

## Mark schemes

**Q1.****[AO1 = 4]**

Answers:

**A** – Neophobia**B** – Restraint**C** – Disinhibition**D** – Taste aversion

No credit if more than one letter is attached to a particular term.

**[4]****Q2.****[AO1 = 2 AO3 = 2]****AO1**1 mark for a valid example of neophobia and **1 mark** for a valid example of taste aversion.

To be creditworthy the neophobia example should involve avoidance of a specific new/unfamiliar food and the taste aversion example should involve avoidance of a specific food after it has been paired with a toxic substance/event or that has characteristics likely to induce illness (eg bitterness).

Example of neophobia: babies' avoidance of new vegetables.

Examples of taste aversion: avoidance of bitter tasting foods, eg broccoli/sprouts; avoidance of poison-laced bait in rats; rats' avoidance of sweet liquid after paired with injections of lithium chloride; avoidance of ice-cream after pairing with chemotherapy.

Credit other valid examples.

Examples will probably be embedded in the analysis of the difference.

**AO3**

**2 marks** for a clear and coherent explanation of a difference which clearly conveys the notion of innate dislike of newness versus dislike based on danger/toxicity/bitterness (which could be innate/learnt).

**1 mark** for a limited/partial explanation of the difference.

**0 marks** no relevant content.

**Content:**

Neophobia is innate avoidance relating only to new/unfamiliar foods (usually occurs in young children) whereas taste aversion is innate/conditioned avoidance of foods that are likely to result in a bad experience/poisoning/illness (and can occur at any age).

**[4]**

**Q3.****[AO1 = 3 AO3 = 3]**

Level	Marks	Description
4	5-6	Outline is clear, accurate and detailed. Limitation is appropriate and well outlined. Answer is organised and coherent. Specialist terminology is used effectively.
2	3-4	Outline is mostly clear but lacks detail in places. Limitation is appropriate but the outline lacks detail. There is some appropriate use of specialist terminology. <b>OR</b> one aspect at L3 (maximum 3 marks).
1	1-2	Outline is limited/muddled. Limitation is limited/muddled. The answer lacks clarity and accuracy. Specialist terminology is either absent or inappropriately used. <b>OR</b> one aspect at L1/2.
	0	No relevant content.

**Possible content:**

- food preferences are acquired through experience and association
- role of classical/operant conditioning/reinforcement and social learning/modelling
- cultural norms influence attitudes to certain foods leading to cultural differences in likes/dislikes (exposure hypothesis).

**Possible limitations:**

- learning does not explain innate food preferences, eg preference for sweetness
- evolutionary explanation better able to explain some food preferences, eg preference for fat due to biological drive for survival
- classical conditioning better able to explain food aversions than preferences
- not possible to explain complex behaviour using just one explanation – probably multiple influences.

Credit other relevant material and limitations.

**[6]**

**Q4.**

[AO1 = 6 AO2 = 4 AO3 = 6]

Level	Mark	Description
4	13-16	Knowledge of two explanations for food preferences is accurate and generally well detailed. Application to the stem is effective. 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 two explanations for food preferences is evident but there are occasional inaccuracies/omissions. Application/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 two explanations for food preferences is present. Focus is mainly on description. Any evaluation/application is of limited effectiveness. The answer lacks clarity, accuracy and organisation in places. Specialist terminology is used inappropriately on occasions. <b>OR one</b> explanation at L3/4.
1	1-4	Knowledge of two explanations for food preferences is very limited. Application/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. <b>OR one</b> explanation at L1/2.
	0	No relevant content.

**Possible content:**

- evolutionary explanation – preference and avoidance aid survival and beneficial traits/behaviours are therefore bred into a population and become prevalent – specific genes code for specialised taste receptors (eg T1r2, T1r3 genes code for sweetness)
- learning theory explanation – we learn to prefer certain foods through observation, imitation and modelling (social and cultural learning) or through direct reinforcement (operant conditioning) or through temporal association (classical conditioning)
- classical conditioning can also explain avoidance of foods after a bad experience, eg vomiting can become a conditioned response (the Garcia effect)
- specific examples of how preferences/aversions evolve or are learned, eg for sugar, salt, fat, bitterness etc.

**Possible application:**

- Arya's reference to preference for sweet foods – foods that are sweet such as peas and biscuits may have evolutionary value – sugar provides body with fast-acting energy needed for survival

- Arya's reference to neophobia – avoidance of new tastes – may have evolutionary value as any new food could be harmful/poisonous
- Neela's reference to eating as a family refers to social/cultural learning through modelling – her child will observe and imitate behaviours/preferences of the parents and adopt the family norms
- Neela's reference to roast dinners – foods high in fat have a survival value as they are high in calories.

**Possible evaluation:**

- use of evidence to support/contradict explanations
- gut microbe theory – preferences evolve to the benefit of gut microbes and not to the benefit of the host human
- individual differences in taste experience, eg some people are genetically more/less sensitive to bitterness which does not support the evolutionary explanation
- links with fight or flight – anxiety leads to greater preference for fuel foods to provide more energy
- larger number of receptors to distinguish bitter than sweet – perhaps because bitter food can be dangerous so need for fine discrimination
- classical conditioning explains aversions better than preferences
- power of innate influences versus culture and learning – chilli exposure
- discussion of competing influences of parents, peers and media/advertising – implications including economic implications.

**Note:** if two of the following are presented as separate explanations they can be credited as such: neophobia, taste aversion, preference for sweet, salt and fat.

Credit other relevant material.

**[16]**

**Q5.****[AO1 = 2 AO3 = 2]**

Level	Mark	Description
2	3-4	Outline of a study of taste aversion is clear and accurate. Evaluation is clear, coherent and appropriate.
1	1-2	Outline is limited or muddled. Evaluation is limited or inappropriate.
	0	No relevant content.

**Possible findings:**

- Garcia (1977) – wolves and coyotes developed aversion (CR) to mutton/live sheep meat (CS) after induced sickness (UCR) pairing mutton with lithium chloride (UCS)
- Bernstein and Webster (1980) – adult humans developed aversion (CR) to ice-cream (CS) after pairing ice-cream (UCS) with nausea-inducing chemotherapy sessions (UCR)
- Garcia and Koelling (1966) – rats developed taste aversion (CR) to sweet water (CS) after pairing it with poison (UCS) – same effect did not occur when using electric shocks as the UCS.

**Possible evaluation points:**

- analysis of implications – findings suggest a preparedness to develop aversions to keep us safe, consistent with evolutionary theory about innate mechanisms for survival
- role of classical conditioning is complex – pairings must be related to ingestion of a substance, eg electric shock does not have the same effect
- role of bitterness unclear – some bitter foods have protective effect on health
- methodological issues, eg extrapolation across species.

Credit other relevant material.

Note: studies of naturally occurring aversions to certain foods are also acceptable eg babies rejecting bitter foods (Desor 1973)

**[4]**