Explanations for Nicotine Addiction - Mark Scheme

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

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- Content appears as a bulleted list
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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	

Q4.

[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.