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reviewer4@nptel.iitm.ac.in ▼

Courses » Learning about Learning: A Course on Neurobiology of Learning and Memory

Announcements

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Unit 4 - Reinforcement learning/Operant Conditioning

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Course outline

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- Introduction of Reinforcement Learning - I: Thorndike's view, Tolman's views, Skinner Box

- Introduction of Reinforcement Learning - II: Classification, Thorndike's view, Tolman's views, Skinner Box (cont)

- Introduction of Reinforcement Learning - III:

Week 3: Assignment

The due date for submitting this assignment has passed.

As per our records you have not submitted this assignment. **Due on 2019-02-27, 23:59 IST.**

This is an assignment based on Module 3 content, i.e. Reinforcement learning/Operant conditioning.

Please be aware of the marks assigned to each question. A few of the questions do not carry any marks and thus do not contribute to the final score of assignment assessment. These are to facilitate your further thinking on the concepts taught.

1) Which of the following is true for operant/instrumental conditioning? **1 point**

- Stimulus predicts the outcome
- Any response predicts the outcome
- Depending on the response, there is an outcome
- Neither stimulus nor response predict the outcome

No, the answer is incorrect.

Score: 0

Accepted Answers:

Depending on the response, there is an outcome

2) If an animal develops responses in a reflexive (as opposed to cognitive) manner, **1 point**

- their performance progression shows a slow improvement with occasional reversal
- their performance progression shows a rapid improvement with occasional reversal
- their performance progression shows a rapid improvement with no reversal
- it is not possible to decipher whether an animal learns in a reflexive or cognitive manner

No, the answer is incorrect.

Score: 0

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Linking complex behaviors to simple molecules

- Sign Tracking vs Goal Oriented; Learning Linking complex behaviors to simple molecules - II

Quiz : Week 3: Assignment

Answer Key - Week 3: Assignment

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Molecular basis of Memory and Learning

conditioning does not.

- Classical conditioning events occur in the order Stimulus-Reinforcement-Response whereas operant conditioning events occur as Stimulus-Response-Reinforcement.
- Classical conditioning results in a learned signal between two stimuli whereas operant conditioning results in a learned behavior.

No, the answer is incorrect.

Score: 0

Accepted Answers:

Classical conditioning events occur in the order Stimulus-Reinforcement-Response whereas operant conditioning events occur as Stimulus-Response-Reinforcement.

4) Kohler supported the cognitive manner of learning. He opposed Thorndike's reflexive manner based on the criticism that the animal could not see the causal effect relationship between the pedal and the cage door. **0 points**

- True.
- False.

No, the answer is incorrect.

Score: 0

Accepted Answers:

True.

5) Rather than waiting for a response to occur at random during instrumental conditioning, a procedure called _____ is often employed to speed things up. **0 points**

- Anticipation.
- Shaping.
- Suppression.
- Anthropomorphizing.

No, the answer is incorrect.

Score: 0

Accepted Answers:

Shaping.

6) Premack's principle states that: **1 point**

- Most probable behaviour will reinforce most probable behaviour.
- Most probable behaviour will reinforce least probable behaviour.
- Least probable behaviour will reinforce most probable behaviour.
- Behaviours do not influence each other.

No, the answer is incorrect.

Score: 0

Accepted Answers:

Most probable behaviour will reinforce least probable behaviour.

7) Which of the following is an example of the Premack Principle? **1 point**

- A dog salivates when a bell signaling food is rung.
- A child is told, 'You can have cake if you eat your vegetables'.
- A child is punished for not cleaning his room.
- A child is given dessert before vegetables.

No, the answer is incorrect.

Score: 0



Accepted Answers:

A child is told, 'You can have cake if you eat your vegetables'.

8) Materials like food for hungry animals or water for thirsty animals are called, **1 point**

- Secondary reinforcers
- Primary reinforcers
- Intermittent reinforcers
- Fixed reinforcers

No, the answer is incorrect.

Score: 0

Accepted Answers:

Primary reinforcers

9) When a thing acquires some characteristics of a reinforcer because of its consistent association with the primary reinforcement, we call it a/an: **1 point**

- Secondary reinforcer
- Primary reinforcer
- Fixed reinforcer
- Intermittent reinforcer

No, the answer is incorrect.

Score: 0

Accepted Answers:

Secondary reinforcer

10) Primary reinforcers are generalizable compared to secondary reinforcers. **1 point**

- True.
- False.

No, the answer is incorrect.

Score: 0

Accepted Answers:

False.

11) Secondary reinforcers are generalizable compared to primary reinforcers. **1 point**

- True,
- False.

No, the answer is incorrect.

Score: 0

Accepted Answers:

True,

12) In one experiment, the chimpanzees were taught to insert poker chips in a vending machine in order to obtain grapes. When this was done, they were made to pull, with all their strength, an iron bar attached to a similar machine to obtain poker chips. The chimpanzees learned it too, because they were allowed to cash those chips for grapes afterwards. Here the token chips had only a/an: **1 point**

- Primary reinforcing value
- Extra reinforcing value
- Special reinforcing value
- Secondary reinforcing value



No, the answer is incorrect.

Score: 0

Accepted Answers:

Secondary reinforcing value

13) According to response-deprivation theory, an activity becomes reinforcing when an individual is prevented from engaging in it at the baseline rate.

1 point

- True,
 False.



No, the answer is incorrect.

Score: 0

Accepted Answers:

True,

14) Reinforcement can be distinguished from punishment in that reinforcement _____ a target behavior, whereas punishment _____ a target behavior.

1 point

- removes; establishes
 increases; decreases
 discourages; encourages
 inhibits; enhances

No, the answer is incorrect.

Score: 0

Accepted Answers:

increases; decreases

15) Punishment training can be given by two ways, either by providing with an additional displeasing/or aversive stimulus- _____ Punishment, OR by taking away or with-holding a pre-existing pleasurable stimulus/privilege - _____ Punishment.

1 point

- Positive, Negative
 Negative, Positive
 Neutral, Negative
 Positive, Negative

No, the answer is incorrect.

Score: 0

Accepted Answers:

Positive, Negative

16) You are absent from school for an afternoon. When you return, you read the report left by your substitute. The report states that half of your class behaved wonderfully and completed their entire assignment. The other half of the class misbehaved and did not finish their assignment. For the students who behaved, you give them free time on the computer. For the students who misbehaved, you give them an extra, more difficult assignment to accomplish. In this situation, you provided

1 point

- Positive reinforcement and positive punishment.
 Positive reinforcement and negative punishment.
 Negative reinforcement and negative punishment.
 Negative reinforcement and positive punishment.

No, the answer is incorrect.

Score: 0

Accepted Answers:

Positive reinforcement and positive punishment.

17) For each example identify whether it is a case of Positive Reinforcement (PR), Negative Reinforcement (NR), Positive Punishment (PP) or Negative Punishment (NP): **1 point**

A child is given a cookie for saying 'please'.

- Positive Reinforcement (PR)
- Negative Reinforcement (NR)
- Positive Punishment (PP)
- Negative Punishment (NP)

No, the answer is incorrect.

Score: 0

Accepted Answers:

Positive Reinforcement (PR)

18) For each example identify whether it is a case of Positive Reinforcement (PR), Negative Reinforcement (NR), Positive Punishment (PP) or Negative Punishment (NP): **1 point**

A child's permitted TV time was cut by 20 minutes for not listening to her mother.

- Positive Reinforcement (PR)
- Negative Reinforcement (NR)
- Positive Punishment (PP)
- Negative Punishment (NP)

No, the answer is incorrect.

Score: 0

Accepted Answers:

Negative Punishment (NP)

19) For each example identify whether it is a case of Positive Reinforcement (PR), Negative Reinforcement (NR), Positive Punishment (PP) or Negative Punishment (NP): **0 points**

You point and laugh at a person with a silly haircut, and that person hits you.

- Positive Reinforcement (PR)
- Negative Reinforcement (NR)
- Positive Punishment (PP)
- Negative Punishment (NP)

No, the answer is incorrect.

Score: 0

Accepted Answers:

Positive Punishment (PP)

20) For each example identify whether it is a case of Positive Reinforcement (PR), Negative Reinforcement (NR), Positive Punishment (PP) or Negative Punishment (NP): **1 point**

To stop his parents from nagging constantly, the child does his chores.

- Positive Reinforcement (PR)
- Negative Reinforcement (NR)
- Positive Punishment (PP)
- Negative Punishment (NP)

No, the answer is incorrect.



Score: 0**Accepted Answers:***Negative Reinforcement (NR)*

21) For each example identify whether it is a case of Positive Reinforcement (PR), Negative Reinforcement (NR), Positive Punishment (PP) or Negative Punishment (NP): **1 point**

A student has 95% attendance and so his lowest scored test is removed from the final grade.

- Positive Reinforcement (PR)
- Negative Reinforcement (NR)
- Positive Punishment (PP)
- Negative Punishment (NP)

No, the answer is incorrect.**Score: 0****Accepted Answers:***Negative Reinforcement (NR)*

22) For each example identify whether it is a case of Positive Reinforcement (PR), Negative Reinforcement (NR), Positive Punishment (PP) or Negative Punishment (NP): **1 point**

Traffic Police fines you for parking your vehicle in the No Parking spot.

- Positive Reinforcement (PR)
- Negative Reinforcement (NR)
- Positive Punishment (PP)
- Negative Punishment (NP)

No, the answer is incorrect.**Score: 0****Accepted Answers:***Positive Punishment (PP)*

23) For each example identify whether it is a case of Positive Reinforcement (PR), Negative Reinforcement (NR), Positive Punishment (PP) or Negative Punishment (NP): **1 point**

You are sitting in an uncomfortable chair and having back pain and you try to change your posture to be comfortable.

- Positive Reinforcement (PR)
- Negative Reinforcement (NR)
- Positive Punishment (PP)
- Negative Punishment (NP)

No, the answer is incorrect.**Score: 0****Accepted Answers:***Negative Reinforcement (NR)*

24) You are a manager of a small office, where productivity is dropping. You cannot monitor your employees all the time, even though it increases work output, because that is a time consuming and inefficient practice for you. What schedule would you follow to check in on your employees? **1 point**

- Fixed interval
- Variable ratio
- Variable interval



Fixed ratio

No, the answer is incorrect.

Score: 0

Accepted Answers:

Variable interval

25) After a behavior is established, the best way to maintain it for the long run is to reinforce it **0 points**

- _____.
- Once.
 - Constantly.
 - Frequently.
 - Intermittently.

No, the answer is incorrect.

Score: 0

Accepted Answers:

Intermittently.

26) For each example below identify the schedule of reinforcement as: Fixed ratio (FR), variable ratio (VR), fixed interval (FI), or variable interval (VI). **1 point**

You get paid once every two weeks.

- Fixed ratio (FR)
- Variable ratio (VR)
- Fixed interval (FI)
- Variable interval (VI)

No, the answer is incorrect.

Score: 0

Accepted Answers:

Fixed interval (FI)

27) For each example below identify the schedule of reinforcement as: Fixed ratio (FR), variable ratio (VR), fixed interval (FI), or variable interval (VI). **1 point**

A carpenter is paid Rs. 1000 for every 10 tables he fixes.

- Fixed ratio (FR)
- Variable ratio (VR)
- Fixed interval (FI)
- Variable interval (VI)

No, the answer is incorrect.

Score: 0

Accepted Answers:

Fixed ratio (FR)

28) For each example below identify the schedule of reinforcement as: Fixed ratio (FR), variable ratio (VR), fixed interval (FI), or variable interval (VI). **0 points**

Students are released from the class-room for a small break after every 3 classes/periods

- Fixed ratio (FR)
- Variable ratio (VR)
- Fixed interval (FI)



Variable interval (VI)

No, the answer is incorrect.

Score: 0

Accepted Answers:

Fixed interval (FI)

29 For each example below identify the schedule of reinforcement as: Fixed ratio (FR), variable ratio (VR), fixed interval (FI), or variable interval (VI). **0 points**



A fly fisherman casts and reels back his line several times, on average every 5 times, before catching fish.



- Fixed ratio (FR)
 Variable ratio (VR)
 Fixed interval (FI)
 Variable interval (VI)



No, the answer is incorrect.

Score: 0

Accepted Answers:

Variable ratio (VR)

30 For each example below identify the schedule of reinforcement as: Fixed ratio (FR), variable ratio (VR), fixed interval (FI), or variable interval (VI). **0 points**

You get a rupee after every 6 empty bottles you return to the shop

- Fixed ratio (FR)
 Variable ratio (VR)
 Fixed interval (FI)
 Variable interval (VI)

No, the answer is incorrect.

Score: 0

Accepted Answers:

Fixed ratio (FR)

31 For each example below identify the schedule of reinforcement as: Fixed ratio (FR), variable ratio (VR), fixed interval (FI), or variable interval (VI). **1 point**

A car salesman gets a bonus after every 5 sales.

- Fixed ratio (FR)
 Variable ratio (VR)
 Fixed interval (FI)
 Variable interval (VI)

No, the answer is incorrect.

Score: 0

Accepted Answers:

Fixed ratio (FR)

32 For each example below identify the schedule of reinforcement as: Fixed ratio (FR), variable ratio (VR), fixed interval (FI), or variable interval (VI). **1 point**

Shoaib Akhtar gets a wicket on an average of every 10 balls (sometimes a little more often, sometimes less).

- Fixed ratio (FR)
- Variable ratio (VR)
- Fixed interval (FI)
- Variable interval (VI)

No, the answer is incorrect.

Score: 0

Accepted Answers:

Variable ratio (VR)

33) For each example below identify the schedule of reinforcement as: Fixed ratio (FR), variable ratio (VR), fixed interval (FI), or variable interval (VI).

You are waiting for an important email, and keep checking your inbox every now and then.

- Fixed ratio (FR)
- Variable ratio (VR)
- Fixed interval (FI)
- Variable interval (VI)

No, the answer is incorrect.

Score: 0

Accepted Answers:

Variable interval (VI)

34) Under conditions of variable ratio schedule, the only sensible way to obtain more reinforcements is through emitting:

- 50% responses
- No responses, it is immaterial.
- Less number of responses.
- Greater number of responses.

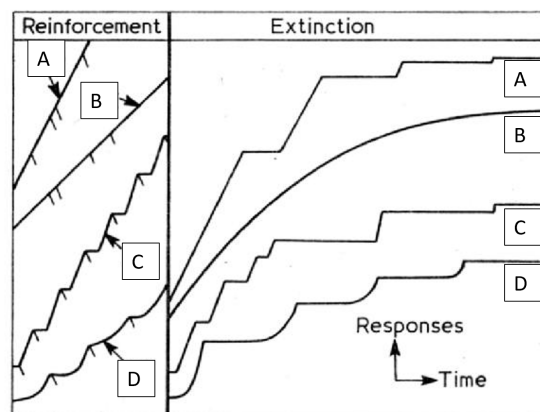
No, the answer is incorrect.

Score: 0

Accepted Answers:

Greater number of responses.

35) The following graph represents the cumulative responses you could achieve with different schedules of reinforcement, Fixed Ratio, Variable ratio, Fixed Interval, Variable Interval. It also represents pattern of extinction you would observe, once the reinforcement ceases. Based on the slope and the form, assign these schedules to graph A, B, C and D. 1 point



1 pt

0 points



A = Fixed Ratio, B = Variable ratio, C = Fixed Interval, D = Variable Interval



A = Fixed Ratio, B = Fixed Interval, C = Variable Ratio, D = Variable Interval



A = Variable Ratio, B = Variable Interval, C = Fixed Ratio, D = Fixed Interval



A = Fixed Interval, B = Variable Interval, C = Fixed Ratio, D = Variable ratio

No, the answer is incorrect.

Score: 0

Accepted Answers:

A = Variable Ratio, B = Variable Interval, C = Fixed Ratio, D = Fixed Interval

36) In an experiment to train rats in operant conditioning, Student A followed different reinforcement schedules as mentioned below.

Which responses, denoted by Ri, were reinforced when following a fixed interval of 60 seconds?



R2, R6 and R8



R1, R2, R3 and R4



R5 and R7



R5 and R6



Insufficient information

No, the answer is incorrect.

Score: 0

Accepted Answers:

R5 and R7

37) In an experiment to train rats in operant conditioning, Student A followed different reinforcement schedules as mentioned below.

Which responses, denoted by Ri, were reinforced when following a fixed ratio of 1/4 ?



R1, R3, R5 and R7



R1, R2, R3 and R4



R1, R4, and R8



R1, R5 and R9



Insufficient information

No, the answer is incorrect.

Score: 0

Accepted Answers:

R1, R5 and R9

38) An experimenter showed that rats would press a lever in order to sound a tone that had

1 point



1 point



previously been paired with food. What is this a demonstration of?

- Primary reinforcement
- Instrumental conditioning
- Conditioned reinforcement
- Second order conditioning

No, the answer is incorrect.

Score: 0

Accepted Answers:

Second order conditioning

39) Higher-order conditioning demonstrates which of the following?

- After training, a CS can function as a US.
- After training, a US can function as a CS.
- CSs cannot function as USs.
- USs cannot function as CSs.

No, the answer is incorrect.

Score: 0

Accepted Answers:

After training, a CS can function as a US.

40) When advertisers use attractive models or popular cheerful songs to advertise their products they are using second/or higher order conditioning to sell their products.

1 point

- True
- False

No, the answer is incorrect.

Score: 0

Accepted Answers:

True

41) We have learnt that pressing the lift button (response) makes the lift arrive at our floor from the floor it is currently at. However, when we are impatient or in a hurry we end up pressing the lift button several times, even though we know logically and through experience that it will not make the lift arrive any faster. This is a reflexive rather than a cognitively driven response.

1 point

- True
- False

No, the answer is incorrect.

Score: 0

Accepted Answers:

True

42) You have grouped a sub-population of mice available to you in your lab, based on their high locomotor activity in an open field test and low impulse control in DRL (Differential Reinforcement of Low rates of responding) task (Group A). The other population (Group B) is the high impulse control, low locomotor activity group. After training them in an operant conditioning task, where a lever press is reinforced by food (when a tone is played), you stop providing them food. Which group stops performing lever presses first?

1 point

- Both Groups A and B
- Group A
- Group B



You cannot predict the outcome depending on open field tests and DRL tasks.

No, the answer is incorrect.

Score: 0

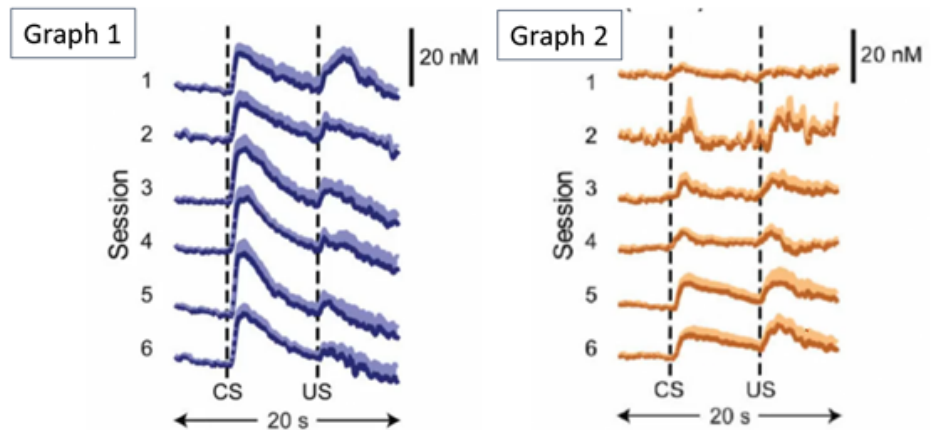
Accepted Answers:

Group B

43 Studies have shown that the levels of hormone ghrelin (produced by our stomach when we **1 point** are hungry) rises before a meal, or when we are fasting. This has an effect on our decision-making process and increases impulsive behaviour. When you inject this hormone in the highly cognitive, high impulse control, low locomotor activity, group of mice, they perform in a more sign directed manner than in a goal oriented manner. How would that reflect in the dopamine levels in the Ventral Tegmental (VTA) region of the brain, during the presentation of the CS and the US?



Levels of measurable dopamine in the VTA in response to a US and a



- Graph 2 represents the dopamine levels of the animals before ghrelin injection, and Graph 1 represents what happens after
- Graph 1 represents the dopamine levels of the animals before ghrelin injection, and Graph 2 represents what happens after
- Graph 2 represents the dopamine levels both before and after ghrelin injection, as the hormone has no bearing on dopamine production
- Graph 1 represents the dopamine levels both before and after ghrelin injection, as the hormone has no bearing on dopamine production

No, the answer is incorrect.

Score: 0

Accepted Answers:

Graph 2 represents the dopamine levels of the animals before ghrelin injection, and Graph 1 represents what happens after

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