

Mark schemes

Q1.

[AO1 = 2]

1 mark for each correct letter:

Answer **A** – a decrease in the release of adrenaline.Answer **D** – the parasympathetic division being in control of functioning.

[2]

Q2.

[AO1 = 3 AO2 = 3]

Level	Marks	Description
3	5-6	Knowledge of the flight or fight response is clear and accurate with some detail. The material is applied effectively with some detail. The answer is generally coherent with effective use of terminology.
2	3-4	Knowledge of the flight or fight response is evident and mostly accurate. Application is partly effective. The answer lacks clarity and organisation in places. Use of terminology is inappropriate on occasions. OR knowledge only at level 3 (maximum 3 marks).
1	1-2	Knowledge of the flight or fight response is limited. Application is not always effective. The answer lacks accuracy and detail. Use of terminology is either absent or inappropriate. OR knowledge only at level 1/2.
	0	No relevant content.

Possible content:

- the fight/flight response is generated by the sympathetic branch of the ANS
- the hypothalamus stimulates the SNS
- SNS stimulates the adrenal medulla to release adrenaline into the blood stream/endocrine system and noradrenaline is released
- generalised effects of adrenaline such as increased breathing rate, sweating, pupil dilation, etc
- adrenaline inhibits saliva production, which may explain Xavier's dry mouth
- Xavier's shaky hands may be caused by adrenaline as adrenaline increases muscle tension, causes an increase in heart rate (Xavier's heart was pounding)/increases blood flow to muscles (which can cause limbs to shake) and adrenaline stimulates glucose to be released/increases blood sugar levels, providing more muscle fuel
- digestion is inhibited during SNS arousal, which may explain why Xavier felt sick
- once the stressor is gone the PNS acts to dampen the stress response and return the heart/breathing rate to resting levels/initiate digestion, etc, this

may explain why after 20 mins Xavier calmed down.

Credit other relevant material.

[6]

Q3.

[AO1 = 3 AO2 = 3]

Level	Marks	Description
3	5-6	Knowledge of the role of adrenalin in the fight or flight response is clear and generally well detailed. Application to Ian's experience is mostly clear and effective. The answer is generally coherent with appropriate use of terminology.
2	3-4	Knowledge of the role of adrenalin in the fight or flight response is evident. There is some effective application to Ian's experience for 4 marks. The answer lacks clarity in places. Terminology is used appropriately on occasions.
1	1-2	Knowledge of the role of adrenalin in the fight or flight response is limited. Application to Ian's experience is either absent or lacks focus on the role of adrenalin. The answer as a whole lacks clarity and has inaccuracies. Terminology is either absent or inappropriately used.
	0	No relevant content.

Possible content:

- the fight or flight response occurs in a stressful situation and causes adrenalin to be released from the adrenal medulla (and triggers the sympathetic action)
- direct effects of adrenalin: increases heart rate, constricts blood vessels; increasing rate of blood flow and raising blood pressure; increases blood to brain and skeletal muscle
- general effects of adrenalin: preparing the body for action, fight or flight; increasing blood supply/oxygen, to skeletal muscle for physical action; increasing oxygen to brain for rapid response planning
- as the stressful situation passes adrenalin levels return to normal and heart rate decreases (parasympathetic action).

Possible application:

- fear of hitting the branch triggered the flight or fight response
- adrenalin caused Ian's heart rate to increase
- Ian's mouth went dry because saliva production is inhibited
- Ian's muscles tensed allowing him to respond rapidly and slam on his brakes
- when Ian realised that he was not going to hit the branch the fear passed, adrenalin levels fell and so did his heart rate.

Note: Maximum of Level 1 if the response is not explicitly focused on the causal role of adrenalin in the fight or flight response.

[6]