

Solutions to practice exam questions: How people learn

Learning

Multiple-choice solution

- 1 **D**
Learning is a comparatively lasting change in behaviour because of past experience.

Behaviours not dependent on learning

Multiple-choice solutions

- 2 **A**
Reflexes are innate.
- 3 **C**
Instinctive behaviour is not learned.
- 4 **B**
Behaviour that would be affected by maturation is unlearned.
- 5 **C**
A complex, unlearned sequence of behaviour that is found in all members of the same species is known as a fixed action pattern.
- 6 **A**
A reflexive behaviour pattern.
- 7 **D**
Fixed action patterns are less common in mammals than in fish or birds. The elimination of the other obviously incorrect alternatives would lead to the correct answer.

Short-answer solution

- 8
- These behaviours would not be considered as learned because they have a physiological basis, the onset of which has been genetically predetermined. In other words, certain behaviours are not possible until a specific developmental stage has been reached.
 - Behaviours that are affected by maturation are not directly due to or necessarily improved by experience. Exposure to training prior to maturational readiness will not speed up the acquisition or development of these behaviours.

1 + 1 = 2 marks

Neural mechanisms of learning

Short-answer solutions

- 9 These are networks between the brain's neurons, which are operative in learning and memory.
- 10 The brain stores information in networks of modified connections between neurons (synapses), the arrangement of which constitutes the information, and to retrieve this information by activating these networks.
- 11 Developmental plasticity is the brain's natural ability, especially during infancy, to form new connections in order to process sensory information from environmental stimulation, whereas adaptive plasticity is the brain's ability to form new connections in order to recover or compensate for lost function and/or to maximise remaining functions in the event of brain injury, such as traumatic head injury or stroke.
- 12 'Critical periods' are optimum times for synapse formation and for the development of certain pathways in response to appropriate stimulation. During these periods, there is a certain degree of neuronal pruning due to competition by neurons and synapses for neural growth factors. Processes that are not used, or are inhibited, during this critical period will fail to develop normally later on in life.
- 13 For a long time, it was believed that, as we aged, the connections in the brain became fixed. However, there is now widespread consensus among neuroscientists that the brain retains its ability to change itself physically and functionally as a result of learning at any age. Research evidence suggests that, in response to the right stimuli, neural connections can be rewired and refined, the brain's grey matter can thicken, and neurogenesis, the formation of new nerve cells, occurs in the adult, mammalian brain well into old age. The long-lasting presence of adult plasticity is activity dependent, with mental stimulation improving brain function and protecting against cognitive decline.

- 14 The brain compensates for damage by reorganising and forming new connections between intact neurons so that brain activity associated with a given function can move to a different location.

Classical (Pavlovian) conditioning

Multiple-choice solutions

- 15 **B**
Ivan Pavlov.
- 16 **A**
Classical conditioning may also be referred to as associative conditioning.
- 17 **D**
An unconditioned response.
- 18 **B**
As it does not elicit a relevant response, the bell would be considered a neutral stimulus at that point.
- 19 **B**
When a response occurs in the presence of one stimulus but does not occur in the presence of other stimuli, discrimination is said to have taken place.
- 20 **C**
A is observational learning, **B** would be a reflex, and **D** pertains to operant conditioning.
- 21 **A**
Positive or negative reinforcers must be present in operant conditioning, but not necessarily in classical conditioning.
- 22 **D**
Stimulus generalisation.
- 23 **D**
For classical conditioning to occur, an association needs to be formed between different stimuli.
- 24 **C**
Sarah's crying at the sight of the syringe, which she has associated with pain, would constitute a classically conditioned response.
- 25 **C**
The noise from the bursting balloons was an unconditioned stimulus.
- 26 **B**
Spontaneous recovery.

Short-answer solutions

- 27 An unconditioned stimulus (UCS) is a trigger that will elicit a specific, naturally occurring, reflexive response.
- 28 A conditioned response (CR) is the learned reaction made by an organism to a previously neutral stimulus after classical conditioning has taken place.
- 29 **i** The bell (or metronome).
ii The food (meat powder).
iii Salivation.
iv The bell (or metronome).
v Salivation.

Ethical issues in conditioning behaviour

Multiple-choice solutions

- 30 **C**
'Little Albert' learned to fear white, furry objects after a loud noise was paired with the white, furry lab rat.
- 31 **B**
The rat was the conditioned stimulus as it initially did not produce the fear reaction, but did so after the process of conditioning.
- 32 **B**
Watson did not violate the principle of confidentiality. Most sources see the names 'Little Albert' or 'Albert B' as pseudonyms used by Watson to protect his real identity. Even if the child's name really was Albert, his fate remains a mystery, which means that his true identity was sufficiently protected.
- 33 In order to extinguish the conditioned fear of white, furry objects, 'Little Albert' would need to be repeatedly (over a number of trials) exposed to various examples of white, furry things without the presence of the loud noise (or any other fearful stimulus).

One-trial learning

Multiple-choice solutions

- 34 **D**
Both **A** and **C**.
- 35 **D**
All of the above.

Short-answer solutions

- 36** Any of the following:
- fasting before chemotherapy can reduce the chances of developing taste aversions
 - alternately, patients should eat a novel or distinctive tasting food with the meal preceding chemotherapy so that the conditioned aversion would only apply to the distinctive food and not to nutritionally important foods
 - cognitive distractions, such as playing video games, can also disrupt the associations at the origin of the conditioning of the nausea.

Allocate 1 mark for any of the above answers

- 37**
- As taste aversion is such a powerful deterrent, it has been used within aversive therapy to condition humans to diminish undesirable learned behaviours such as smoking, alcoholism and overeating.
 - For example, a smoker may be given an unpleasant tasting drug or additive that reacts with the nicotine so that when they smoke they will become nauseous and may vomit.
 - The association between the cigarette and the nausea/vomiting quickly causes the patient to avoid smoking.

1 + 1 + 1 = 3 marks

Trial-and-error learning

Multiple-choice solutions

- 38 D**
Edward Thorndike.
- 39 C**
Thorndike's 'Law of Effect' states that if the response in the presence of a stimulus is followed by a satisfying event, the association between the stimulus and the response is strengthened.

Short-answer solutions

- 40**
- After much trial-and-error behaviour, gradually the cats learned what they had to do to escape, as shown by the fact that the amount of time they took to escape became shorter over successive trials.

- Thorndike concluded that the cats had learned to associate the appropriate response (pressing the lever) with the desired result (opening the door) in order to achieve a satisfying state of affairs (escaping from the box).

1 + 1 = 2 marks

- 41**
- In discrete trials, the researcher can only set up one trial at a time and the apparatus needs to be reset after each experiment, especially in Thorndike's case as the test was finished once the animal had escaped.
 - This method is therefore slow and results in a limited amount of data being collected.
 - This procedure is also labour-intensive, as it requires constant supervision of the apparatus and the subject.

1 + 1 + 1 = 3 marks

Operant conditioning

Multiple-choice solutions

- 42 B**
While Thorndike's work was the precursor, establishing the concepts behind instrumental conditioning, Skinner is considered to be the major contributor to knowledge and theory pertaining to operant conditioning.
- 43 C**
Operant conditioning may also be referred to as instrumental conditioning.
- 44 D**
Positive reinforcement; negative reinforcement.
- 45 C**
'Skinner box'.
- 46 B**
Operant conditioning.
- 47 C**
Both positive and negative reinforcers should lead to an increase in response rates.
- 48 A**
The process of punishment requires the application of an undesirable consequence.

49 D

In Skinner's theory of operant conditioning, the term 'operant' refers to an organism's behaviour that acts on its environment and leads to some sort of outcome.

50 B

Addiction to gambling would be due to the effects of partial reinforcement.

51 D

Punishment.

52 B

Fixed-ratio; variable-ratio.

53 D

Negative reinforcement.

54 C

Going to the dentist and having a toothache relieved.

Short-answer solutions

- 55**
- A 'Skinner box' is typically a soundproof chamber that contains one or more levers that an animal may press, one or more stimulus lights, and one or more places in which positive reinforcers like food may be delivered.
 - The animal's responses (pressing on the levers) can be detected and recorded and a contingency between these presses, the state of the stimulus lights and the delivery of reinforcement (or punishment) can be set up, all automatically.

1 + 1 = 2 marks

- 56**
- Positive reinforcer.
 - A positive reinforcer serves to increase a behaviour by providing a pleasant outcome (the attention when his parents fuss over him) following a behaviour (his tantrums).

1 + 1 = 2 marks

Solutions to practice exam questions: Mental health

Normality

Multiple-choice solutions

- 1 **A**
Unpredictable and irrational.
- 2 **B**
Unusual, dysfunctional or inappropriate for the time and place.
- 3 **D**
Interference with normal functioning.
- 4 **B**
Historical approach.
- 5 **B**
Medical.
- 6 **C**
Medical approach.
- 7 **C**
According to the medical model, psychological disorders are sicknesses that need to be diagnosed and cured.
- 8 **C**
Situational.
- 9 **C**
Situational approach.
- 10 **C**
Sociocultural normality is difficult to determine because it depends on the values of the group.
- 11 **B**
An example of sociocultural normality would be men wearing kilts in Scotland.
- 12 **D**
Statistical approach.
- 13 **A**
Statistical rarity.

Short-answer solutions

- 14 'Normality' means 'what is acceptable', 'what can be expected to happen' or 'the average' (what does not require treatment or assistance).

- 15 The functional approach defines normality and abnormality based on if a person's thoughts, feelings, and behaviour enable them to function effectively in their everyday life. If a person's thoughts, feelings, and behaviour interfere with daily functioning and the person cannot care for themselves, they are considered abnormal.
- 16
 - Medical abnormality is when disorders are diagnosed according to a manual (e.g. DSM-IV) as specific medical conditions, e.g. schizophrenia.
 - Functional abnormality refers to the inability of an individual to satisfactorily carry out their daily activities, and is often accompanied by feelings of hopelessness/distress.
- 17 Disorders are diagnosed according to a manual (e.g. DSM-IV) as specific medical conditions, e.g. schizophrenia.
- 18 Disadvantages of using the medical approach to identify abnormal behaviour include:
 - persons diagnosed with a disorder might be labelled and stigmatised (perceived negatively by others)
 - persons diagnosed might begin to behave in accordance with perceived symptoms of the disorder more so than they would have done otherwise (self-fulfilling prophecy).

Allocate 1 mark for either of the above answers

Mental health and classification

Multiple-choice solutions

- 19 **B**
Gender bias in the diagnosis of mental disorders.
- 20 **D**
Classification.
- 21 **D**
Inappropriate behaviours can be distinguished from functional ones.
- 22 **C**
Brain damage.

- 23 D**
DSM-IV and ICD-10.
- 24 D**
All of the above.
- 25 C**
Self-fulfilling prophecies.
- 26 C**
Biassing power of diagnostic labels.
- 27 B**
Labels can influence how we interpret the behaviour of others.
- 28 C**
Explain the causes of the various psychological disorders.
- 29 B**
Increase the reliability of diagnostic categories.

Short-answer solutions

- 30** Mental illnesses are psychological dysfunctions experienced by individuals which are serious and persist for a relatively long period of time.
- 31** The difference between 'normal' and 'abnormal' is largely arbitrary. This is due in part to the fact that many symptoms associated with mental disorders differ from common psychological experiences not in kind but only in degree.
- 32** The American Psychiatric Association has established certain criteria to help clinicians determine when that arbitrary line between the normal and the abnormal has been crossed. These criteria are:
- that the syndrome (that is, the person's pattern of symptoms) must involve distress and/or impaired functioning serious enough to warrant professional treatment
 - that the source of the distress lies within the person, not the environment (such as prejudice, poverty, or other social forces that may lead a person to behave contrary to social norms)
 - that the syndrome does not represent a deliberate, voluntary decision to behave in a certain way.
- Even with these guidelines, there is still considerable room for interpretation. We

are probably all distressed by our feelings of depression, and we may find it harder than usual to function in our work or relationships, so how do we know when the distress or impaired functioning is serious enough to justify the label of mental disorder?

- 33** The patient's primary diagnosis is usually recorded on axis I. Long-standing personality problems or mental retardation are recorded on axis II. Any medical conditions that might affect the patient's psychologically are recorded on axis III. Any significant psychosocial or environmental problems experienced by the patient are recorded on axis IV. An assessment of the patient's level of functioning is recorded on axis V.

Therapeutic approaches

Multiple-choice solutions

- 34 B**
People who receive psychotherapy improve most.
- 35 B**
Cognitive therapy.
- 36 C**
Cognitive behaviour.
- 37 B**
Arranged in a hierarchy from least to most feared items.
- 38 D**
It allows people with complex problems to have the therapist's full attention.
- 39 B**
ECT is used regularly to treat schizophrenia.
- 40 D**
Depression.

Short-answer solutions

- 41** Exposure treatments are used by behaviour therapists to treat phobias.
- 42** Systematic desensitisation is a type of exposure treatment in which a person relaxes while imagining increasingly frightening forms of the feared stimulus. Through the repeated exposure, even though the exposure is only imagined, the fear is extinguished, or unlearned.

Stress

Multiple-choice solution

43 B

Resources are mobilised to better cope with stress.

Short-answer solutions

- 44 The general adaptation syndrome occurs when an organism is exposed to a stressor. It has three stages. In the alarm stage, an organism recognises a threatening situation. The sympathetic nervous system is activated, giving rise to the fight-or-flight response. Digestive processes slow down, blood pressure and heart rate increase, adrenal hormones are released, and blood is drawn away from the skin to the skeletal muscles. In the resistance stage, which occurs when stress continues, physiological arousal stabilises at a point that is higher than normal. If stress is prolonged, the organism reaches the exhaustion stage. The body's resources get used up, and physiological arousal decreases. In this stage, organisms are more susceptible to disease.
- 45 According to Lazarus' transactional model, stress is a function of the discrepancy between perceived demands of the situation and the person's resources for meeting those demands. This means that the person's psychological appraisal of the situation and resources are critical for determining whether the person experiences stress and shows a strain response.
- 46 Primary appraisal involves assessing whether the potential threat is (a) irrelevant, (b) benign-positive, or (c) stressful. If it is stressful, the person judges (i) harm-loss, or how much damage as already occurred; (ii) threat, or expectation of future harm; and (iii) challenge or opportunity for growth. Secondary appraisal is an evaluation of the resources available for meeting the potential threat. Finally, the person engages in reappraising the threat in light of the resources, and reappraising the resources in light of the reappraised threat. If the demands placed by the threat greatly exceed the resources available, a large discrepancy will be perceived, and the person will experience the situation as stressful.

- 47 People who are optimistic are more likely to find social support, appraise events in less threatening ways, take good care of themselves when sick, and use active coping strategies that focus on problem solving.

Phobias

Multiple-choice solutions

- 48 A
Anxiety disorders.
- 49 C
Phobia.
- 50 B
Stimulus that reflexively causes anxiety and a stimulus that does not do so.
- 51 D
Classical conditioning of a fear response; operant conditioning of avoidance (escape) behaviour.

Depression

Multiple-choice solutions

- 52 D
Noradrenaline.
- 53 C
Major depression.
- 54 D
Stable and global.
- 55 B
Hopelessness.

Short-answer solutions

- 56 Mood disorder.
- 57 Depression.
- 58 Noradrenaline and serotonin.
- 59 According to cognitive therapists, depressed people tend to blame themselves for negative events and underestimate situational causes, pay more attention to negative events than to positive ones, be pessimistic, and make inappropriately global generalisations from negative events.

Schizophrenia

Multiple-choice solutions

- 60 C**
Psychosis but not neurosis.
- 61 D**
All of the above.
- 62 A**
Delusion.
- 63 C**
Paranoid.
- 64 A**
Catatonic schizophrenia.
- 65 B**
Dopamine.
- 66 C**
Auditory hallucinations.
- 67 C**
Experienced as coming from inside the person's own head.
- 68 D**
Sociocultural.
- 69 B**
Decreasing dopamine activity in the brain.

Short-answer solutions

- 70** Schizophrenia.
- 71** Paranoid schizophrenia.
- 72** These drugs help relieve hallucinations, delusions, and other symptoms of schizophrenia.

Solutions to practice exam questions: Research methods

- 1 C**
An experiment would be used to establish a causal relationship between variables.
- 2** Because researchers are able to systematically manipulate the independent variable(s) in formal experiments, they are able to test causal links between the variables involved. With a high degree of control, the experimenters can eliminate various extraneous variables to further strengthen the cause-and-effect relationship under study.
- 3 C**
An operational hypothesis is a testable statement phrasing the prediction regarding the outcome of a research study in practical terms.
- 4 C**
In an experiment exploring the effect of practice on performance, practice is the independent variable.
- 5 D**
The independent variable in this case would be music.
- 6 D**
The statement is an example of an operational hypothesis as it not only states a predicted outcome for the experiment but how it will be shown in practice. **C** is incorrect as research hypotheses use more general terms or concepts (in this case: 'That observational learning would improve performance'). **A** is not appropriate as a theory incorporates a general body of knowledge providing background for, but not necessarily making, a prediction. **B** is wrong because a null hypothesis would state that there would be no difference between the two groups.
- 7**
- The independent variable (IV) is the factor that is deliberately altered or systematically manipulated by the experimenter in order to ascertain whether it produces a difference in the behaviour or performance of the participants.
 - The dependent variable (DV) is the participants' behaviour or performance that is measured to demonstrate the effects of the IV.
- 1 + 1 = 2 marks**
- 8**
- A research hypothesis is a testable statement predicting the outcome of a research study, whereas an operational hypothesis goes further to express this prediction in practical terms.
 - An operational hypothesis describes how the researcher will determine the presence and levels of the variables under investigation for the population under study in order to put their research hypothesis into operation.
- 1 + 1 = 2 marks**
- 9**
- The operational definition would have to enable the concept of learning to be quantifiable and testable.
 - Depending on the experimental design, this could be the number of correct responses (or alternately the number of errors) or the time taken to perform the specified task.
- 1 + 1 = 2 marks**
- 10 D**
A major requirement for a sample to be used in psychological research is that it be representative of the population from which it is drawn.
- 11 C**
A stratified sample ensures that the subset derived from the population represents relevant groups and/or participant characteristics in proportion to their numbers within the population.
- 12 D**
The main role of the control group in an experiment is to provide a basis for comparison against which the behaviour of the experimental group can be assessed.
- 13 C**
The main purpose for using random sampling in an experiment is to ensure that the subjects chosen form a representative subset of the population.
- 14 A**
A stratified sample is best described as a sample of people who are selected to proportionally match for certain characteristics within the population.

15 D
The group exposed to the independent variable, in this case the alcohol condition, is the experimental group.

16 C
Research participants are said to be randomly assigned when they each have an equal chance of being assigned to either the experimental or control group.

17 C
The group exposed to the independent variable, in this case the interference condition, is the experimental group.

18 Random selection of subjects is used to try to control for subject variables in order to make the sample representative of the population under study.

- 19**
- The control group.
 - Its purpose is to provide a basis for comparison against the experimental group (or to compare the effect of the IV with the experimental group).

1 + 1 = 2 marks

20 B
In a repeated-measures design, all of the research participants are exposed to both experimental conditions.

21 B
This type of research is known as a single-blind experiment.

22 C
The participants believe that they are experiencing an experimental condition, whereas in fact this condition has a null effect in terms of the independent variable (caffeine level). This condition has been introduced to counter any effect that the participants' expectations may have on their sleep patterns. As it is only the participants who are unaware that this is a fake condition, it is a single-blind, not a double-blind, procedure.

23 C
The researcher in this case has employed an independent-groups design.

24 A
The procedure Mr Black is using is described as a single-blind.

25 D
The researchers in this case have employed an independent-groups design as each group of subjects was knowingly exposed to different experimental conditions.

26 D
The researchers in this case have employed an independent-groups design as each group of participants was knowingly exposed to different experimental conditions.

27 C
The researchers in this case have employed a matched-participants design as the experimenters have tried to balance each group of subjects by pairing them according to relevant characteristics.

28 A
The study has used a single-blind procedure, as only the participants were unaware as to which condition they were under. Group 2 were under a placebo condition as they were receiving a fake treatment, i.e. a condition that mimicked the herbal treatment, but which would have not had the properties under investigation in this study.

29 In an experimental study, an experimenter effect is said to have occurred if the experimenter's personal characteristics, or expectations, or treatment of the data influence the results of the experiment.

30 A
Within their research, psychologists use inferential statistics to draw conclusions from their research findings.

31 A
A significance level of $p < 0.01$ would be considered to be the most statistically significant within the given choices. This level would indicate that the probability is less than 1 in 100 that the difference between scores was due to chance factors.

32 B
Inferential statistics are used to generalise the results of a study to a population.

33 C
The concept of statistical significance is based on the probability that the results obtained in an experiment are not due to chance factors. The lower the probability, the more significant the results.

- 34** • Correlations are used to identify and describe how two variables are related to one another in terms of direction (positive or negative) and strength.
- These measures do not give any information about cause-and-effect relationships between the variables under study, but merely point out that they are related in some way. It may, in fact, be a third factor that causes the changes to the variables being studied.

1 + 1 = 2 marks

- 35** Factors to be considered would include:
- random (and stratified) subject selection to ensure a sample that is representative of the population
 - random allocation to the experimental and control groups (there may also be the need for a baseline measure)
 - adequate operationalisation and control of the IV and DV
 - extraneous variables are controlled to eliminate any confounding variables
 - relevant and appropriate statistical methods are used to analyse the data, which would calculate the probability of whether they are due to chance (statistical significance).

Allocate 1 mark for any of the above. Total 2 marks

- 36 C**
- The ethical principle of confidentiality is designed to protect the participants' rights to privacy by ensuring that researchers do not publicise any information that may identify any of the subjects who were a part of the study. The other choices relate to preventing coercion of subjects to be involved in the study and the recommendation that feedback should be given to subject about the results/ findings of the research.

- 37 C**
- All of the choices are ethical considerations except 'the participants' right to continue even if they are exhibiting signs of discomfort or distress.' Should a participant show any sign of distress, the researcher is obligated to stop the experiment and tend to the welfare of the participant, whether they request it or not.

- 38 B**
- As the patient was only ever referred to as 'Sybil Dorsett' in books and movies, her identity was not known until some time after her death, preserving her privacy. This is consistent with the application of the ethical principle of confidentiality.

- 39 D**
- The overriding ethical principle is the preservation of the welfare of the research participants, which necessitates that participants should not be subjected to situations that would cause them distress. As such, participants could never be exposed to painful or traumatic situations in the course of an experiment. While **C** does contain ethical issues in terms of ability for consent, experimentation could be performed through comparing data gained through the use of standardised questions as a part of routine assessments of the patients' condition.

- 40 i** Confidentiality.
- ii** Research subjects have the right to participate anonymously in any study, and to have their right to privacy protected by the researcher. While giving relevant details for his report, by using a pseudonym Watson did not give enough information to identify the male participant involved.

1 + 1 = 2 marks

- 41** • Voluntary participation ensures that participants willingly agree to be involved in the study (i.e. are not forced or coerced to participate).
- Informed consent goes further to provide the potential participants with all the necessary details about the research study, including possible risks, in order for them to make an educated decision as to whether they will agree to be a part of the experiment.

1 + 1 = 2 marks

- 42** • The overriding principle involved in psychological research with human participants is the preservation of their physical and psychological welfare through the provision of appropriate levels of care.
- As such, psychologists must ensure that they apply ethical principles to ensure that participants in their research leave the experiment in as similar a state as possible to how they entered it.

1 + 1 = 2 marks