12 PSYCHOLOGY ZOO INVESTIGATION 2016

Name:_____

Teacher: Miss Cerny

Form:_____

Due date: Friday 8th April Week 10

Broad context: Cognition.

MARKING KEY

Task type: Investigation.

Key concepts: Classical conditioning.
Operant conditioning.
Observational learning.
Systematic desensitisation.
Positive and negative reinforcement, including rewards and punishment.

Task:

The task is to complete questions based on a lecture at Perth Zoo as well as collecting quantitative and qualitative research to analyse.

Plagiarism:
You must write in your own words not copy sentences word for word from another student or another source.
Plagiarising = instant zero on assignment and you will have to re-do it.

Assessment policy:
Give me a sick note/legitimate reason from parent BEFORE due date = new negotiated due date.
One day late = -20% taken off mark
Two days late = -40% taken off mark
Three days late = mark of zero given
After three days, students are required to attend a detention and are still required to submit the assignment.

If you are not at school the day this assignment is due, please email it to me by 4pm.

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Part one: lecture (26 marks)

1. Identify three (3) reasons why Perth Zoo would need to utilise learning theories with the animals. (3 marks)

To help with the healthcare/medical treatment of the animals (1), to help with the translocation of the animals (1) and to help exercise the animals. (1)

OR

To keep animals mentally active.

2. During the lecture, complete the grid below by ticking (✓) which learning theories apply to the following animals. (4 marks)

	Numbat	Southern hairy-nosed wombat	Sumatran orangutan	Southern white rhinoceros
Classical conditioning	✓	-	-	-
Operant conditioning	-	✓	✓	✓
Observational conditioning/learning	-	-	✓	-
Systematic desensitisation	-	-	-	✓

3. Consider the case study of the Numbat Predator Recognition Program.

a) List the conditioned behaviours that are being encouraged. (2 marks)

Running when there is danger instead of freezing.

b) State the stimuli that are involved. (1 mark)

Honeyeater alarm call, raptor silhouette and a loud noise.

c) State the type of conditioning that is being used and explain your answer. (2 marks)

Classical conditioning (1)

A conditioned stimulus (honeyeater alarm call and raptor silhouette) were associated with an unconditioned stimulus (loud noise) to create a conditioned response (running away). (1)

4. Consider the case study of the Southern hairy-nosed wombat.

a) Explain the objective (goal) of the training. (1 mark)

The goal of the training was to get the wombat safely on the scales to be weighed without injuring the zoo keepers and/or to allow zoo keepers to perform regular pouch checks on the female wombat.

b) Outline the role of the target stick. (1 mark)

The target stick gives the wombat something to focus on, it holds their attention in order to get the wombat to where it needs to go.

c) Outline the role of the clicker and explain why it is used as a reinforcer. (2 marks)

The clicker acts as a 'bridge' between touching the nose to the ball and receiving a treat (1). The clicker inclicates that the treat is coming and helps to keep his attention. (1)

* Needs to mention 'bridge'

d) Identify the type of conditioning and type of reinforcement that is being used. (2 marks)

Operant conditioning (1) positive reinforcement (1)

5. Watch the footage of the Sumatran Orangutan teeth brushing session and answer the following questions.

a) Identify what reinforces Dinar's behaviours throughout the session. (1 mark)

Receiving sugar free lemon cordial, celery, mango, boiled egg with shell on. * Need to mention at least 2

b) State when the reinforcements are applied. (1 mark)

At the completion of the entire training session..

or

Directly after all the tasks are completed.

6. Explain how observational learning benefited the orangutan breeding program at Perth Zoo. (2 marks)

A pregnant adopted orangutan observed the behaviour of (1) zoo keepers with their young children. This reduced the stress levels of the orangutan as she now (1) had learned some skills.

7. During the rhino desensitisation process, describe what must happen if at any stage the rhino appears distressed. (1 mark)

The process needs to be stopped and then the process needs to be started again from the beginning.

8. Describe in your own words how systematic desensitisation training is performed using the snake phobia as an example (include steps taken). (3 marks)

can be similar to this...

First have the patient read or hear the word 'snake', once they feel calm and relaxed talk to them about snakes. Once the patient feels calm and relaxed, move to the next stage which may be having the patient look at a cartoon of a snake. Slowly move through the following stages but do not continue unless the patient feels calm and relaxed instead of fear. Looking at a photo of a snake, standing outside the reptile house, going inside the reptile house, have the patient touch a slough, and lastly have the patient touch a small live snake.

(1) mark for explaining how patient should feel calm and relaxed before moving onto next stage.
(2) marks for appropriate steps

Part two: Hamadryas Baboon behaviour observation **(11 marks)**

9. Read the background information on hamadryas baboons (appendix one).

Readily observed behaviours can produce data that can be quantified and analysed statistically. Choose two individuals from the hamadryas baboon troop in the African Savannah and then complete the behaviour observation task to test the following hypothesis.

Hypothesis: It is hypothesised that hamadryas baboons will have a significant negative correlation between grooming behaviour and aggressive behaviour.

Name of observer: _____

Name of time keeper: _____

Name of scribe: _____

Date: _____ Time: _____

Will vary for students

Characteristics of individual A observed (distinguishing marks, size colour, scars):

_____

Age: Infant (I) Juvenile (J) Sub Adult (SA) Adult (A)

Sex: M / F / Unknown

Characteristics of individual B observed (distinguishing marks, size colour, scars):

_____

Age: Infant (I) Juvenile (J) Sub Adult (SA) Adult (A)

Sex: M / F / Unknown

Weather (circle one from each groups): sunny / overcast / raining

hot / warm / cold

still / windy

Behaviour key

Activity							
Resting	R	Chasing	Ch	Feeding	Fe	Running	Ru
Sitting	S	Unseen	U	Climbing	Cl		
Foraging	Fo	Walking	W	Being chased	BC		

Visual and vocal interactions			
Sexual behaviour	S	Mounting behaviour	MB (MM, FF)
Mild aggression	MA	Serious aggression	SA
Submission	Sub	Vocalising	V

Interactions					
Playing alone	PA	Being held	BH	Holding another	HA
Groom self	GS	Playing with others	PO	Other contact	OC
Grooming another	GA	Being groomed	BG		

A guide to aggressive behaviour signals in hamadryas baboons:

Aggression level	**Mild aggression**	**Serious aggression**	**Submission**
Signal	Staring, raising eyebrows	Open mouth with canines exposed, charging, hitting	Rump display, avoidance, being mounted

10) Use the behaviour key and record your chosen animal's behaviour every 15 seconds. (1 mark)

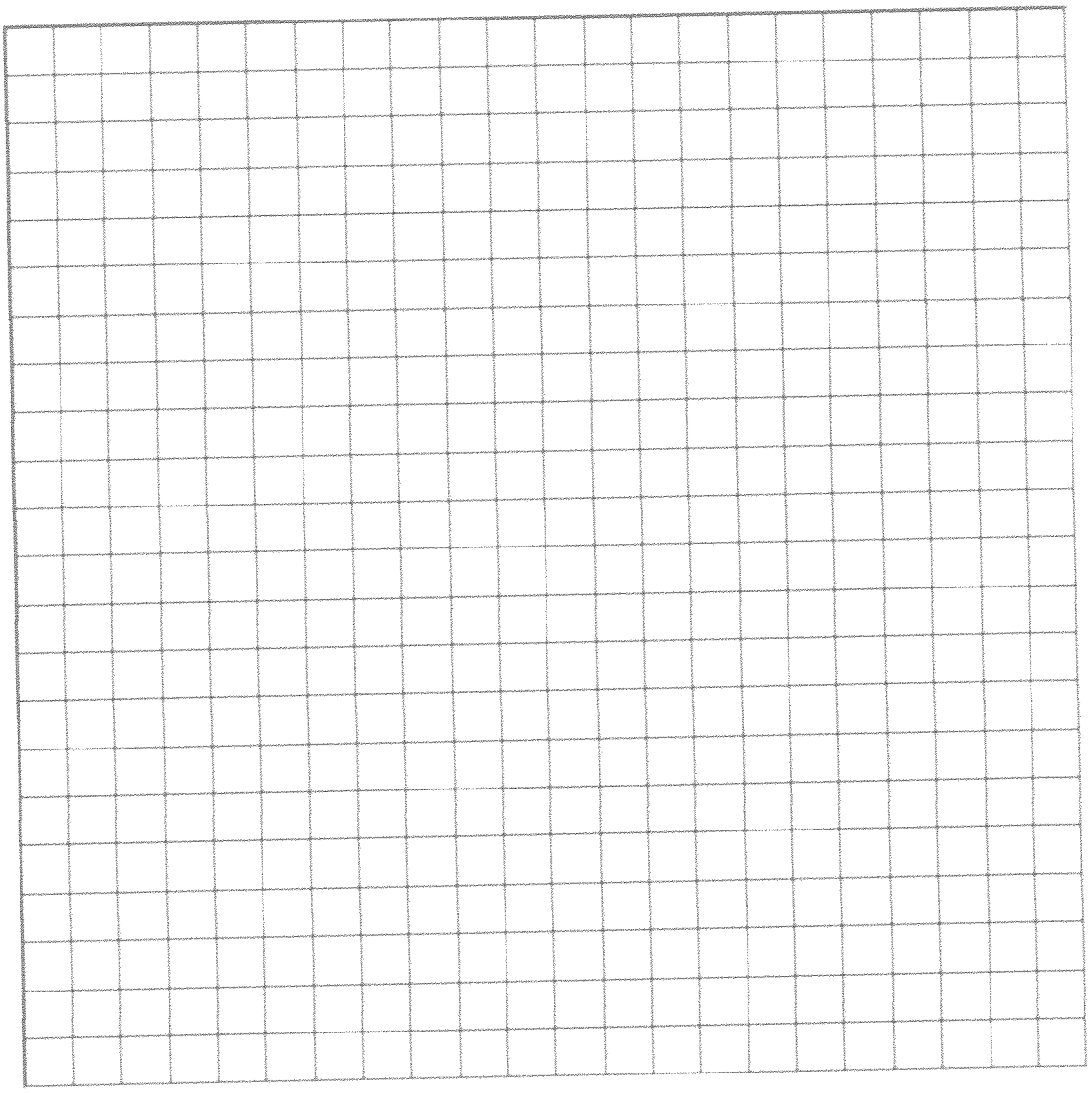
	A	B		A	B		A	B
1			18			35		
2			19			36		
3			20			37		
4			21			38		
5			22			39		
6			23			40		
7			24			41		
8			25			42		
9			26			43		
10			27			44		
11			28			45		
12			29			46		
13			30			47		
14			31			48		
15			32			49		
16			33			50		
17			34					

11a) Classify the behaviours you recorded into the categories below. (1 mark)

Aggressive behaviours	Grooming behaviours	Other behaviours
Sexual behaviour mild aggression Mounting behaviour Serious aggression vocalising Chasing	Groom self Grooming another Being groomed	

will vary for students

b) Present your findings in an appropriate graph (include both aggressive and grooming behaviours and both individuals in one graph). (5 marks)



marks given for:

- Appropriate title
- correctly labelled axes
- Appropriate scale
- Correct type of graph
- Correctly plotted data

etc.

c) Look at the results in your graph and state whether they proved or disproved the hypothesis that grooming negatively correlates with aggression. (1 mark)

d) Compare your graph with the graphs of other pairs of students in the class and comment on the general correlation between grooming and aggression that you observe. (1 mark)

- need to talk about correlation found

e) Discuss two factors that may have affected the types of behaviours that were shown during your observation period. (2 marks)

Factor one:

Factor two:

eg.
Weather (storm)?
Feeding time
Loud noises
Females or males in enclosure

Part three: meerkat behaviour observation **(7 marks)**

12a) Read the background information on meerkats (appendix two).

b) Spend five minutes observing one meerkat and record down all the observed activities below. (2 marks)

(1) qualitative descriptive observations

(1) Enough detailed information - at least 5 points

c) State the type of data that has been collected. (1 mark)

Qualitative data

d) Identify an example of the meerkats demonstrating altruistic behaviour and explain how this is achieved. (2 marks)

(1)
One or more meerkats act as a sentry and warn others if there is approaching danger. This meerkat is putting itself at risk in order to protect the other meerkats. (1)

e) State the type of learning that occurs when adult meerkats teach skills to their young and describe an example of a skill an adult meerkat would teach their young. (2 marks)

Observational learning (1)
- Removing the stinger from a scorpion (1)
- How to forage for food

Part four: human behaviour **(9 marks)**

Without being creepy or making it obvious (do not take photos or videos), spend a few minutes observing a child or primary school student who is misbehaving/being rude etc.

13a) Describe the undesired behaviour. (1 mark)

Imagine that you are the teacher/parent of this child:

b) Explain how you could use positive reinforcement to change the undesired behaviour. (2 marks)

What is the behaviour you want to reinforce? (1)
What is being added (stimulus)? (1)

c) Explain how you could use negative reinforcement to change the undesired behaviour. (2 marks)

What is the behaviour you want to reinforce? (1)
What is being removed (stimulus)? (1)

d) Explain how you could use positive punishment to change the undesired behaviour. (2 marks)

What is the behaviour you want to stop? (1)
What is being added (stimulus)? (1)

e) Explain how you could use negative punishment to change the undesired behaviour. (2 marks)

What is the behaviour you want to stop? (1)
What is being removed (stimulus)? (1)

APPENDIX ONE

Hamadryas Baboon (*Papio hamadryas*)

Group Structure
A group of baboons is called a troop.

The Hamadryas Baboon has an unusual 4-level social system.

Name of Group	Description of Group
Harem or Unimale Group	One male and up to ten females which the males lead and guard. A harem will typically include a younger "follower" male, but he will not attempt to mate with the females unless the older male is removed.
Clan	Two to four harems unite repeatedly to form a clan – often to forage together during the day. Males in the clan tend to be related.
Band	Two to four clans can unite to form a band which will sometimes travel together and fight other bands as a unit.
Troop	Several clans come together to form one troop before they go to sleep.

Social Behaviour
Males are the dominant members of all baboon social groups and a male may try to either attract or kidnap females to start his own harem when he reaches puberty. Harem-less males will also join a harem with an old resident male and basically serve as a "stud" while the older male remains as a patriarch and leads the harem. The dominant male or patriarch will also be the focus of the females' grooming attention. A hierarchy also exists amongst the females and the female with the highest status is usually positioned the closest to the dominant male during the day. The dominant male will also ensure that his females do not stray or lag behind his group by biting them on the neck.

Males will sometimes raid other harems for females, resulting in aggressive fights and should a 'kidnapped' female have an infant already, the new male may kill the offspring. Therefore, female counter-strategies are expected. These counter-strategies may include mating with multiple males or offering the new male many mating opportunities but without the risk of falling pregnant. This is known as a deceptive oestrus cycle where the rump area swells, but without being fertile. This behaviour is likely to prevent the new male from killing the offspring of the previous dominant male and at the same time the female will avoid the costs of being pregnant and lactating simultaneously.

Visual Communication
Social presenting: This is a submissive display whereby females and juvenile males present the hindquarters or rump to dominant males.

Staring: This is a threatening display where the eyes are fixed on the stimulus, the eyebrows are raised and the scalp is retracted, and the facial skin is also stretched by moving the ears back.

Staring with open mouth: Stare accompanied by an open mouth but the teeth are covered.

Head-bobbing: This is used as a threatening display where the head bobs up and down.

Tension yawning: This is another threatening display where the mouth is opened fully to reveal the canines.

Teeth-chattering: This is done by a male Hamadryas Baboon to a female when she is presenting herself and indicating that she is ready to accept a mate.

Vocal Communication
Two-phase bark: This is a deep, loud call which is repeated at 2 to 5 second intervals. This sounds like "wahoo" and is emitted by adult males. This call is emitted when a predator is threatening the troop. This call is also heard when there is aggression between males.

Rhythmic grunts: This call is low and soft and is given by all Hamadryas Baboons except infants. It is a friendly call and may be made when one individual is approaching another.

Shrill bark: This is a distress call and is emitted by all Hamadryas Baboons except adult males. Other members of the troop will flee upon hearing this call.

Lip-smacking: This is when the lips are protruded, then smacked together repeatedly. This is a reassuring display by the Hamadryas Baboon.

APPENDIX TWO

Slender-tailed Meerkat (*Suricata suricatta*)

Group Structure
A group of meerkats is called a mob, gang or clan.

Meerkats are small burrowing animals, living in large underground networks with multiple entrances which they leave only during the day. They are very social, living in colonies averaging 20-30 members.
Usually, the alpha pair reserves the right to mate and normally kills any young not its own, to ensure that its offspring has the best chance of survival. The dominant couple may also evict, or kick out the mothers of the offending offspring. New meerkat groups are often formed by evicted females pairing with roving males.
If the members of the alpha group are relatives (this tends to happen when the alpha female dies and is succeeded by a daughter), they do not mate with each other and reproduction is by group females stray-mating with roving males from other groups. In this situation, pregnant females may attempt to kill and eat any pups born to other females.

Social Behaviour

Meerkats demonstrate altruistic behaviour within their colonies. One or more meerkats act as a 'sentry' or lookout, while others are foraging or playing, to warn them of approaching dangers. When a predator is spotted, the sentry gives a warning bark, and other members of the gang will run and hide in one of the many bolt holes they have spread across their territory. The sentry is the first to reappear from the burrow and search for predators, constantly barking to keep the others underground. If there is no threat, the sentry stops signalling and the others feel safe to emerge.

Meerkats also baby-sit the young in the group. Females that have never produced offspring of their own often produce milk to feed the alpha pairs young, while the alpha female is away with the rest of the group. They also protect the young from threats, often endangering their own lives to protect them. When danger is signalled, the babysitter takes the young underground to safety and is prepared to defend them if the danger follows. If retreating underground is not possible, she collects all young together and lies on top of them.

The young of most species learn solely by observing adults however meerkats actively teach their young. For example, meerkat adults teach their pups how to eat a venomous scorpion. They will remove the stinger and help the pup learn how to handle the creature.

Despite this altruistic behaviour, meerkats sometimes kill young members of their group. Subordinate meerkats have been seen killing the offspring of more senior members in order to improve their own offspring's position.

Meerkats have also been known to engage in social activities, including what appear to be wrestling matches and foot races.

Communication
Animals in the same group regularly groom each other to strengthen social bonds. The alpha pair often scent-mark subordinates of the group to express their authority, and this is usually followed by the subordinates grooming the alphas and licking their faces. This behaviour is also usually practiced when group members are reunited after a short period apart. Most meerkats in a group are all siblings or offspring of the alpha pair.

Meerkats make at least 10 different vocalisations. These include a threatening growl and an alarm bark indicating the approach of snakes, birds of prey, or other predators. As they search for food they utter a 'vurruk-vurruk'.

/53 Mark as percentage: %

Teacher's comments: