Component 1: Social influence

1 Asch found that when ‘real’ participants were asked to say out loud which line (A, B or C) matched a stimulus line they gave incorrect answers that conformed to the majority view 37% of the time. Of the real participants, 75% conformed at least once. When asked why they answered as they did, some said that they did not believe the answers given by the others in the group but they had not wanted to look different. This is an example of normative social influence.

One strength of the study is that the experimental method leads to useful results because there is control over variables so statements can be made about cause and effect and the study can be replicated.

Another strength is that quantitative data, as percentages of conformity, were collected and backed up by the qualitative data derived from the post-experiment interviews with the real participants. However, the study involved a biased sample of male American students and may not be representative of other populations. The study also has low mundane validity; it does not represent a lifelike social situation and people may not change their opinions about social variables as readily as they do about line lengths.

The study was unethical because Asch deceived the participants.

Because of normative social influence, which often results in compliance or superficial change in behaviour – so she wore a hat even though she did not really think she needed to. Because of informational social influence – there is no right or wrong answer to whether to wear a hat to a wedding, so she went along with and adopted the views and behaviours of the majority (Sherif).

So overall, Rosie wearing a hat is due to normative social influence because she wants to look the same as everyone else at the wedding.

● Why didn’t Jason wear a tie?

Jason has an internal locus of control – he is less easily influenced by the opinion of others. Also, there are gender differences in conformity and males are less likely to conform to majority opinion than females.

● Discussion points:

  o Situational vs dispositional explanations?
  o Individual and cultural differences in conformity?
  o Strengths and limitations of research?

Component 1: Memory

1 (a) 1 mark is awarded for identifying the mean.

1 mark is awarded for justifying the use of the mean – for example, for stating that the mean should be used because it takes account of the values of all of the scores in each dataset and is the most sensitive measure of central tendency.

Or:

1 mark is awarded for identifying the median.

1 mark is awarded for justifying the use of the median – for example, for stating that the median could be used because there are only ten scores in each data set and thus high or low scores can skew the mean.

(b) For 2 marks the mean is calculated accurately in both conditions. (Different room 5.7, same room 12.0.) The calculations are shown as:

The mean of different room = \(\frac{5 + 6 + 6 + 8 + 6 + 5 + 6 + 9 + 3}{10}\) divided by 10 (number of scores) = \(\frac{57}{10}\) = 5.7

The mean of same room = \(\frac{9 + 8 + 10 + 12 + 11 + 14 + 13 + 10 + 18 + 15}{10}\) divided by 10 = \(\frac{120}{10}\) = 12

If the median was suggested in 1(a), full marks are awarded if the answers are correct, and
scores are shown arranged in ascending order with the middle value(s) indicated.
(c) 1 mark for stating that this is due to retrieval cues. 1 mark for explaining the effect of retrieval cues.

**Suggested answer:** The students who were interviewed in the same room could have used retrieval cues to remember. Retrieval cues may be based on the context in which information is encoded and retrieved. For example, evidence indicates that retrieval is more likely when the context at encoding matches the context at retrieval. Baddeley (1975) found that those who had recalled in the same environment in which they had learned recalled 40% more than those recalling in a different environment. This suggests that the students who were interviewed in a different room could not recall the film because they lacked retrieval cues.

(d) **Suggested answer:** The working memory model assumes that the articulatory–phonological loop has limited capacity and if someone is asked to perform two tasks that use the articulatory–phonological loop at the same time, such as talking to a customer and typing and reading a computer screen, performance on both tasks will be affected. Because entering the information to the computer is an ‘automated’ task for Jenny, it makes fewer attentional demands on her central executive so she is free to perform other tasks, such as talking to the customer. This is not the case for the trainee, who needs to pay attention to updating the computer system. In the trainee, while talking on the phone the articulatory–phonological loop passes speech-based information to the central executive and while reading the screen the visuospatial working area passes information to the central executive so the short-term memory of the trainee may become overloaded with information.

(e) **Your answer could include:** Knowledge research into factors affecting the accuracy of eyewitness testimony, such as misleading information, including leading questions, Loftus and Palmer’s (1974) experiment where the verb in the critical question was changed; reconstructive memory/the formation of schemas; confabulation; links to leading questions, for example ‘Did you see the knife?’ – the officer is asking a leading question; links to anxiety – the witness claims that she was ‘scared’, which may inhibit or enhance her memory. You could also discuss the methodological issues of validity and reliability in laboratory studies or lack of control in real-life situations and practical applications.

(f) For the ‘describe’ [A01] part of the question, you should describe the multi-store model of memory. In the evaluation section you could suggest the following:
- The multi-store model is simple and can be tested. Research evidence supports the idea that STM and LTM are qualitatively different types of memory.
- People do ‘rehearse’ information and it seems to make sense that rehearsed information is more likely to be remembered.
- In real life, memories are created in contexts rather different from laboratory-based ‘free recall’ experiments, so perhaps this model does not explain fully the complexities of human memory.
- The model suggests that memory is a passive process, whereas theories of reconstructive memory suggest that memory is an active process.
- The model does not explain why some information is easier to remember than other information.
- The model does not explain individual differences in memory ability.
- The model does not explain why retrieval cues help recall.

**Suggested description:** The multi-store model suggests that memory consists of different stores: sensory memory, short-term memory (STM) and long-term memory (LTM). Sensory memory is where information enters the system through our senses (for example, our eyes and ears). If the information in sensory memory is attended to, it will be passed to the STM store, which has limited capacity for about seven chunks of information. Verbal rehearsal maintains information in STM, but STM has limited duration, thus the information may be lost if it is displaced by new incoming information. Information is passed from STM to LTM by rehearsing the information, and LTM has unlimited capacity and duration so the information may be remembered for a lifetime.

**Component 1: Attachment**

1 (a) Ethical issues arise if the strange situation is to be used, which causes distress to infants. An ethical issue is protecting the children from harm or distress, which means that when observing young children they should not be separated from the caregiver. Problems arise because infants cannot explain their behaviour so observers must infer causes of behaviour and meanings of behaviour. Caregiver–infant interactions are usually not
observed and having an observer present may change the behaviour [the Hawthorne effect and/or demand characteristics]. Each pair of caregiver and infant has a unique relationship, in effect a case study, and the way one pair behaves may not generalise to other pairs.

(b) The learning explanation proposes that a child’s attachment bond with their caregiver can be explained in terms of operant conditioning. Based on operant conditioning, infants feel discomfort when they are hungry and they learn that if they cry, their caregiver feeds them and the discomfort is removed. This is negative reinforcement – the consequences of behaviour [crying] lead to the feeling of hunger stopping. Thus, the behaviour of ‘being close’ to the caregiver is reinforced, the attachment bond is learned and the attachment behaviour of distress is shown if the child is separated from the caregiver.

However, learning theory, or operant conditioning as a result of the provision of food, cannot fully explain the development of attachment. In a study of monkeys, Harlow demonstrated that even though the wire mother provided food, the baby monkeys did not become attached to it, preferring to cling to the cloth-covered mother for comfort – which suggests that factors other than the provision of food as a reward are important. Also, learning theory is reductionist and factors other than reinforcement and learning have been found to influence the development of attachment. Bowlby proposed that unless attachments have developed by between one and three years, they do not develop normally, and if learning is the only explanation for attachment this would not be the case. Also, learning theory focuses on nurture and ignores factors such as the child’s innate temperament, which may make it easier or harder to form attachments. Another factor that learning theory tends to ignore is the quality of the care provided – Ainsworth suggests that sensitivity of the caregiver can also affect the development of attachments. Finally, there are individual differences in the type of attachment developed, which would not be the case if attachment bonds were learned only as a result of feeding/reinforcement.

(c) The main difference between Bowlby’s and the learning (behaviourist) explanation is that Bowlby suggests that infants are biologically programmed to develop attachments and thus that attachments form because of innate biological characteristics, while learning theory suggests that attachments develop because of nurture [learning from experience]. Bowlby also suggests that there may be a critical period in which attachment bonds may develop, but behavioural theorists suggest that attachment bonds should be able to be learned [and relearned] at any age. A final difference is that, unlike Bowlby, learning theory does not suggest that attachment creates a schema for future relationships.

(d) One ethical problem when observing children is that having given their informed consent, the parent must be allowed the right to withdraw the child from the research, but if they choose to withdraw their child, this may result in a biased sample of participants. Another ethical issue is protecting the children from harm or distress, which means that when observing young children they should not be separated from the caregiver.

(e) Example plan:

<table>
<thead>
<tr>
<th>Evidence (1)</th>
<th>Evidence (2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bowlby – maternal deprivation</td>
<td>Koluchova twins and the concentration camp children – show early privation can be overcome</td>
</tr>
<tr>
<td>44 juvenile thieves – affectionless psychopathy</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Evaluation point (1)</th>
<th>Evaluation point (1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retrospective case studies – may not be reliable</td>
<td>Small samples and case studies – may lack generalisability</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Evaluation point (2)</th>
<th>Evaluation point (2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biased sample and no control group of children who had been separated but who did not become thieves</td>
<td>May support Hodges and Tizard – because, like Koluchova, if the adoptive parents put in a lot of effort, these children can overcome some effects of privation</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Evaluation point (3)</th>
<th>Evaluation point (3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Probably out of date – in the 1950s childrearing practices were very different from today</td>
<td>Genie shows that researchers can behave unethically and can add to the effect of privation</td>
</tr>
</tbody>
</table>

Summary/conclusion: Not very useful and may cause mothers to feel guilt

Summary/conclusion: Useful because it shows that with love and attention, the effects of privation can be overcome.
Component 1: Psychopathology

1 (a) Depression is a mood disorder and phobia is an anxiety disorder.

(b) Suggested answer: The behavioural approach assumes that all behaviour is learned, that what has been learned can be unlearned, and that abnormal behaviour is learned in the same way as normal behaviour. Behaviourists propose that depression is learned by operant conditioning, in which behaviour is learned through the consequences of our actions. If the behaviours associated with depression have rewarding consequences (positive reinforcement), the behaviours will be repeated and continued. Behavioural psychologists suggest that depression is a form of learned helplessness.

(c) Beck’s cognitive triad can be applied to Patient X. Beck suggests that patients develop a negative view of themselves, the world and the future, and develop a negative set of schemas. Depressed people over-generalise, drawing negative conclusions about all situations based on a single event. Beck would not be surprised by the quote from Patient X because ‘I am useless’ demonstrates a negative view of self, ‘No one likes me – I have no friends’ demonstrates a negative view of the world, and ‘I have nothing to live for’ demonstrates a negative view of the future.

(d) It gives hope to patients because it assumes that unipolar depression is learned behaviour that can be unlearned.

(e) Behavioural symptoms are compulsive behaviour, which is the irresistible urge to carry out repetitive behaviour to avoid some form of danger.

2 Behaviourists propose that classical conditioning can explain phobias. In classical conditioning, an unconditioned stimulus, such as an unexpected loud noise, triggers a natural reflex, for example the startle response and fear. But if another stimulus, such as seeing a snake, occurs at the same time, this may in future elicit the fear response. Behaviourists also propose that a phobia can be learned by operant conditioning, in which behaviour is learned through its consequences, and if our actions result in rewarding consequences (positive reinforcement), we will repeat the behaviour. Phobias such as ophidiophobia can be learned by operant conditioning because the person with the phobia becomes anxious when he/she sees a snake, asks someone to remove it, and this removes the anxiety (negative reinforcement) and strengthens the fear.

This is a top band answer worth the full 4 marks – accurate, detailed and thorough.

Component 2: Approaches in psychology

1 One problem is that mental processes are private and cannot be observed so cognitive psychologists need to devise ways to reveal and measure the internal mental processes.

2 As Pinky and Perky are identical twins, a biological psychologist would probably suggest that these behaviours are genetic.

3 A behaviourist psychologist would probably suggest that Samira’s phobia of beetles was learned by the process of classical conditioning.

4 B, E.

5 Inference means rational observations of patterns of facts, to indirectly see new meanings. Because the processes involved in remembering and forgetting cannot be directly observed, cognitive psychologists, such as Loftus and Palmer, have to infer the mental processes by which false memories are created from their research findings.
Congruence means that our self-image and ideal self are very similar to each other, leading us to have a high sense of self-worth.

You could include commentary on:

- how research by biological psychologists has increased understanding of human behaviour, using examples of research to support arguments
- how biological psychologists have developed treatments to help people recover from mental illness and the advantages of these treatments
- the advantages and limitations of the assumptions of the biological approach compared with one or more other approaches
- the methodological problems that arise when biological psychologists carry out research
- research by biological psychologists studied for Paper 1.

For a top band mark you need to use appropriate psychological terminology and demonstrate clear understanding. Aim to write about four paragraphs, each making a different point. Your answer must be evaluative rather than descriptive and you should allow a few minutes to write a plan before you begin writing your answer.

Example paragraphs: Biological psychologists have increased our understanding of the structure and function of different areas of the brain. An advantage of physiological psychology is that it takes a scientific approach and usually uses laboratory experiments to reveal biological causes of behaviour. This means that physiological research is especially useful as its hypotheses can be tested to draw valid and reliable conclusions. Biological psychologists argue that, as scientists, to understand human behaviour we should study the physical brain rather than the metaphysical mind. An early breakthrough in biological psychology was the split brain research by Sperry, showing that the brain structures that support language are in the left hemisphere of the brain, which explains why damage to the left hemisphere may disrupt the ability to speak or understand language.

An advantage of biological psychology is the use of objective, quantitative research methods, such as twin and family studies where comparisons of MZ and DZ twins are used to determine whether or not behaviours are genetically inherited or environmentally determined. Also, brain scans that show which areas of the brain are active, along with research into the biochemistry of the brain, have increased our understanding of the relationship between the brain and behaviour. Progress in biological psychology has been especially useful because it used to be thought that damage to the brain could not be repaired, but recent research by Maguire showed that structures in the brains of adults changed in response to environmental demand, which provides hope that intense therapy could repair brain damage. This recent research in brain plasticity increases our understanding of how our biological structures are influenced and changed by our behaviour.

Component 2: Biopsychology

1. C

2. The pancreas performs both digestive and endocrine functions. It produces a number of hormones, including insulin that controls glucose (blood sugar) levels in the body, and is related to metabolism and body weight.

3. The expression of a trait, such as personality, is based on genetic as well as environmental influence. Pinky and Perky were brought up in different environments, which would have influenced the way their personality developed.

4. Adrenaline has a range of effects on the body, such as an increase in heart rate, increases in the rate of blood flow and blood pressure, diverting blood away from the skin and slowing the digestive system, increase of blood to the brain and skeletal muscles, all of which help us escape in times of emergency.

5. The split brain procedure is a surgical procedure called a commissurotomy to cut the corpus callosum, which connects the two hemispheres. The participants were people who suffered from severe epilepsy who had a commissurotomy. Participants were tested individually. Pictures were presented to the left or right of a screen, thus to the left or right visual field. The participant covered one eye and looked at a fixed point in the centre of a projection screen. Images were projected to the right or the left of the screen at high speed. Below the screen there was a gap so that the participant could touch and feel objects but not see their hands. Each time an image was presented, the participant was asked whether they had seen the image before, to describe what they could see and to identify a matching object with their left or right hand.

6. Neurotransmission is how information is sent between nerve cells (neurons) in the brain and body. In pre-synaptic processes, information comes to the neuron through the dendrites from other neurons and on to the cell body, which processes information and then passes it along the axon. At the end of the axon are structures called terminal buttons that pass the information on to glands, muscles or other neurons. Information between neurons is carried by biochemical substances called neurotransmitters, such as dopamine and
serotonin. In the post-synaptic process, when the neurotransmitter leaves the axon it passes through the synapse and then on to the dendrite receptor sites where it may, or may not, activate the receptor neuron.

7 The fight-or-flight response originates in the hypothalamus and mobilises the body’s resources to deal with a threat. In response to threat, the sympathetic branch of the nervous system stimulates the adrenal gland to release adrenaline, noradrenaline and corticosteroids into the bloodstream. The increase in adrenaline produces the physiological reactions, such as increased heart rate, respiration and blood pressure, known as the ‘fight or flight’ response. The increase in heart rate results in more blood to the muscles, which helped the postman run faster than he would normally to escape the snarling dog.

8 Answers may suggest:
- the need for informed consent to take samples of blood or urine or to measure brain activity
- harm and distress may be caused if invasive techniques are used
- the right to withdraw if people change their minds about invasive techniques to measure biology.

Component 2: Inferential testing

1 (a) Independent design.
(b) That there is no difference in the marks awarded to students who complete the one-hour maths exam at 10 a.m. than the marks awarded to students who sit the same one-hour maths exam at 10 p.m.
(c) Since the mean of the ‘early’ maths exam score (at 75.5) is more than 10 marks higher than the mean of the late maths exam score (at 64.2) it suggests that students who sit maths exams in the morning will do better and that the time of day does influence the ability to solve maths problems.
(d) A measure of dispersion gives us information about how spread out the scores are. Standard deviation is a measure of dispersion because it measures how the scores are distributed around the central point (the mean) – the greater the standard deviation, the more spread out the scores are.
(e) Since the standard deviation score of 5.1 is greater in the late condition than in the early condition, this suggests that being tested later did not have a consistent effect on performance in the maths exam, and that in the late condition there were greater individual differences in the ability to solve maths problems.
(f) 1 score out of 10 participants in the late condition – thus 1/10 or 10%.
2 marks, but only 1 mark is awarded if the correct answer (10%) is given but no ‘working’ is shown.
(g) About 1%.
(h) Mann-Whitney U test because the data are numeric and at least ordinal, and the design is an independent design, and there are only ten participants in each condition so the data may not be normally distributed.
The unrelated T test because the data are numeric and at least ordinal, and the design is an independent design, and it is assumed that the data are normally distributed.
3 marks for either of these suggestions that are appropriately justified.
(i) Reject – because there is only an equal to or less than 5% probability that the difference between the early and the late exam results was due to variables other than the time of day the exam was taken.
1 mark for the correct suggestion, and 2 marks for the correct explanation.
(j) Research suggests that the time of day significantly affects outcomes in maths exams and students who sat exams in the morning did better than those who took the same maths exam at 10 p.m. As a result, we advise you to revise in the morning rather than the evening, work on your coursework projects in the morning rather than in the evening, and generally work on your maths early in the day rather than later.
2 marks for an appropriate suggestion clearly based on the research context and outcome.
(k) Possible suggestions: Yes – because all students sat the same maths exam that was standardised and was a consistent and objective measure of maths ability.
Yes – because the maths exam gave a numeric score which is an objective and consistent way of measuring maths ability, and the same maths exam could be used again to replicate the study.
(l) Suggestions: individual differences in maths ability, any noise or disturbance in the exam room, how hard the students tried, the temperature of the exam room, how hungry the students were.
(m) The results have face validity because a maths exam should be a test of maths ability, and the results have internal validity because all the students took the same exam in the same environment, with the only difference being the time of day the exam was taken. However, validity will be reduced because as well as
time of day, the individual ability of the maths students will have affected the exam score.

Note: A weak answer could suggest low ecological validity because maths exams are usually not taken at 10 p.m.

2 (a) Your answer should include the following:
- Suitability of participants: who might be suitable and who might not be suitable – you should explain why.
- The task: to show that you understand what is meant by standardisation – you must show an appreciation of the fact that, except for time of day, each participant must have exactly the same task, the same amount of time and be tested in the same conditions.
- Controls: what factors you will try to control and why you will control those factors.
- Ethical issues: what you will do to make sure the study is ethical – name, describe and explain at least two ways, such as informed consent, right to withdraw, protection of welfare, confidentiality, etc.

3 (a) The independent variable is whether the time taken to run 100 metres was measured before or after the participant drank the energy drink.

(b) There is no significant difference in the time taken to run 100 metres on a running track before and after drinking a carton of a popular energy drink.

(c) The sampling technique used by the psychologist was self-selecting sample (volunteer sample) because participants put themselves forward after having seen the poster in the sports club. One disadvantage of using a self-selecting sample is that the sample will be biased. In this study it is probable that because the poster was put up in a sports club, all the participants will be sports enthusiasts who frequently use energy drinks to boost their performance and it is unlikely that people who do not like or enjoy sport will even see the poster. Having a biased sample is a disadvantage as being unrepresentative of the larger population, the results are less generalisable and the psychologist will not be able to suggest that energy drinks will have an effect on most people.

(d) A Wilcoxon T test. This non-parametric test is appropriate because the research design was repeated measures, two running time scores were obtained from each participant, and also because the small sample cannot assume that scores are normally distributed. The Wilcoxon T test will allow the researcher to calculate the significance of the difference between the two ordinal-level sets of running time scores.

(e) There is a more than 5% probability that the difference in the time taken to run 100 metres occurred by chance rather than as a result of the popular energy drink.

(f) Peers are professionals in the same field as the psychologist whose research is being reviewed. Peer reviews are useful because they can help decide whether research is good enough to be published and positive peer reviews can catch the eye of journal editors. Also, peer reviews are useful to university departments as positive peer reviews can improve the research credibility of a university/department.

(g) **Hint:** To gain a high mark you should demonstrate knowledge of the BPS ethical guidelines, especially informed consent, no deception, protection of participants and the right to confidentiality. This question assesses whether you understand how important it is for psychologists to follow the ethical guidelines and to treat participants with care and respect.

Good morning. My name is Hilary and I am very pleased to meet you. Thank you for coming to help my research. Before we start I will brief you on what you are going to be asked to do. The purpose of my research is to try to find out whether a well-known brand of energy drink has any effect on sports performance. If you agree to participate I will take you to the running track and ask you to run 100 metres as fast as you can. Please don’t worry about this – if at any time you feel out of breath or just want to stop running, you can. After your run, I will ask you to rest for 15 minutes. Then you will consume a carton of this well-known energy drink and run 100 metres on the running track again. Now that you know what you will be asked to do, if you would rather not participate, that’s fine. There are soft drinks and healthy snacks on the table so please help yourself before you go home. If you are still willing to participate, you will not be asked to identify yourself in any way – your contribution to my research will be completely anonymous. Before we start, do you have any questions?

Component 3: Issues and debates

1 (a) B
(b) A
(c) Biological reductionism, environmental reductionism.
(d) In alpha bias researchers overestimate gender or cultural differences, but in beta bias researchers underestimate gender or cultural differences.
(e) Determinism suggests that individuals cannot be held responsible for their actions. Hard determinism is when biological explanations suggest behaviour is caused by genetic factors and environmental determinism is when behaviour is said to be caused by external factors.

(f) **Example answer:** Reductionism means explaining complex human behaviour in terms of single-factor, often biological, causes. As psychology is supposed to be a science, reductionism is useful because to identify causes of behaviour, psychologists need to separate behaviour into its component parts. Also, reductionism is useful because it allows psychologists to identify independent variables and formulate testable hypotheses that can be proved or falsified. For example, reductionist explanations of aggression have identified the ‘warrior gene’ as a possible cause of violent behaviour. However, although reductionism allows us to study the individual factors involved in behaviour, simplistic reductionist explanations are less useful because they may cause us to overestimate the extent to which one factor influences behaviour and may also prevent research into the more complex causes of behaviour. It can be argued that scientific experimental methods are always reductionist as these usually study the effect of one factor (the IV) on another (the DV) and are useful because cause and effect can be established. In contrast to reductionism, holism is the principle that to understand human behaviour, biological, cognitive and social causes must all be studied, but holistic case studies are less useful because being based on one person, findings cannot be generalised to increase understanding of most human behaviour.

(g) Research is sensitive when it investigates a personal experience and/or deviant, anti-social behaviour or mental disorders. This research is socially sensitive because it involves children under the age of 16, and the findings, being identified as at risk of developing an eating disorder, may have a negative impact on the children in the sample. The research may also cause worry to the parents of the girls. Researchers should ensure that parents have given their consent; the children must be reassured that what they say will be confidential and that their identity will be kept private. There will need to be sensitive debriefing of participants, parents and teachers, and all parties should be advised on how to encourage healthy eating.

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**Component 3: Relationships**

1. The third filter stage is the complementarity of emotional needs, where we decide how well as two people we fit together as a couple.
2. The sampling stage in which the potential costs and rewards of a new relationship are considered and compared to other known relationships. The bargaining stage in which partners receive and give rewards to test whether a deeper relationship is worthwhile. The commitment stage in which relationship predictability increases and because each partner knows how to ‘get rewards’ from the other, costs are reduced.
3. Physical appearance, race, clothing, voice.
4. The evolutionary perspective suggests that mating behaviour is motivated by the drive to successfully reproduce (produce surviving offspring). If this theory is correct then both females and males will seek fertile mates and will be attracted to partners who show signs of good reproductive potential, indicated by physical characteristics such as smooth skin, glossy hair and youth and healthiness.
5. One problem that arises when psychologists research relationships is how to gather valid data on such a wide and complex topic. Relationship formation and breakdown is a sensitive topic, and ethical issues arise when using self-report methods to question people about relationships as it is unethical to ask embarrassing questions. Also, the validity of research into relationships may be low as asking people questions about the quality of their relationships may lead to social desirability bias, as people will almost certainly try to make themselves ‘look good’ by justifying their own behaviour in a relationship.
6. **Model answer:** Psychologists have proposed several theories or models of relationship breakdown. Duck suggests that there are five stages in relationship breakdown. In stage one, one partner feels dissatisfied with the relationship but may not express this. In stage 2, the dissatisfaction is exposed, while in stage 3, the partners argue and negotiate. In stage 4, partners try to resolve their problems and finally, in stage 5, if the problems cannot be resolved the relationship is ended.

One of the strengths of this model is that it sounds plausible and realistic and can explain why a wide range of relationships break down, including family relationships, relationships between friends as well as love relationships. However, the model describes how relationships break down, but not the causes of relationship breakdown. Also, not all relationship breakdowns will follow...
these neat and tidy stages, and the model focuses on what people do during relationship breakdown rather than on how they feel.

An alternative explanation of relationship breakdown is proposed by Sternberg. He proposes that each of us has a cognitive model, or schema, of our ideal relationship, which he describes as a triangle comprising the three components, passion, intimacy and companionship. Sternberg proposes that when each partner in a love relationship has a similar requirement for the amount of passion, intimacy and companionship, the relationship will be maintained, but when differences develop in the requirement for one or more of these components, the relationship will break down. One of the strengths of the Sternberg theory is that it sounds realistic, as passion, intimacy and companionship are three important components of love relationships. However, this cognitive model ignores the social context of a relationship, for example the wider circle of children, family and friends, whose behaviour may also have an effect on the quality of the relationship. Also, while this model may be useful to relationship counsellors who can apply it to reveal differences between partners’ relationship requirements, this model is limited as it can be applied only to explain why relationships such as marriages break down.

Yet another explanation for why relationships break down is proposed by behavioural psychologists who propose that relationships are learned, and will be maintained, as long as each person in the relationship receives adequate pleasure by reinforcement. Behavioural explanations of relationships focus on the idea that behaviour that brings about pleasurable consequences will be repeated, but this explanation is reductionist as it reduces relationships to packages of stimulus and response behaviours, ignoring the complex emotions and cognitive processes that may also be involved in relationship breakdown.

Perhaps the biggest challenge for psychologists who study relationship breakdown is how to carry out ethical research. Relationship breakdown is a sensitive topic, and ethical issues arise when using self-report methods to question people about relationship breakdown as it is unethical to ask embarrassing questions. Also, the validity of research into relationship breakdown may be low as asking people questions about the quality of their relationships may lead to social desirability bias, as people will almost certainly try to make themselves ‘look good’ by justifying their own behaviour in a relationship. Perhaps all we can conclude is that psychologists have explained some of the reasons why relationships break down, but that no psychologist can fully explain relationship breakdown.

Component 3: Gender

1. D
2. C
3. (a) Model answer: Testosterone affects gender development in the womb, with males being exposed to more testosterone, which may explain the differences found between male and female brains. Testosterone affects the areas of the brain concerned with risk-taking behaviour, which can explain why males are found to be more willing to engage in risky behaviour than females.

   (b) For a top band mark the evaluation should contain at least two points, and the points made should be clear and effective and include appropriate use of specialist terminology.

   Suggested points:
   + Use of evidence to support hormonal influences; Money (1975).
   + Use of brain scans to provide objective way of testing gender differences.
   – Use of evidence against hormonal influences.
   – Research issues, for example difficulty showing cause and effect.
   – Use of non-human animals to extrapolate to human gender development.
   – Ignoring social factors such as the influence of reinforcement on behaviour and other environmental influences after birth.
   – Hard to establish cause and effect as hormones are linked to gender differences in behaviour.

   4. (a) Model answer: The psychodynamic approach views problems as resulting from difficulties establishing gender identity due to the incomplete resolution of the Oedipal conflicts during the phallic stage of personality development and from identification with an inappropriate role model.

   (b) For a top band mark the evaluation should contain at least two points, and the points made should be clear and effective and include appropriate use of specialist terminology.

   Suggested points:
   + Evidence to support social explanations for GID.
   + Social explanations support the continuity between childhood gender identity disorder and gender identity disorder in adulthood.
   – Evaluative comparison with the biological explanation.
   – Use of evidence against social explanation.
   – Limited incidence, therefore limited evidence – problems of testability.
5 **Model answer:** The psychodynamic theory of gender development suggests that gender identity is acquired during the third stage of psychosexual development, the phallic stage. As the child enters the phallic stage, the focus of its libido moves to the genitals and the development of girls and boys differs. The key concepts here are the identification with the same-sex parent to reduce anxiety and internalisation of their moral standards and developing a superego. Boys experience castration anxiety due to their need to remain close to their mother and identification with their father. Girls will experience the conflict between the desire for their father and the need to identify with their mother.

One strength is that the theory is supported by clinical case studies such as Little Hans and his phobia of horses, from which Freud developed the Oedipus complex, where the child identifies with the same-sex parent. Psychodynamic explanations for gender development lack temporal validity as they reflect the stereotypical gender roles in the 1900s, that women were inferior to men, which is not an idea that is acceptable today. Additionally, the psychodynamic theory implies that the child’s gender identity is not fully formed until the age of about five or six years. However, children start to show gender-based preferences for toys as early as one year old and usually have clear ideas about their own gender identity by the age of three.

6 (a) One test for measuring androgyny is the Bem Sex Role Inventory. The test includes 60 items: 20 stereotypically male-related and 20 stereotypically female-related characteristics, and 20 neutral, such as being truthful.

(b) **For full marks just include one limitation. You need to be clear and ensure you justify why your limitation is a weakness when measuring androgyny.**

**Model answer:** One limitation of measuring androgyny is that measures used may lack temporal validity – for example, the BSRI was developed in the USA in the 1970s when gender inequality was the norm and therefore may no longer be relevant in today’s society. This weakens the external validity of the measure as a reflection of androgyny.

7 A

8 For a top band mark (13–16), knowledge of social explanations is accurate and detailed. Discussion is thorough and effective. The answer is clear, coherent and focused and specialist terminology is used effectively.

**Possible top band answer:** Gender schema theory suggests that about the age of 2–3 years children develop schemas for physical differences between the sexes, leading to the child developing schemas for gender-specific characteristics and gender awareness. Around five years gender roles are rigid – the child identifies activities and objects associated with their own gender, and starts to ignore or reject those that do not fit in with this schema. By the age of seven years their views of what is gender-appropriate behaviour are more flexible – for example, a boy may view ballet as a male activity because they are a boy and like ballet. Children at this age will pay attention to same-sex role models and this is an important step towards establishing self-identity. Part of the development of social identity is to make social comparisons with members of their own gender group (in-group) and the opposite gender (out-group). Children will evaluate their in-group and their associated behaviour and activities in a positive light and members of the out-group and their related behaviour as negative.

One strength of gender schema theory is that there are studies to support the view that children of two years old already have schema influencing their behaviour. For example, Campbell et al. (2000) studied 3 groups of babies aged 3 months, 9 months and 18 months – using a visual preference technique. The three-month-old babies showed a slight preference towards watching same-sex babies, more so in males than females. Nine-month-old male babies preferred to look at ‘boys’ toys’. This suggests that babies develop gender schemas before they can even talk. However, Campbell et al. (2002) found no evidence of greater preference for gender-consistent toys in two-year-old boys and girls who showed more gender knowledge, weakening the explanation for gender schema theory.

Another strength is that when compared with Kohlberg’s theory, it places a greater emphasis on gender-stereotyped behaviour as the basis for understanding gender roles, whereas Kohlberg suggests gender requires a more complex cognitive understanding. For example, Martin and Little (1990) found that two year olds show a greater preference for same-sex peers and gender-stereotyped activities. This illustrates the importance of schema in the development of gender. However, both Kohlberg and gender schema theory place too much emphasis on cognition from the child rather than influence of biology and the role of hormones in determining gender-stereotyped behaviour, which suggests that cognitive explanations may not provide the complete picture. However, it could be argued that schema theory does take into consideration social factors, which makes the theory an improvement on Kohlberg.

A weakness of gender schema theory is that it argues that the child has an active role in their gender development. An opposing view comes from social learning theory, which sees children...
more as passive recipients of influences from their environment, such as through modelling media and peers. The downside of this is that the cognitive approach may underestimate the role of external influences on the child’s development. However, in most respects the two theoretical approaches are now more compatible as gender schema theory does recognise the influence of socialisation and social learning theory now includes cognitive influences. Overall it could be argued that if the child has an active role, this supports individual differences in gender development.

Component 3: Cognition and development

1  B
2  B
3  B

4 Theory of mind is the ability to attribute mental states to oneself and to others, and to understand that others have mental states that are different from one’s own. Autism results from a very specific form of impaired cognitive functioning and lacking a theory of mind means people with autism cannot understand or infer the mental state of others.

5 For a top band mark the evaluation should contain at least two points, and the points made should be clear and effective and include effective use of specialist terminology.

Model 6-mark answer: Theory of mind (ToM) is a useful diagnostic tool because it describes what many autistic children and adults are unable to do, that is, take the perspective of another person. However, ToM does not give an explanation for why some people do not develop a theory of mind. Also ToM does not explain individual differences between autistic people because some people with autism are able to take the perspective of others. In addition, ToM cannot explain the sometimes extraordinary abilities of autistic children or the skills demonstrated by autistic savants.

6 In a top band mark (13–16) knowledge of Piaget’s and Vygotsky’s views is accurate and detailed. Discussion is thorough and effective. Application to the item is appropriate and links between the theories of Piaget and Vygotsky and the item content are explained. The answer is clear, coherent and focused and specialist terminology is used effectively.

Possible top band answer: Piaget suggested that cognition develops as a result of active discovery. The child acts in, and on, the world like a scientist discovering the physical properties of the world. Cognitive development is age related and mental schema are in a constant state of change via assimilation, adaptation and disequilibrium. According to Piaget, development takes place in age-related stages and the development of language is a product of cognitive development. In sum, Piaget proposes a nature-driven, maturational theory of cognitive development in which, regardless of the way they are taught, or nurtured, until children reach the critical age they will be unable to ‘perform’ certain mental processes. For Piaget, and it seems the teacher Mr Smith, cognitive development is driven by individual discovery learning and children learn by trial and error. Piaget would recommend Mr Smith’s maths classroom in which the teacher’s role is to provide the materials and environment in which the child can discover solutions to problems.

In contrast, Vygotsky proposes a nurture theory, that cognition is socially and culturally determined, and describes the child as an apprentice learning from and with others. For Vygotsky, cognitive development is the result of the active internalisation of problem-solving processes that occur in interaction between children and those with whom they have contact. According to Vygotsky, each child has a zone of ability and a Zone of Proximal Development (ZOPD), which is ‘potential ability’ if the child is guided by a more able adult or peer. It seems as if Mr Jones is applying Vygotsky’s theory in his classroom because after he has demonstrated the task, children are allowed to work in pairs of differing ability and are encouraged to talk through each stage to help each other. Vygotsky would recommend learning maths by working with more able peers to provide scaffolding support that will enable less able children to move into their ZOPD. In comparison with Piaget, Vygotsky gives a social interactionism theory in which language is the key to the development of thought.

Should Mr Smith change his Piagetian maths classroom? Piaget’s theory has generated significant amounts of research, which suggests he underestimated the age at which children are able to perform cognitive tasks. Research by Donaldson, for example ‘naughty teddy’, shows that a variation in an experimental procedure can produce very different findings. Also, some questions in Piaget’s original studies were confusing – for example, in Piaget’s research into class inclusion the question ‘Are there more yellow flowers or more flowers?’ asks the child to distinguish between superordinate groups (flowers) and a subordinate group, yellow flowers, and most adults think this is an odd question. That said, even with support most five years olds cannot engage in abstract reasoning, and as children do enjoy ‘discovery learning’, unless the children in Mr Smith’s maths class are not
making the expected amount of progress, it is hard to suggest he should change.
Should Mr Jones change his Vygotskian maths classroom? Compared with Piaget’s theory, Vygotsky’s theory is more abstract and has generated less research. One could argue that Vygotsky’s theory, proposing that children are able to complete more complex tasks if given support, sounds a bit like ‘common sense’, and the theory of ZOPD is useful only if it is possible to identify the area that is just beyond, but not too far beyond, the child’s independent ability. However, Vygotsky’s theory is useful in the classroom. Rather than assuming, like Piaget, that all children of the same age have developed the same abilities, Vygotsky suggests that teachers should provide individualised instruction, and scaffolding, to minimise the level of frustration caused by trial and error methods so that children are motivated to learn more quickly. Vygotsky would argue that the children in Mr Jones’ class will benefit by working in pairs of differing ability, and will make progress by talking through each stage of the maths problems.

7 C

8 The Zone of Proximal Development (ZOPD) is the distance between a child’s independent ability level and their potential ability level when problem solving in collaboration with more capable adults or peers.

9 Suggested points:
+ Vygotsky’s theory is useful in the classroom because it recognises individual differences in children’s cognitive development and suggests that teachers should provide individualised instruction.
+ The theory of scaffolding is useful and if used effectively may minimise the level of frustration caused by trial and error methods so that children are motivated to learn more quickly.
+ Applying Vygotsky’s theory in the classroom, where children learn in groups, will support language development and social interaction.
+ Vygotsky’s theory explains why children who attend playgroups or nursery school may be more advanced when they start school.
– Vygotsky’s theory is abstract and is quite difficult to test. One could argue that Vygotsky’s theory, that children are able to complete more complex tasks if given support, sounds more like common sense than like a scientific theory.
– The theory of a ZOPD is useful only if it is possible to identify the area that is just beyond, but not too far beyond, the child’s independent ability.

10 (a) Most likely limitations:
● Not being able to ask a baby what it is thinking, so having to make inferences from behaviour.
● If observational methods are used, deciding what observed behaviour means.
● Designing procedures that are suitable for the four-month-old babies’ motor abilities, for example they cannot walk or hold objects.
● Designing procedures that are suitable for the babies’ very short attention span.

(b) According to Baillargeon, violation of expectation (VoE) is what happens when ‘the rules’ of how the physical world behaves are broken. For example, when a tall carrot is travelling on a track past a window it should be ‘seen’ passing the window and if it is not, this is a violation of expectation.

(c) In what has become known as violation of expectation research, Baillargeon found that infants spend longer looking at the impossible event. She concluded that looking longer indicated surprise and that the infants were surprised because they had expectations about the behaviour of physical objects that the impossible event had violated. In other words, the infants knew that the tall giraffe (or tall carrot) should be seen when it passed behind the cut-out in the screen. The infants in the tall carrot research were four months old and Piaget would argue that a four-month baby, lacking object permanence, would not know how objects should behave. If the violation of expectation experiments give a valid measure of object permanence, then Piaget was wrong, but do these experiments give a valid measure of object permanence?

Evaluation points:
● Because many factors affect how long an infant looks at an object, including colour, the people present, novelty and shape, one limitation of using the VoE method is that results rely on the subjective interpretation of the researcher.
● Haith (1998) argued that it is overly deterministic to suggest that increased looking time provides evidence that infants have innate knowledge of how the physical world behaves.
● Is it valid to conclude that ‘looking time’ is an indicator of infants’ understanding of objects and object permanence?
● Is it valid to infer that babies have an innate understanding of object permanence because they look longer at the VoE event?
● Is it possible to design a valid experiment to measure what pre-verbal infants know about objects?
Component 3: Schizophrenia

1 In the diathesis–stress model, genetic factors are supposedly the diatheses that cause an individual to be genetically predisposed to schizophrenia and environmental factors are more likely to cause schizophrenia in those who have the genetic ‘preparedness’ than in those who do not have the same genetic preparedness. The diathesis–stress model of schizophrenia suggests that some people might have a genetic tendency towards schizophrenia (the diathesis) but that the disorder is triggered by psychological factors such as stressful life events or living in a stressful family environment.

2 In support of this theory, Brown and Birley (1968) found that about 50% of patients experienced a stressful event in the three weeks prior to a psychotic episode. Although this suggests that stressful events may cause schizophrenic episodes, the evidence suggesting a relationship between stressful life events and the onset of schizophrenia is correlational only, therefore causation cannot be concluded. Also, the schizophrenic illness could have been the cause of the life events rather than the life event(s) being the cause of the schizophrenic episode.

3 Possible answer: Some psychologists theorise that abnormal cognitive processes are the cause of schizophrenia, that people with schizophrenia have a failing in ‘some sort of’ cognitive filter that separates background sensory ‘noise’ from useful sensory ‘signals’ and that misinterpretation of excess sensory input results as hallucinations. However, although research suggests that some patients with schizophrenia benefit from CBT, if schizophrenia is ‘a disorder of thinking’ then cognitive behavioural therapy (CBT) should be an effective treatment. Jones et al. (2006) conducted a meta-analysis to compare treatment where CBT was used with standard care, compared with standard care alone, and found that relapse and readmission rates were not reduced. Although some short-term benefits of CBT were found, overall the researchers found no significant improvement in long-term mental states of the CBT-treated patients. A limitation of the cognitive explanation is that except for the ‘theoretical filter’, these cognitive explanations do not explain why the irrational cognitive processes develop. Also, cognitive explanations may encourage the idea that people who have schizophrenia are responsible for their psychological problems, i.e. that they could be ‘normal’ if they ‘wanted to’.

4 Most likely answers will include comments on negative side effects, or that antipsychotic drugs have effects on the biology of the brain that is irreversible.

5 You must discuss more than one biological explanation. Example plan:

<table>
<thead>
<tr>
<th>Biological explanation (1)</th>
<th>Supporting evidence for (1)</th>
<th>Opposing arguments (1)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A01 description</strong></td>
<td><strong>Used as A01/A02</strong></td>
<td>All A02</td>
</tr>
<tr>
<td>Genetic transmission</td>
<td>Gottesman (1991)</td>
<td>Is a reductionist explanation, ignores evidence that abnormal biochemistry in the brain may explain for schizophrenia and ignores evidence that environmental factors, and stressful life experiences may trigger the disease.</td>
</tr>
<tr>
<td>Family, twin and adoption studies suggest that genetics play a major role in the transmission of schizophrenia.</td>
<td>Gottesman and Shields (1976 and 1982)</td>
<td>Does not explain why schizophrenia frequently emerges in young adulthood.</td>
</tr>
<tr>
<td></td>
<td>Kety et al. (1994)</td>
<td>Deterministic – if you have the gene you are bound to develop schizophrenia but a single gene has not been identified.</td>
</tr>
<tr>
<td></td>
<td>Concordance rates for schizophrenia are three times higher in identical twins (MZ) than non-identical twins (DZ).</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Biological explanation (2)</th>
<th>Supporting evidence for (2)</th>
<th>Opposing arguments for (2)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A01 description</strong></td>
<td><strong>Used as A01/A02</strong></td>
<td>All A02</td>
</tr>
<tr>
<td>Biochemical abnormalities.</td>
<td>Antipsychotic drugs that reduce the levels of dopamine in the brain also tend to reduce the positive symptoms of schizophrenia.</td>
<td>Also, most evidence for excess dopamine results from post-mortem studies and it may be that schizophrenia is the cause of the excess dopamine rather than excess dopamine being the cause of schizophrenia.</td>
</tr>
<tr>
<td>The dopamine hypothesis.</td>
<td>Atypical antipsychotic drugs such as clozapine that reduce positive and negative symptoms.</td>
<td><strong>Opposing arguments for (1) and (2)</strong></td>
</tr>
<tr>
<td>An excess of the neurotransmitter dopamine may be involved in schizophrenia.</td>
<td></td>
<td>Alternative explanations – Dysfunctional families?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cognitive explanations?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The diathesis–stress model?</td>
</tr>
</tbody>
</table>
6 **Suggested content:**
- Outline the procedures in a token economy – e.g. based on operant conditioning, awarding of ‘tokens’ when patients with schizophrenia show desirable behaviour, the tokens can be exchanged later for rewards, and thus desired behaviour is positively reinforced.
- Token economies are used for behavioural management so that patients in long-stay hospitals are easier to manage.
- Evidence suggests token economies can be effective in improving behaviour in psychiatric hospitals.
- Token economies do not address symptoms of schizophrenia, so they are not a ‘treatment’.
- Token economies are not effective with unresponsive patients.
- Token economies raise ethical issues because they manipulate the patients for the benefit of staff. They are especially unethical if food, which is a right, is used as a reward.

Component 3: Eating behaviour

1 (a) The results show that there is a higher concordance rating for the monozygotic twins at 55% than the dizygotic twins at 7%. This supports the genetic explanation as concordance rates for the monozygotic twins should be higher as they share 100% DNA and dizygotic lower as they share 50%.

(b) One weakness of the genetic explanation for anorexia is that it is focused on the nature side of the nature/nurture debate. This is due to the fact that twin studies assume that environmental influences are the same for both types of twin and that the only difference is the genetics. It could be argued that monozygotic twins are probably treated more similarly than DZ twins while growing up, which might contribute to the higher concordance rates for anorexia.

2 B

3 (a) Different cultures and sub-cultures have different practices and attitudes towards food. This means some communities of people show differences in eating attitudes mainly due to environmental reasons (such as availability of food) whereas differences between other groups may be based more on religious beliefs.

(b) One strength of the role of culture in food preferences is that research into the acculturation effect Ball and Kenardy (2002) found that for all ethnic groups, the longer the time spent in Australia, the more the women reported attitudes and eating behaviours similar to women born in Australia. This shows how eating behaviour is culturally specific and is not universal. However, Leshman found that Bedouin Arab women living in desert encampments and Bedouin women who had lived for at least one generation in an urban setting had very similar food preferences. Therefore this shows that in some circumstances cultural norms are not adopted by ethnic groups moving to new areas and that original cultural norms can persist.

4 **Model answer:** Most of the evolutionary adaptations occurred due to environmental demands when humans were hunter-gatherers. It was adaptive for our ancestors to prefer energy-dense foods that were free of toxins, which could explain why we have cravings for sweet foods. According to evolutionary psychologists, eating sweet foods would have been adaptive in early humans as foods such as ripe fruit contain large numbers of calories and would provide an easily accessible source of energy. Evolutionary explanations for food preferences can also explain why today we have an aversion to bitter foods that is genetically hardwired, which makes us less likely to eat food that has gone off or is otherwise toxic.

One strength of evolutionary explanations for food preferences is that there is research which supports that children have an innate dislike of bitter tastes, and that as we age our dislike can change through learning and experience. Steiner (1987) has shown that the facial expressions of newborn babies indicate acceptance and pleasure to a sweet taste and rejection and disgust to a bitter taste. Therefore it appears that this preference is innate rather than learned. This could help to explain why children dislike some vegetables, such as broccoli, as they have a bitter taste. However, evolutionary explanations suggest that eating behaviour is universal and ignores social and cultural differences in food preferences, which may limit the validity of the explanation.

5 (a) Restraint theory looks at specifically what happens when people limit what they eat and how this can then lead to some individuals binge eating, which rather than lowering their body weight actually increases it, leading to obesity.

(b) For full marks just include one limitation and ensure you justify why your limitation is a weakness.

One weakness is that most of the research in this area is carried out under controlled conditions in the laboratory. For example, in the study by Herman and Mack (1975), participants were given varying amounts of milkshake. The participants were then allowed to eat as much ice cream as they wanted, to see the difference between restrained and...
non-restrained eaters. This lacks ecological validity as the eating in the study does not reflect eating in everyday life and we cannot apply it to dieting in the real world.

(c) One explanation to ensure a diet is successful is to use goal setting to enable the dieter to know exactly what they are aiming for and be able to easily assess whether they have met their targets, providing motivation for continued success.

6 Possible top band answer: One neural explanation for obesity is the role of leptin, an adipocyte-derived hormone, which is involved predominantly in the long-term regulation of body weight and energy balance by acting as a hunger suppressant signal to the brain. This is linked to obesity as it is argued that obese individuals lack the hormone leptin and therefore do not have the control to stop eating when full. This is linked to the identified obesity (ob) gene first found in a strain of mice deficient in the gene which were obese and insulin resistant and ate voraciously. Another genetic variation that has been linked to obesity is found in Bardet-Biedl syndrome, an identified condition that is caused by mutations of genes that have a role in cell development. Abnormal weight gain typically begins in early childhood and continues to be a problem throughout life, leading to obesity.

One strength of biological explanations for obesity is that there is research evidence to support the role of leptin. Licinio et al. conducted research on a Turkish family with a genetic deficiency resulting in family members lacking the ability to produce leptin. The researchers found that leptin supplements caused their weight and eating behaviour to become normal, supporting the link between leptin and obesity. This is a strength as it shows that the explanation has application to everyday life by suggesting a practical way to control obesity, which increases the probability of overeating as the focus is on the forbidden food. Overall, when explaining obesity, a more holistic approach is needed to take into consideration both biological and psychological influences.

Component 3: Stress

1 The key traits of a hardy personality, known as the three Cs, are having a strong sense of personal control, a strong sense of commitment, and the ability to see problems as challenges to be overcome rather than as stressors.

2 Instrumental support is giving concrete practical help, for example financial assistance, but informational support is giving advice or useful information to help someone.

3 Suggestions may include: low validity because of reliance on memory, it is questionable whether the SRRS covers all life events, the results linking life events as a cause of stress are correlational, thus cause/effect cannot be concluded.

Example answer: The SRRS may not give a valid measure of stress because the experience of a life event is different for each person – for example, some people may be distressed by divorce whereas others are relieved. Also, life events other than the 43 on the SRRS may cause stress, for example having your home flooded.

4 I would advise the factory to create a social club where employees can meet and socialise. Since the factory operates 24 hours a day, employees will be working shifts and working night shifts, which will reduce the opportunity for them to meet with friends and co-workers. Johnson and Hall found that workers who perceived their jobs to be demanding and who had low social support were at risk of developing cardiovascular disease, so the provision of a social club within which to develop networks of social support may reduce absenteeism caused by stress and ill health. Another suggestion might be to increase the sense of control workers have by allowing them to choose their own meal breaks.

5 The answer may include: support for the suggestion that stress causes physical illness from direct studies of immune function in hospital patients [e.g. the work of Kiecolt-Glaser et al.], plus from research by Marmot on civil servants. Counterarguments: the problems in gaining a valid measure of stress, defining and measuring stress, problems with using self-report to measure stress,
the correlational nature of much of the data so no cause and effect conclusions. Also, individual differences – some individuals/personalities are more resistant to stress than others.

Psychological approaches to stress management help people cope with stress by changing the way they think and behave rather than by treating the physiological symptoms of stress. For example, stress inoculation (Meichenbaum) is a cognitive behavioural therapy that prepares people to cope with stress before it becomes a problem.

One major advantage of psychological approaches is that there are no harmful physiological side effects as there are from anti-anxiety drugs and beta blockers. Another advantage of psychological approaches is that they are effective for both short- and long-term stress and can be combined with drug treatments. For example, if people are showing extreme physiological signs of stress, immediate drug treatment may be needed to reduce physiological anxiety and to prepare people for interaction with a therapist.

Psychological therapies, such as stress inoculation, are more effective because if the therapy works, the cause of stress is removed, but with physiological treatments when the patient stops taking drugs, the stressor remains and the symptoms of stress return.

However, individual differences, such as personality traits, may influence whether psychological therapies are effective. For example, psychological approaches may be successful only with patients who have a hardy personality because they have an internal locus of control and will be able to make the commitment to stick to the therapy, whereas the time-pressured Type A personality might find the thought of setting aside hours to work with a therapist an added stressor. Thus psychological therapies such as stress inoculation may be effective with only a limited sample of stressed patients.

Also, whether a psychological approach is effective may depend on the cause of stress because it would be unethical to suggest stress inoculation as treatment for someone who is stressed because of bereavement.

Waxler-Morrison et al. found that women with breast cancer lived longer if they had a network of social support and suggested that social support may be effective because friends provide information and encouragement. If Tabitha joins the support group she may make friends who can provide her with emotional support. The group may also provide informational support in the form of advice and useful information, as well as companionship support that will give Tabitha a sense of social belonging so she will feel she is not alone in dealing with stressful life events.

Component 3: Aggression

1 (a) Berkowitz researched the aggressive cues hypothesis in a laboratory experiment in which student participants were either praised or angered by being given electric shocks, after which they were given the opportunity of delivering electric shocks to the confederate. In condition 1, cues to aggression such as a gun were present but in condition 2 no cues to aggression were present. The rate of electric shocks given to the confederate was higher in the aggressive cues (guns) condition.

These research findings are useful because they suggest that if aggressive cues are removed then we can prevent or reduce aggressive behaviour. A strength of the findings is that the aggression was measured quantitatively so that statistical analysis and comparisons could be undertaken. However, the findings can tell us only how many electric shocks were given – we have no qualitative explanation as to whether the findings were in fact influenced by the presence of the gun. Also, the research findings are environmental reductionism, as they suggest that aggressive behaviour is simply an unthinking response to a stimulus such as a gun or knife and that people do not think about their behaviour.

(b) Possible answer: One of the risks is that young children who play these violent video games will imitate the aggressive behaviour they see on the screen. Social learning theorists propose that aggressive behaviour is learned through indirect experience, that when children observe the behaviour of others they create a mental image of the ‘observed model’ and imitate the learned behaviour at a later date. Bandura found that children imitated the aggressive behaviour of adult role models and that when children observe models who are ‘rewarded’ for aggressive behaviour they are more likely to imitate the behaviour because of the vicarious reinforcement. Since video game players are often rewarded for their ‘kills’ by extra game time and/or extra points scored, the rewards may make it more likely that the violent behaviour will be learned and imitated.

(c) Cognitive priming refers to the activation of existing aggressive thoughts and feelings and suggests that immediately after a violent programme has been viewed, the viewer is primed to respond aggressively because a network of aggressive memories has been activated and retrieved. This theory also suggests that people who play violent video games are primed and ‘ready’ to engage in emotional and physiological aggression.
2. **Possible answer:** One of the risks is that young children who observe people behaving aggressively will imitate the aggressive behaviour they see. Social learning theorists propose that aggressive behaviour is learned through indirect experience, that when children observe the behaviour of others they create a mental image of the ‘observed model’ and imitate the learned behaviour at a later date. Bandura found that children imitated the aggressive behaviour of adult role models and that when children observe models who are ‘rewarded’ for aggressive behaviour, they are more likely to imitate the behaviour because of the vicarious reinforcement. Bandura also found that children are more likely to imitate the behaviour of same-sex role models, so boys are likely to imitate the aggressive behaviour of men and girls the aggressive behaviour of women. 

**Suggested points:** If aggression and murder are caused by genes then we would expect individuals who have similar genes to behave in the same way, but they do not. If aggression is evolved through gene selection it has a biological cause, but in the case of domestic conflict, even when jealous, most men do not beat their partners. Genetic explanations are reductionist and deterministic, proposing that aggression is unavoidable as it is caused by nature rather than by nurture. However, social learning theorists argue that people who behave aggressively have learned to be aggressive by observing aggressive role models. Also, Berkowitz found that students engaged in more aggressive behaviour when ‘aggressive cues’ such as guns were present, so aggressive behaviour cannot be genetic because there are no fixed environmental stimuli to which every human instinctively responds in the same way. 

A problem with researching aggressive behaviour is that when research uses self-report methods there are problems with collecting valid data. If a person is asked to complete a questionnaire which asks whether they behave aggressively, they will probably distort the truth due to wishing to appear more socially desirable. Genetic explanations of aggression tend to be based on small samples, such as the Brunner case study of the family in the Netherlands. Since there is a wide range of emotional, verbal and physically aggressive behaviours, it is not likely that there is a single gene for aggressive behaviour. 

**Component 3: Forensic psychology**

1. It is difficult to define crime because what constitutes a crime in any one society changes across time. Also there are cultural differences in the behaviours that are treated as crimes. 

2. One cognitive bias shown by aggressive offenders is the hostile attribution bias, which is the tendency to interpret the behaviour of others as threatening, aggressive, or both. Offenders who exhibit the hostile attribution bias think that ambiguous behaviour of others is hostile and is directed towards them, and they often respond aggressively to the other person’s behaviour. 

3. **Suggestion:** The decision to categorise the offender as organised or disorganised may bias the investigation because if an error is made at this stage, the profile will target the incorrect sample of the population and will not help the investigators to identify a potential suspect. 

4. **Suggested answers:** All aggressive crimes are not committed in anger – for example, rape is said to be a crime of ‘control’ rather than of anger. Also, most people are able to control themselves when they feel angry – and suggesting that anger causes crime is deterministic as it suggests offenders do not have the free will to choose not to commit crimes. 

5. (a) \(60 : 75\) simplified as \(12 : 15\) simplified as \(3 : 4\) 
   (b) \(45 : 30\) simplified as \(9 : 6\) simplified as \(3 : 2\) 
   (c) \(60\) minus \(45 = 15\); \(15\) as a percentage of \(60\) is \(25\%;\) so the token economy reduced aggressive behaviour of the group by \(25\%\) 
   (d) \(75\) minus \(30 = 45\); \(45\) as a percentage of \(70\) is \(64.29\%;\) so the anger management reduced aggressive behaviour of the group by \(64.29\%\) 
   (e) Nominal level data. 
   (f) A chi square because the level of data is nominal and we are looking for an association between the two types of treatment and changes in aggressive behaviours. 

**Suggestions:** Token economy is based on behaviourist learning theories but anger management is a form of CBT. Token economy does not require the active participation of the young offenders, whereas to be effective, the young offenders must be motivated and willing to participate in anger management. In a token economy the behaviour is ‘shaped’ without the conscious knowledge of the offenders, but anger
management requires the informed consent of participants. When the 'reward giving' stops in the token economy, the effect may not last, but if the CBT in anger management is successful, the effect may last a lifetime.

(h) Research suggests that many crimes are caused by aggression and anger and that many offenders reoffend when they are released from prison. If anger management treatment helps offenders become less likely to commit aggressive crimes, less money will be required for the criminal justice system and for keeping angry offenders incarcerated. Also, if inmates are less aggressive it will cost less to manage and run prisons because they will need fewer staff and will be easier to manage.

(i) Your answer could include:

- genetic explanations focusing on ‘criminal’ genes such as the MAO-A gene linked to criminal aggression (Brunner)
- brain pathology explanations, research by Raine into Antisocial Personality Disorder
- the biological aspects of Eysenck’s personality theory – the under-arousal of extroverts
- evidence from MZ/DZ twin studies and family studies looking at genetic factors
- concordance rates in MZ twins are not high, thus non-genetic environmental factors
- counter-evidence for environmental factors in offending behaviour, for example criminal thinking patterns, moral development, social factors
- general nature of ‘offending behaviour’ – not all crimes likely to be associated with biology
- reductionism, nature vs nurture, determinism vs free will?

Possible answer: One issue faced by psychologists who research biological explanations for criminal behaviour is how to separate the effects of nature (biology) from the effects of nurture (upbringing), which is almost impossible. Research into the concordance rates of criminality between MZ and DZ twins often underestimates the extent to which twins share the same environment, and even though Raine found that biological factors, such as low physiological arousal, correctly classified 74% of all participants as criminal or non-criminal, other research has found that family influence and/or low morality also predict criminality. This is a problem because if we focus on biological factors we may, by ignoring social and environmental factors, draw a reductionist conclusion as to why people turn to crime.

Another issue faced by psychologists who research biological explanations for criminal behaviour is obtaining a representative sample of criminals. This is a problem for two reasons: first because as people age their biology changes – for example, adolescent biology may be very different to the biology of mature people – and second because to obtain biological samples in an ethical manner, a volunteer sample is needed. This means that when samples are biased by ‘age or willingness to participate’, as in the case of the Raine sample of murderers, or the prisoners whose testosterone was measured in the Dabbs study, the findings may not be generalised to explain why a wide range of people commit crimes.

Also, research can be described as reductionist when it explains complex human behaviour – in this case, why people commit crimes, in terms of one biological factor, ignoring other possible explanations. Biological explanations of criminal behaviour are reductionist because they explain a complex range of criminality in terms of genes or hormones. For example, even though research by Brunner suggests that genes (the warrior gene) cause some violent criminality, other research by Farrington and Sutherland suggests that criminal behaviour is learned. In addition, cognitive research has found that criminal thinking patterns differ between criminals and non-criminals – criminal thinking being egocentric and immature. Though it is impossible to separate the effects of nature (biology) from the effects of nurture (upbringing), research that focuses only on biological factors, and which ignores social and cognitive factors, cannot fully explain why people turn to crime.

Component 3: Addiction

1 One strength of cognitive explanations is that they are well supported by research. For example, Strickland et al. (2006) found that frequent gamblers were more likely to hold beliefs consistent with cognitive bias and the illusion of control, as measured by the Gamblers’ Belief Questionnaire, when compared with both infrequent gamblers and non-gamblers. This clearly shows that thought processes are an important part of gambling behaviour. One weakness is that cause and effect of cognitive bias cannot be shown. For example, does cognitive bias lead to gambling behaviour or does gambling behaviour lead to the development of bias?

2 C

3 Stress is a risk factor in the development of addiction as the initiation of smoking or drinking alcohol may be due to the belief that
the substance may help reduce everyday stress levels. There is evidence to show a correlation between stress and addiction, in both extreme traumatic events and the everyday low-level stress that many of us experience. Post-traumatic stress disorder may lead to high levels of alcohol and drug addiction and everyday stress can lead to addiction to sugar and nicotine.

4 For full marks just include one strength and one limitation. The point needs to be clear and you need to justify why they are a strength/limitation.

A strength of behavioural interventions is that therapies focus on cue exposure and relapse triggers. By repeated exposure to relapse triggers in the absence of the addiction, the addict learns to stay addiction-free in high-risk situations. However, there is evidence to suggest that treating the symptoms means that the underlying problem is still present and that other addictive behaviours can replace the one that has ceased. This suggests that a combination of interventions may be more effective in reducing addictive behaviour.

5 (a) The trait approach to personality would define the risk of addiction as due to an individual having an addictive personality. This would explain Charmaine’s behaviour as she is showing the main traits associated with an addictive personality. These include sensation seeking, as seen in her love of funfairs and white water rafting. She is taking up a new activity – online bingo – that will also match her sensation seeking and has led to her being unable to stop.

(b) Charmaine will be encouraged to change her thoughts and beliefs about her new addiction to online bingo, for example identifying and challenging the belief that gambling will always produce the positive result of winning. This could be achieved by asking her to show the evidence that most people win at bingo more often than they lose by researching case studies of gambling addicts compared to the profits of the bingo sites.

(c) A strength of using cognitive behavioural therapy for addictions is that the therapy can be tailored to the individual person compared to drug treatments that are more generalised. For example, with Charmaine her beliefs are related to bingo compared to another patient whose addiction may be to nicotine. This is a strength as it increases the validity of cognitive behavioural therapy as an application to all addictive behaviours and is more likely to be successful.

6 For a top band mark (13–16) knowledge of explanations is accurate and detailed. Discussion is thorough and effective. The answer is clear, coherent and focused and specialist terminology is used effectively.

Possible top band answer: Neurotransmitters are brain chemicals necessary for the transfer of information within the nervous system: they transmit messages across synapses. Nicotine affects the nervous system by increasing dopamine and acetylcholine levels, a neurotransmitter which appears to be involved in reward processes. In order to maintain mood states the mesolimbic dopamine system releases small amounts of dopamine in the synaptic cleft. Biologically, nicotine has been shown to increase dopamine release within the brain reward system, giving the user a positive feeling. This positive feeling continues as long as the smoker maintains addictive smoking behaviour.

One strength of neurochemistry as an explanation for addiction is there is evidence to support the action of neurotransmitters in specific areas of the brain and the link to nicotine dependence. For example, Liebman and Cooper (1989) found that people who are susceptible to addictions might have a more sensitive mesolimbic dopamine pathway. This is further supported by research into genetics. For example, Lerman et al. (1999) found that people with a SLC6A3-9 gene, which is linked to the dopamine system, are less likely to take up smoking than those without the gene. We do not yet have enough understanding of individual neurotransmitters and their roles in brain/behaviour function to be able to explain addiction and the effects of nicotine.

Smoking can also be explained by cue reactivity, which is linked to classical conditioning and explains how the smoker associates the behaviour with a variety of cues that strengthen the addiction. These may include lighters, ash trays and even locations where the behaviour usually occurs, such as at a bar. This results in the associated objects or locations leading to the conditioned response in the absence of the smoking behaviour.

Cue reactivity is supported by Engelmann et al., who provided findings from a meta-analysis of studies using fMRIs of smokers who were shown smoking-related cues compared with neutral cues. The related cues caused a larger neural response. This shows that cues in the environment are linked to addiction. Additionally, the theory has application as it shows that in order to cease smoking, the smoker needs to avoid not only the nicotine but also the objects and situations associated with the smoking behaviour.