

Mark schemes

Q1.

[AO1 = 6 AO3 = 10]

Level	Mark	Description
4	13-16	Knowledge of one or more biological explanations for offending is accurate and generally well detailed. Evaluation is thorough and effective. Minor detail and/or expansion of argument is sometimes lacking. The answer is clear, coherent and focused. Specialist terminology is used effectively.
3	9-12	Knowledge of one or more biological explanations for offending is evident but there are occasional inaccuracies/omissions. Evaluation is mostly effective. The answer is mostly clear and organised but occasionally lacks focus. Specialist terminology is used appropriately.
2	5-8	Limited knowledge of one or more biological explanations for offending is present. Focus is mainly on description. Any evaluation is of limited effectiveness. The answer lacks clarity, accuracy and organisation in places. Specialist terminology is used inappropriately on occasions.
1	1-4	Knowledge of one or more biological explanations for offending is very limited. Evaluation is limited, poorly focused or absent. The answer as a whole lacks clarity, has many inaccuracies and is poorly organised. Specialist terminology is either absent or inappropriately used.
	0	No relevant content.

Possible content:

- Lombroso's atavistic form (criminal individuals are evolutionarily ill-suited to modern society)
- genetic explanations – faulty MAOA gene leading to higher than usual levels of serotonin; evidence from disabling the MAOA gene on the X chromosome in mice
- role of serotonin in inhibiting amygdala activity – low levels of serotonin linked to aggression
- neural explanations – reduced prefrontal cortex activity in people with antisocial personality disorder; impaired executive functioning in the prefrontal cortex; lowered EEG arousal
- role of mirror neurons – possible neural switching in people with antisocial personality disorder.

Possible evaluation

- use of evidence to support/contradict biological explanation(s)
- problems with some evidence, eg based on animal studies so might not tell us much about human offending
- problems demonstrating cause and effect – altered biological function may be a consequence of offending behaviour rather than a cause

- mediating variables – social factors, eg childhood experiences, education etc may mediate the effects of biological influences
- links to approaches, eg offending may be better explained through social learning (SLT) and reward systems (behaviourism)
- implications of biological explanations, eg moral and legal responsibility and behaviour change
- implications for treating offenders – if offending is biological therapy may not work
- evaluation in relation to broader issues, eg determinism, reductionism etc
- comparison with alternative explanations, eg differential association theory, psychodynamic theory, cognitive explanations.

Credit other relevant material.

[16]

Q2.

[AO1 = 3 AO3 = 5]

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

Possible content:

- irregularities in levels of neurotransmitters have been linked to violence/offending, eg high levels of noradrenaline – violence and aggression; low levels of serotonin – greater impulsivity; dopamine indirectly linked through role in addiction
- shortened version of the MAOA gene may alter levels of neurotransmitters dopamine and serotonin
- reduced limbic system activity in psychopathic offenders when exposed to tasks requiring emotional processing (Kent 2001)

- reduced frontal lobe volume in people with anti-social personality disorder (Raine 2000)
- reduced activity in the pre-frontal cortex which controls emotional behaviour (Raine 2000)
- poor executive functioning affecting cognitive control and decision-making linked to juvenile offending (Morgan and Lilienfeld 2000)
- lower EEG arousal (suggesting cognitive immaturity) at age 15 years linked to later criminal activity (Raine 1990).

Possible discussion points:

- cause and effect cannot be established in any human studies – all rely on correlation so other variables could be responsible for the offending behaviour – only animal studies are experimental
- many studies link genes with anti-social personality disorder and/or substance abuse but not necessarily with offending
- biological determinism and implications of accepting that offending is due to biological function, eg implications for the justice system and for dealing with offending.
- reductionism – need to look at wider factors such as social context, substance abuse, mental illness, upbringing etc
- comparison with social-psychological explanations, eg social learning theory; cognitive explanations or alternative biological explanations, eg genetic.

Credit other relevant material.