

Fight or Flight – Mark Scheme

Q1.

[AO1 = 4]

Level	Marks	Description
2	3 – 4	Knowledge of the role of adrenaline in the fight or flight response is clear and mostly accurate.
1	1 – 2	Knowledge of the role of adrenaline in the fight or flight response is incomplete/partly accurate. For 1 mark there may be some detail of direct or general effects but not explicitly linked to fight or flight.
	0	No relevant content.

Possible content:

- Adrenaline is released from the adrenal medulla in response to activation of the sympathomedullary pathway.
- Adrenaline has a range of effects on the body
- Direct effects of adrenaline
 - increase heart rate
 - constricts blood vessels, increasing rate of blood flow and raising blood pressure
 - diverts blood away from the skin, kidneys and digestive system
 - increases blood to brain and skeletal muscle
 - increases respiration and sweating
- The general effects of adrenaline
 - prepare the body for action, fight or flight,
 - increase blood supply/oxygen, to skeletal muscle for physical action
 - increase oxygen to brain for rapid response planning

Up to 2 marks for accurate detail of the effects of adrenaline on the body eg outline of two different effects, or detailed account of one effect. 2 further marks for an account of the role of adrenaline in the fight or flight response ie providing a context for the various effects of adrenaline on the body (eg last two bullets).

Q2.

[AO1 = 2, AO2 = 2]

AO1

Up to 2 marks for description of the actions of the autonomic nervous system. Likely points: one section of the autonomic nervous system (sympathetic nervous system) responds to a perceived threat / it produces physiological changes that prepare the body for fight or flight (the alarm response) (1), and the other section (parasympathetic nervous system) restores normal physiological functioning when the threat has passed (1).

If candidates simply state *flight or flight* and *rest and digest* with no further explanation 1 mark only.

AO2

Up to 2 marks for application to the description. One mark for application to sympathetic activity – breathing quickens, mouth dries, heart pounds. One mark for application to parasympathetic – breathing slows down / becoming calm.

Maximum of 2 marks if 'sympathetic' and 'parasympathetic' sections are mislabelled in AO1 description

Q3.

[AO2 = 4]

Level	Mark	Description
2	3-4	Knowledge of the fight or flight response is clear and mostly accurate. The material is applied appropriately. The answer is generally coherent with effective use of terminology.
1	1-2	Some knowledge of the fight or flight response is evident. Application is not always effective. The answer lacks accuracy and detail. Use of terminology is either absent or inappropriate. Or knowledge only, at level 2.
	0	No relevant content.

Possible content:

- the fight or flight response causes adrenaline to be released which can cause an increased production of sweat and faster heart and breathing rate which could be off putting and unhelpful during a driving test (e.g. sweaty hands may make it harder to grip the steering wheel).
- the fight or flight response enables a quick reaction to fight the threat or run away from it but neither of these options would be helpful in a driving test as if you ran away or attacked the instructor you would fail the test.

Credit other relevant material.

[4]

Q4.

(a) **AO2 = 2**

- Sympathetic-adrenal system is activated.
- Hormones are released for the fight-flight response.
- Digestive system "shuts down".

For example, the pituitary-adrenal system is activated (1 mark). This causes several things to happen such as adrenaline released, which increases heart rate (elaboration for 2nd mark).

(b) **AO2 = 2**

One mark for explanation and further mark for elaboration.

- After a few minutes the parasympathetic NS will start to restore the body's response.

For example, after a few minutes the parasympathetic branch of the ANS will start to work (1 mark). This will reduce the "flight or fight" response and bring the body back to normal (2 marks).