as resolution or accommodation; synchronising; openness. Similarly, a good answer could also consider the benefits of conflict for an organisation: *i.e.* motivates and energises employees; increase creativity to find solutions *etc.*

Candidates who only evaluate **one** strategy should receive a maximum of **[6 marks]** as the question clearly specifies “strategies”.

42. Consider some of the effects of stress at work and evaluate strategies which can be used to cope with such stress.

[25 marks]

The effects of stress can be both physical and psychological and either (or both) would be acceptable. The physical effects could include the stress-related illnesses *e.g.* high blood pressure, heart diseases, ulcers *etc.* Since these illnesses can be very serious their effects should not be underestimated. The psychological effects could include depression, anxiety disorders and an astute candidate could even argue that post-traumatic stress disorder is relevant here. The effects are also long-term, absenteeism through ill health, high job turnover; poor productivity, high error rate. Candidates could include an argument that some occupations are more stressful than others (*e.g.* Wolfgang 1988, nurses have one of the highest stress levels).

There are a wide range of strategies to cope with stress that candidates could include. Much evidence suggests that social support is very necessary, *e.g.* Karasek *et al* (1982) showed that support from supervisors and colleagues is important. Glanster *et al* (1986) also showed that such support helps overcome stressful work conditions. However, recent research (van de Pompe & de Heus 1993) suggested the best strategies are work related support systems rather than social systems. The organisation might introduce stress management programmes, including psychosomatic methods, relaxation, biofeedback or even time management.

Candidates could also consider personality characteristics and the effect they have on different strategies. Friedman & Rosenman (1974) Type A and Type B personality; Kobasa *et al* (1982) and the ‘hardy personality’; Rotter (1966) ‘locus of control’; could all be used in evaluating strategies. Candidates could also consider the ways in which an organisation might manage stress. A proactive organisation might take steps to prevent or reduce stress, by changing job design, workplace design or improving the person-job match.

A good answer will be aware of the variety of strategies and also be able to evaluate them, by considering their strengths and limitations.

Social psychology

- 43. Which psychological processes and conditions are responsible for altruistic behaviour?** [25 marks]

Altruistic behaviour can be approached through ethological research as well as human studies *e.g.* reciprocal sharing between genes, reciprocal altruism, delayed reciprocal *etc.* Candidates should focus on psychological processes while at the same time considering social and cultural factors which might lead to altruism. Simple conditioning fails to account for altruistic behaviour *e.g.* the status of the population is also a key factor. Candidates should point out the complexity of this topic, perhaps supplementing their answer with actual case studies (not required however). What is called for in this question is a discussion of some processes and conditions which favour altruistic behaviour. A subtle essay which points to the challenge of this topic to psychologists should gain highest marks.

- 44. (a) What is attribution theory?** [15 marks]

The first part of this question [15 marks] requires a descriptive definition of attribution theory including several topics within the field of attribution studies. The important focus should be on attempts to explain psychologically how we describe and assign causes to our own behaviour as well as to the behaviour of others. There are many cognitive references to be made here which the top essays should touch upon. Full marks to essays which give brief, but knowledgeable, reference to empirical studies.

- (b) How can the findings from attribution theory assist us in understanding everyday behaviour?** [10 marks]

The second part [10 marks] asks candidates to show their understanding of attribution theory in application. The best essays will suggest that many of our daily behaviours can be interpreted through attribution theory. Examples should be given to earn a full [10 marks].

- 45. Why is conformity difficult to resist? Account for the dynamics of conformity.** [25 marks]

Conformity is universal but subject to cultural variation. Candidates should explain what is meant by conformity (perhaps distinguishing it from compliance) and discuss at least a few studies examining it. An essay which approaches the dynamics with skill (including cultural differences in conformity) should receive the most credit. The full [25 marks] can only be gained if the candidate answers in a knowledgeable manner the first question “Why is conformity difficult to resist?” The answer to this question requires a deep understanding of the dynamics at work in group contexts. Since there are several ways in which to approach this question examiners may wish to grant full credit to essays which show insight and originality in addition to thorough understanding.
