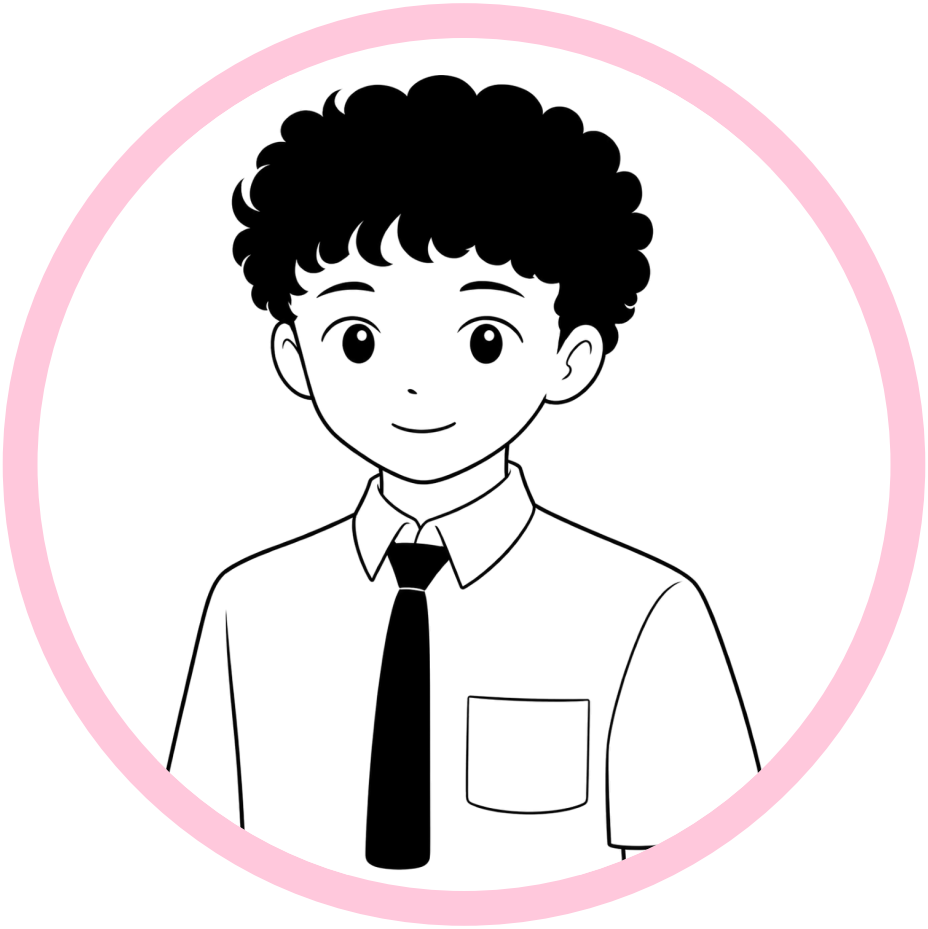
AQA A-LEVEL PSYCHOLOGY · 7182

PSYCHOLOGY



MARK SCHEME

3.3.10 NICOTINE ADDICTION: EXPLANATIONS

SCORE	PERCENTAGE
/26	%

STEMUP

These questions belong to AQA, not to us.

The examination questions, mark schemes and examiner reports in this pack were written and published by AQA. They are past assessment materials, reproduced here so that students can revise from them.

What we do not own

STEMUP is not affiliated with AQA and does not own, and makes no claim to own, any of the question, mark scheme or examiner report material in this pack. AQA has not endorsed, approved or been involved in the production of it. AQA and the qualification titles used here belong to their respective owners and appear for identification only.

Where to find the originals

AQA publishes its past papers, mark schemes and examiner reports free of charge. Always check the current specification at aqa.org.uk before you revise, because content and wording can change between series.

If you hold the rights to any material in this pack and would like it amended or removed, contact admin@stemup.co.uk and we will act on it.

Q1.

[AO1 = 2]

2 marks for a clear, coherent explanation of how dopamine is involved in addiction.

1 mark for a very brief, limited or muddled explanation.

Content:

- nicotine stimulates dopamine activity in the brain (via reward pathways – ventral tegmental area → nucleus accumbens in the mesolimbic system → prefrontal cortex)
- creating pleasurable sensation/reward/ feelings of euphoria which leads to repeated use/craving.

Detail in brackets not necessary for full marks.

Q2.

[AO1 = 3 AO3 = 5]

Level	Marks	Description
4	7 – 8	Outline of one or more explanations for nicotine addiction is accurate and generally well detailed. Evaluation is effective. The answer is clear, coherent and focused. Specialist terminology is used effectively. Minor detail and/or expansion of argument sometimes lacking.
3	5 – 6	Outline of one or more explanations for nicotine addiction is evident. There are occasional inaccuracies. There is some effective evaluation. The answer is mostly clear and organised. Specialist terminology mostly used effectively.
2	3 – 4	Outline of one or more explanations for nicotine addiction is present. Focus is mainly on description. Any evaluation is of limited effectiveness. The answer lacks clarity, accuracy and organisation in places. Specialist terminology used inappropriately on occasions.
1	1 – 2	Outline of one or more explanations for nicotine addiction is limited. Evaluation is limited, poorly focused or absent. The answer as a whole lacks clarity, has many inaccuracies and is poorly organised. Specialist terminology either absent or inappropriately used.
	0	No relevant content.

Possible content:

- Brain neurochemistry, including the role of dopamine (activating reward pathways)
- Learning theory (which could include classical and operant conditioning, and social

learning), including reference to cue reactivity

- Role of brain acetylcholine in nicotine effects

Possible evaluation points

- Research findings eg non-human animal work on the effects of nicotine on the brain, including activation of dopamine reward pathways
- Research findings using human participants on the effects of nicotine on the brain
- Research findings on cue reactivity – the role of conditioned cues (eg social context) in initiating and maintaining addiction (non-human animals and human studies)
- Interaction between physical/pharmacological and psychological explanations for initiation and maintenance of nicotine addiction
- Role of individual personality factors eg sensation-seeking, extraversion/neuroticism
- Comparison with alternatives

Credit other relevant material.

Q3.

Please note that the AOs for the new AQA Specification (Sept 2015 onwards) have changed. Under the new Specification the following system of AOs applies:

- AO1 knowledge and understanding
- AO2 application (of psychological knowledge)
- AO3 evaluation, analysis, interpretation.

Although the essential content for this mark scheme remains the same, mark schemes for the new AQA Specification (Sept 2015 onwards) take a different format as follows:

- A single set of numbered levels (formerly bands) to cover all skills
- Content appears as a bulleted list
- No IDA expectation in A Level essays, however, credit for references to issues, debates and approaches where relevant.

AO1 = 4

AO1 credit is awarded for an outline of the biological approach to explaining smoking behaviour. It is possible for candidates to refer to all three stages of smoking addiction, but maintenance and relapse are more likely than initiation. The biological model may be presented generically or candidates may focus in more detail on a single biological explanation eg genetic or neurochemical. Examiners need to be aware of a breadth/ depth trade-off.

Possible content includes:

- The processes of physical dependency and tolerance
- Genetic factors
- Neurochemistry and the dopamine reward system
- The endogenous opoid system (encephalin and endorphins)

- Nicotine regulation model (Shachter 1977).

AO1 Mark bands
4 marks Sound Knowledge and understanding are accurate and well detailed. Organisation and structure of the answer are coherent.
3 marks Reasonable Knowledge and understanding are generally accurate and reasonably detailed. Organisation and structure of the answer are reasonably coherent.
2 marks Basic Knowledge and understanding are basic/relatively superficial. Organisation and structure of the answer are basic.
1 mark Rudimentary Knowledge and understanding are rudimentary and may be very brief, muddled and/orinaccurate. Lacks organisation and structure.
0 marks No creditworthy material.

AO2 / AO3 = 4

For AO2 / AO3 credit, candidates are required to evaluate the biological explanation of smoking. This is likely to consist of research evidence to support or contradict the claims of the model.

Possible content includes:

- Twin studies demonstrating genetic influences (Kendler 1999)
- Identification of specific genes (eg: SLC6A3-9) which regulate dopamine (Lerman 1999) and influence relapse (Sabol 1999)
- Animal research (eg Corigall and Coen 1991, Harrison 2002) which supports the dopamine reward model

Candidates may also discuss the relative weakness of the biological model in explaining initiation compared with behavioural and/or cognitive approaches. The diathesis stress model may also be used for evaluation.

AO2/AO3 Mark bands
4 marks Effective Commentary and/or evaluation demonstrate sound analysis, understanding and interpretation. The answer is well focused and shows coherent elaboration and/or a clear line of argument.
3 marks Reasonable Commentary and/or evaluation demonstrate reasonable analysis and understanding.

The answer is generally focused and shows reasonable elaboration and/or a line of argument is evident.
2 marks Basic Commentary and/or evaluation demonstrate basic, superficial understanding. The answer is sometimes focused and shows some evidence of elaboration.
1 mark Rudimentary Commentary and/or evaluation are rudimentary, demonstrating a very limited understanding. The answer is weak, muddled and incomplete. Material is not used effectively and may be mainly irrelevant.
0 marks No creditworthy material.

Q4.

Please note that the AOs for the new AQA Specification (Sept 2015 onwards) have changed. Under the new Specification the following system of AOs applies:

- AO1 knowledge and understanding
- AO2 application (of psychological knowledge)
- AO3 evaluation, analysis, interpretation.

Although the essential content for this mark scheme remains the same, mark schemes for the new AQA Specification (Sept 2015 onwards) take a different format as follows:

- A single set of numbered levels (formerly bands) to cover all skills
- Content appears as a bulleted list
- No IDA expectation in A Level essays, however, credit for references to issues, debates and approaches where relevant.

AO1 = 4

Candidates are required to outline the learning model of addiction. They are not asked to do this in the context of either gambling or smoking but it is perfectly acceptable for candidates to take this approach. Similarly, they are not required to consider all aspects of addictive behaviour ie initiation, maintenance and relapse so answers which consider all, two or one of these are equally acceptable. There is, of course, a depth-breadth trade-off. The learning model incorporates classical and operant conditioning as well as social learning.
Candidates might also legitimately describe cue-reactivity theory.
Candidates who outline learning mechanisms (eg classical conditioning) without application to addiction can achieve a maximum of 1 mark.
Evaluation is not required here and is not credit-worthy.

AO1 mark bands
4 marks Outline is reasonably thorough, accurate and coherent.
3 – 2 marks Outline is limited, generally accurate and reasonably coherent.

STEMUP.CO.UK

1 mark Outline is weak and muddled or very limited.
0 marks No creditworthy material.

Q5.

Please note that the AOs for the new AQA Specification (Sept 2015 onwards) have changed. Under the new Specification the following system of AOs applies:

- AO1 knowledge and understanding
- AO2 application (of psychological knowledge)
- AO3 evaluation, analysis, interpretation.

Although the essential content for this mark scheme remains the same, mark schemes for the new AQA Specification (Sept 2015 onwards) take a different format as follows:

- A single set of numbered levels (formerly bands) to cover all skills
- Content appears as a bulleted list
- No IDA expectation in A Level essays, however, credit for references to issues, debates and approaches where relevant.

AO2 / 3 = 4

Candidates are likely to explain this in terms of social learning theory. For full marks, they need to explain why young people are likely to copy observed behaviour in films. For example, in terms of the attractiveness / likeability of the actors or the characters they play; positive outcomes etc.

Candidates might refer to research that has specifically focused on the influence of film eg Gunakesera et al (2005), Dalton et al (2003), Distefan et al (1999).

Answers which make no reference to psychological studies or theories cannot exceed 2 marks.

AO2 Mark bands
4 marks Answer demonstrates reasonable analysis and understanding.
3 – 2 marks Answer demonstrates basic analysis and understanding.
1 mark Answer is rudimentary demonstrating very limited understanding.
0 marks No creditworthy material

Q1.

This question was generally well answered, with over half of students gaining full marks.

Q3.

This question produced some impressive answers with detailed and accurate AO1 and AO2 / 3. Students who did best structured their description of the biological model around the stages of smoking addiction (initiation, maintenance and relapse) presenting explanation followed by research evidence. Many answers achieved the full four marks for AO1 providing impressive detail about the possible genetic bases of smoking, the role of particular genes and the links to biochemistry.

Weaker students often focussed on reward pathways; description of these was often rather vague and terms such as ‘down regulation’ were used imprecisely. Weaker students also became sidetracked into generic evaluation (eg commentary on lack of concordance in twin studies and comments on issues and debates such as free will and determinism) receiving basic marks. Some students provided research studies which were weakly linked to smoking, for example cocaine addiction in rats. Such material could have gained credit if it had been used effectively and linked clearly and explicitly to smoking addiction.

Q4.

Most candidates appeared to understand some principles of the learning model. However, many answers described the processes of classical / operant conditioning and social learning without explaining or illustrating these within the context of addiction. Weaker candidates often illustrated the principles with reference to Pavlov’s dogs or Bandura’s Bobo doll which received minimal credit if there was no attempt to apply this to addiction. Candidates who did best structured their description around one of the examples on the specification – smoking or gambling, which helped them to demonstrate their understanding of the learning model. Reference to all stages of addiction (initiation, maintenance and relapse) was not required for higher marks.

Q5.

Candidates seemed to ignore the requirement to use research in their answer to this question, so produced very generic and sometimes almost common sense answers. The other problem was ignoring the requirement to focus on smoking, as opposed to other addictive behaviours. Better answers used specific studies or considered the role of social learning to explain why such films might encourage young people to start smoking.