Name:
Tutor Group:
Topic: 2. Perception (page 30 – 53)

IGCSE

Psychology Revision Workbook

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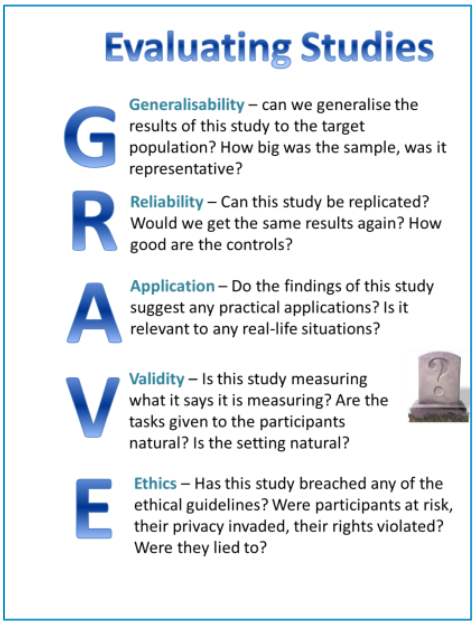
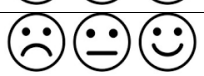
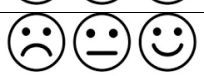
IGCSE Psychology Command Terms

Command Term	Definition
Calculate	Work out the value of something.
Compare	Identify similarities and/or differences.
Complete	Finish a task by adding to given information.
Criticise	Assess worth against explicit expectations.
Define	Give a definition of.
Describe	Give an account of.
Discuss	Present key points about different ideas or strengths and weaknesses of an idea.
Draw	Present a possible conclusion
Estimate	Assign an approximate value.
Evaluate	Judge from available evidence.
Explain	Set out purposes or reasons.
Explain how	Give a detailed account of a process or way of doing something
Explain why	Give a detailed account of reasons in relation to a particular situation
Give	Produce an answer from recall or from given information.
Identify	Name or otherwise characterise
Interpret	Translate information into recognisable form
Justify	Support a case with evidence
Label	Provide appropriate names on a diagram.
Name	Identify using a recognised technical term
Outline	Set out main characteristics
Sketch	Roughly draw or plot.
State	Express in clear terms
Suggest	Present a possible case/solution
Write	Provide information in verbatim form



Perception

Learning objectives:	**I've made revision notes on this**	**'RAG' this objective 1st Attempt**	**'RAG' this objective 2nd Attempt**
Understand the concepts of sensation and perception.			
Understand key concepts from research methods topics.			
Understand the binocular depth cues of retinal disparity, convergence.			
Understand the monocular depth cues of height in plane, relative size, occlusion and linear perspective.			
Understand and be able to evaluate Gibson's direct theory of perception.			
Understand motion parallax			
Understand why and how ambiguity, misinterpreted depth cues, fiction and size constancy cause visual illusions.			
Identify and describe the Ponzo, the Müller-Lyer, Rubin's vase, the Ames Room, the Kanizsa triangle and the Necker cube illusions.			
Understand and be able to evaluate Gregory's constructivist theory of perception.			
Understand and be able to evaluate Bruner and Minturn's study of perceptual set.			
Understand the concept of perceptual set and how expectation affects perception.			
Understand key concepts from research methods topic.			
Understand and be able to evaluate Gilchrist and Nesberg's study of motivation.			
Understand the concept of motivation and how it affects perception.			
Understand key concepts from research methods topic.			
Understand and be able to evaluate Nisbett and Miyamoto study on culture.			
Understand the concept of culture and how it affects perception.			
Understand and be able to evaluate the Kunst-Wilson and Zajonc study on emotion.			
Understand the concept of emotion and how it affects perception.			

Perception Keywords:

Keyword	Definition
Sensation	
Perception	
Depth cues	
Monocular depth cue	
Binocular depth cue	
Height in plane	
Relative size	
Occlusion	
Linear perspective	
Convergence	
Retinal Disparity	
Motion Parallax	
Inference	
Visual illusion	
Sensory Information	
Misinterpreted depth cues	
Ambiguity	

Fiction	
Size Constancy	
Constructivist theory	
Nurture	
Perceptual Set	
Culture	
Motivation	
Control group	
Emotions	
Expectation	
Stimulus	
Subliminal Exposure	

2.1 Sensation and Perception

Understanding Sensation & Perception

Sensation – The information we receive through our senses. *Add as many examples of these as you can think of here.*

Perception – The brain's process of interpreting and organising sensory information being received in order for it to make sense or to give it meaning.

Task: Use the above information and understanding to link the different ways we can perceive information, below, to the sense it will receive information from

Auditory perception	Vision
Visual perception	Hearing
Olfactory perception	Smell
Tactile perception	Taste
Gustatory perception	Touch

Monocular Depth Cues Worksheet

Monocular depth cues are visual indicators that provide information about the depth and distance of objects using only one eye. These cues include relative size, occlusion, linear perspective, and height in plane. Understanding these cues can help us better interpret the world around us and are often used in art to create a sense of realism.

Fill in the Blank: Fill in the blank with the correct words.

1. _____ occurs when one object blocks part of another, indicating that it is closer.
2. _____ refers to how parallel lines appear to converge as they recede into the distance.
3. In _____, objects that are farther away appear to be smaller than those that are closer.
4. _____ describes how objects higher in a scene appear farther away than those lower in the scene.
5. An artist uses _____ to create a three-dimensional effect on a flat surface.

Word Bank:

Linear Perspective Occlusion Relative size
Height in Plane Depth cues

Multiple Choice Questions: Choose the correct answer from the choices for each question.

1. Which monocular depth cue suggests that two parallel lines will meet at a point in the distance?
    - A) Occlusion
    - B) Height in plane
    - C) Relative size
    - D) Linear perspective
2. What does the monocular depth cue of relative size help us determine?
    - A) The color of an object
    - B) The speed of an object
    - C) The distance of an object
    - D) The texture of an object
3. When an object partially covers another, it is an example of which depth cue?
    - A) Linear perspective
    - B) Occlusion
    - C) Height in plane
    - D) Relative size
4. Which monocular cue makes distant objects appear higher on our field of vision?
    - A) Occlusion
    - B) Height in plane
    - C) Relative size
    - D) Linear perspective
5. When artists use a 'vanishing point' in their work, they are employing which depth cue?
    - A) Relative size
    - B) Height in plane
    - C) Linear perspective
    - D) Occlusion

Open-Ended Questions: Answer the following questions in complete sentences.

1. Describe how the concept of occlusion is used to determine the depth of objects in a scene.

2. Explain how relative size can help us understand the distance of objects we see every day.

3. Discuss how linear perspective is utilized by artists to create a sense of depth in paintings.

Understanding Binocular Depth Cues

Binocular depth cues are important for perceiving depth and distance. Our brain uses the information from both eyes to create a 3D view of the world. Predators often have forward-facing eyes, which help them judge distances accurately. Two main binocular cues are retinal disparity and convergence. Retinal disparity refers to the difference in images between the eyes. When an object is closer, the discrepancy is larger. Convergence involves the inward rotation of the eyes to focus on objects. Closer objects require more convergence, while distant objects need less.

Fill in the Blank: Fill in the blank with the correct words.

1. Binocular depth cues help us perceive _____.
2. Retinal _____ is the difference between the images seen by each eye.
3. Predators have _____-facing eyes to judge distances accurately.
4. _____ occurs when the eyes rotate inward to focus on closer objects.
5. Less eye _____ is needed for distant objects.

Word bank: convergence, forward, depth, rotation, disparity

Multiple Choice Questions: Choose the correct answer from the choices for each question.

1. What is the primary role of binocular depth cues?
    - A) To enhance colour perception
    - B) To judge distances accurately
    - C) To improve night vision
    - D) To detect motion
2. What does retinal disparity indicate?
    - A) The colour of an object
    - B) The brightness of an object
    - C) The distance of an object
    - D) The speed of an object
3. What happens during convergence?
    - A) Eyes rotate outward
    - B) Eyes rotate inward
    - C) Eyes change color
    - D) Eyes blink rapidly
4. Which binocular cue is primarily related to muscle movement?
    - A) Retinal disparity
    - B) Convergence
    - C) Colour perception
    - D) Motion detection

Open-Ended Questions: Answer the following questions in complete sentences.

1. Explain how retinal disparity helps in depth perception.

2. Describe the process of convergence and its significance.

3. Why are binocular depth cues important for predators?

James J. Gibson's direct theory of perception: the importance of nature in perception

Direct perception is the idea that we perceive simply by using the messages we receive through our _____. This gives our brains enough information to understand the world we live in. James J. Gibson developed the _____, and believed that the key to understanding perception is to remember what it is used for. People (and animals) do not just receive passive images of the world. We are _____ in it, and this activity is part of our _____ because it changes the visual images we receive.

Motion parallax is another monocular cue. Explain what it helps us with:

-
-

Eleanor Gibson, who was married to James J. Gibson, was also interested in perception. She spent much of her life studying depth perception in animals. She demonstrated that most animals can perceive depth by the time they can walk, and those that can walk at birth (like goats and chicks) can perceive depth at birth too.

Use the space below to explain what E.Gibson and Walk demonstrated through the 'visual cliff':

- What is it?
- Sample -
- Method -
- Findings –
- Conclusion -

James Gibson argued……

An ecological theory

Direct perception is sometimes called the _____ theory of perception. This is because James J. Gibson believed that _____ evolved to help animals cope with and understand their environment.

List examples that support this:
•
•
•

James J. Gibson argued that our perception of objects includes the possibilities for action that they _____. He called this their _____. **Affordances** are also part of direct perception. We are not just looking at the environment as if we are watching a _____, totally separate from us. Instead, we perceive what is around us in terms of what it allows us to do. James J. Gibson's theory of direct perception tells us that we live in a _____ _____ that is three-dimensional and also includes our own behaviour as well. So, according to James J. Gibson, we do not need to make _____ or guesses about what we are seeing. We have enough information from our senses and all the cues available to be able to understand the world around us.

Evaluation James J. Gibson's direct theory of perception:

Which letters from S.O.D.A can you apply to the evaluation of this theory?

Focus	Points with Evidence and Explanation (PEE Format)
S	
O	
D	
A	

Exam Question practice

1. What are binocular depth cues? [2mark]

2. Identify and explain one monocular depth cue. [2 marks]

3. Explain how 'convergence' helps us perceive how far away objects are. [3 marks]

4. Describe and evaluate Gibson's direct theory of perception. **[12 marks]**

What to do next?

- Break the question down with your highlighter

Can you believe what you see?

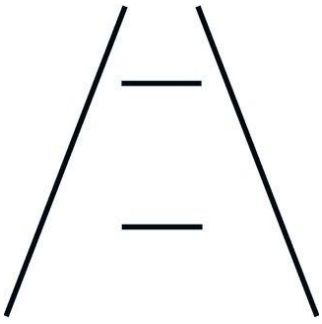
Perception: Visual Illusions

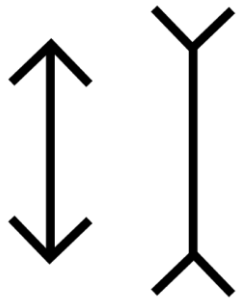
The syllabus says... *Understand **why** and **how** ambiguity, misinterpreted depth cues, fiction and size constancy cause visual illusions.*

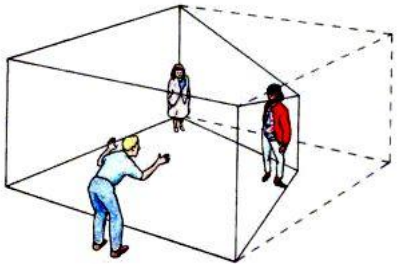
Cognitive strategy behind Visual Illusions	Description: Why & how?
Misinterpreted Depth Cues	Our _____ uses cues to judge how far away objects are, but sometimes it misinterprets them. This can make a flat object seem three-dimensional. For example, in the _____ _____ illusion, two people appear to be different sizes because the brain assumes the room is rectangular, even though it's distorted.
Ambiguity	This occurs when an image can be interpreted in _____ _____ one way. The brain may switch between different interpretations, causing the perception to shift from one option to another. For example, a picture might appear as either a face or a vase, and the brain alternates between these two views.
Fiction	Sometimes, the brain _____ in gaps in the sensory information with things that aren't there. For example, when we see patterns or shapes that seem to form familiar objects, like a horse and rider, even though the image is just random marks on a surface.
Size Constancy	The brain tends to perceive objects as being the same size, even if the image changes when we move closer or farther away. For example, an object may appear _____ as we move away, but we still understand it to be the same size.

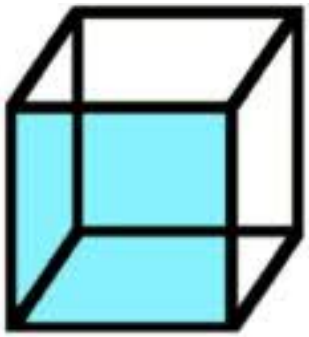
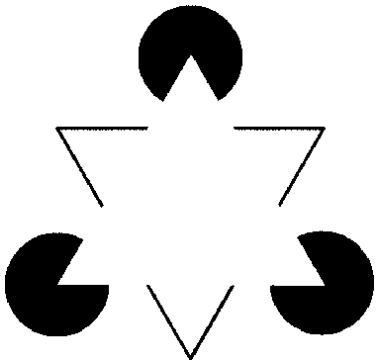
The syllabus says... *Identify and describe the Ponzo, the Müller-Lyer, Rubin's vase, the Ames Room, the Kanizsa triangle and the Necker cube illusions.*

Task: Identify and describe what you see, from the above table, in the illusions below.

Name of the illusion:	The Ponzo Illusion
	**What can we see happening?** The two outside lines create the illusion of a vanishing point at the top of the drawing (almost like railway tracks), which unconsciously makes our brain interpret the horizontal lines as being different sizes.
	Why is the visual illusion being created? This is because of **misinterpreted depth cues**, as the brain unconsciously uses line perspective (monocular depth cue) to interpret the distance created by the two lines on the right and left, however this is false. When measured both horizontal lines are the same length.

Name of the illusion:	The Muller-Lyer Illusion
	**What can we see happening?** The left line has outward-pointing arrowheads, which makes it look like the near edge of a building. It seems like the left line represents something 'near' to us. The inward-pointing arrowheads on the right line make it look like an inside corner of a room.
	Why is the visual illusion being created? Due to _____ our brains therefore interpret that the right line is far away, and that if we brought it nearer to the left line it would be longer. We therefore perceive the right line as longer. Again, both lines are the same length.

Name of the illusion:	Ames room
 	**What can we see?** If we look from a special viewpoint, we see person 1 as being much larger than person 2.
	Why is the visual illusion being created? This illusion uses size constancy to produce a visual illusion. It works because, although the room looks square, it is not really. The person who looks smaller is further away and further down the slope on the floor, but the lines and windows in the room are carefully drawn so the viewer perceives the room as flat and square
Name of the illusion:	Rubin's Vase
	**What can we see happening?** _____
	Why is the visual illusion being created? This illusion is created by _____**,** meaning that the brain copes with the confusion/misleading visual cues by focusing on only one explanation or the other.
Name of the illusion:	The Necker cube
	What can we see? _____

	**Why is the visual illusion being created?** _____ Sometimes, though, an image is so **ambiguous** that the brain cannot decide. It can be seen either way, so your brain cannot decide which is the 'right' representation and therefore flips the perceived image from one to the other.
Name of the illusion:	The Kanizsa triangle
	**What can we see?** _____
	Why is the visual illusion being created? _____ _____

2.3 Constructivist theory of perception

In your own words, summarise the constructivist theory of perception using page 41 and 42.

Gibson's Direct Theory of Perception vs Gregory's Constructivist Theory of Perception

Here's a comparison table outlining the key differences between **Gibson's Direct Theory** and **Gregory's Constructivist Theory** of perception for IGCSE Psychology:

Use the notes provided to complete the table below:

Feature	Gibson's Direct Theory	Gregory's Constructivist Theory
Nature vs. Nurture	Emphasizes _____ – perception is **innate** and does not require prior experience.	Emphasizes _____ – perception is **learned** through past experiences.
How Perception Works	We perceive the world _____ from the information in our environment.	Perception involves making _____ based on what we expect to see.
Role of Sensory Information	The **optic array** (visual information from the environment) provides all the information needed for _____.	The brain uses _____ _____ and _____ _____ to interpret what we see.
Depth Perception	Uses **affordances** and _____ _____to judge depth and distance.	Uses **visual cues** such as _____, shape, and shadows to infer depth.
Illusions	Perception is _____ and does not rely on guesses, so illusions are _____.	Illusions occur when our _____ makes incorrect guesses based on past experience.
Example	A _____ crawling to the edge of a table will perceive the drop naturally _____ needing experience.	If you see a dark shape in your room at night, you might think it's a person based on past _____, but when you turn on the light, you see it's just a _____.

Word Bank
Directly
Visual Cues
Baby
Experiences
Without
Not well explained
Chair
Brain
Accurate
Nature
Perception
Past knowledge
Nurture
Inferences
Size
Motion Parallax

Perceptual Set

At any moment, we receive more information than we can process, so we focus on what seems important while ignoring the rest. This **state of readiness** to perceive certain things is called **perceptual set**.

Like athletes preparing for a race ("Get ready, get set, GO!"), our minds anticipate and interpret information based on expectations. Perceptual set influences:

- **Memory** – Mood affects what we remember (e.g., bad mood = negative memories).
- **Decision Making** – Expectations and recent experiences shape choices.
- **Learning** – Some things are easier to learn due to repetition (e.g., babies learning rhymes).

Perception is not just about what we see—it is shaped by our experiences, emotions, and readiness to interpret the world.

Fill in the blank with the correct words.

1. Perceptual _____ is a readiness to perceive certain things.
2. Athletes are told to, 'Get ready, get _____, GO!' to prepare them for a race.
3. Our mood can affect our_____ and the things we remember.
4. Babies learn _____ more easily than ordinary sentences due to repetition.
5. Perceptual set can influence our _____ making processes.

Word bank in English: set, decision, rhymes, memory, set

Multiple Choice Questions: Choose the correct answer from the choices for each question.

1. What is a perceptual set?
    - A) A mental readiness to perceive certain things
    - B) A type of memory
    - C) An athletic position
    - D) A type of learning style
2. Which of the following is NOT affected by perceptual set?
    - A) Decision making
    - B) Memory
    - C) Physical strength

- D) Perception

3. How does mood affect memory?
    - A) Mood does not affect memory.
    - B) A good mood makes us remember unpleasant things.
    - C) A bad mood makes us remember pleasant things.
    - D) A good mood makes us remember pleasant things.
4. Why do babies learn rhymes more easily?
    - A) Because they are set to learn through repetition
    - B) Because they are taught in schools
    - C) Because they dislike ordinary sentences
    - D) Because they have better memory than adults
5. What does being 'set' mean in the context of a race?
    - A) Being fully ready and prepared
    - B) Being relaxed
    - C) Being unfocused
    - D) Being undecided

Perceptual Set and Culture

What is meant by culture?

Key Study: Nisbett & Miyamoto (2006)

Aim: To demonstrate that the way people perceive the world around them is determined by the complexity and detail of the environment in which they grow up.

Method: From a previous study, the researchers knew that photos of Japanese streets were rated as more complex than photos of American streets.
At Michigan University, USA, a group of 30 American students were shown photos of streets; 15 were shown photos of American streets while 15 were shown photos of Japanese streets. At Kyoto University, Japan, this was repeated with 32 Japanese students; 16 were shown photos of Japanese streets, while 16 were shown photos of American streets. The students in both universities had therefore been given a perceptual set. If they saw the Japanese streets, they were 'set' to see complex scenes. If they saw American streets, they were 'set' to see non-complex scenes.
All students were then shown pairs of animations and were asked to write down differences between each pair.

Results: Overall, Japanese students found more differences than American students. However, both the Japanese and American students who saw the photos of Japanese streets found more differences, and the Japanese and American students who saw American streets found fewer.

Conclusion: Asian people tend to perceive the world in a holistic way and attend to the overall context of their environment, so they attend to all the detail. Western people tend to perceive in an analytical way and focus on individual items in the world around them, missing some of the detail. This difference is determined by the complexity of the environment that each group has grown up in.

Why is this research important? What does this study suggest about the relationship between *CULTURE* and *PERCEPTION*?

This study was highly controlled in many aspects, such an environment and when taking measurements.

List 3 evaluation points, below, based on this information – identifying if they are strengths or weaknesses with happy 😊 or sad ☹️ faces next to

Perceptual Set and Motivation

What is meant by Motivation

Key Study: Gilchrist & Nesberg (1952)
Aim: to investigate how motivation affects perception.
Method: 26 university students were randomly allocated to one of two groups. One group would go for 20 hours without any food and only drink water, and a second group (the control group) would have their normal meals during the 20 hours. Participants were shown a set of pictures of typical meals on screen for 15 seconds. They were told that, after another 15 seconds, they would see the pictures again, but that they would look different. Their job was to adjust each picture so that it looked the same on the screen as it did when they saw it 15 seconds earlier. The researchers had changed the brightness of the pictures when they were shown the second time. Participants were asked to adjust the brightness by turning a knob. All participants were tested at the beginning of the study (just after their lunchtime meal), after 6 hours, and after 20 hours.
Results: the control group showed little difference in their memory of the brightness of the pictures as time went on. But as the experimental group became hungrier, they judged the pictures to be brighter. Figure 2.27 shows the differences between the two groups.
Conclusion: hunger can affect the way we perceive images of food, which suggests that motivation affects perception.
Why is this research important? What does this study suggest about the relationship between *MOTIVATION and PERCEPTION*?

Using pages 74 and 78 in the textbook – comment below on why this study may be deemed both ethical and unethical:
ETHICAL: because…
UNETHICAL: because…

Perceptual Set and emotion

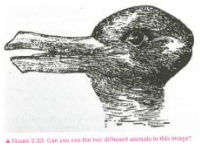
What is meant by Emotion

Key Study: Kunst-Wilson & Zajonc (1980)
Aim: to see if the more familiar we are with something, the more we like it.
Method: in the first stage of the study, participants were repeatedly presented with geometric shapes on a screen, but the images were shown too briefly for the participants to recognise what the images were. Then on test trials, participants were presented with several pairs of geometric shapes. Only one shape in each pair had been shown in the first stage. For each pair of shapes, the participant had to answer two questions: 1. 'Which of these two shapes have you seen before?' This was a recognition test. 2. Which of these two shapes is the most attractive?' This was a feeling test.
Results: The results for the recognition task showed no discrimination, meaning that participants could not identify which of the pair of shapes they had seen previously. The results of the 'feeling' test were very different. The participants consistently chose the shape they had been shown on the screen in the first stage of the study, even though they could not consciously have seen the shape.
Conclusion: The results suggest that the more familiar we are with something, the more we like it. It also suggests that our perceptual system works at an unconscious level. We can be exposed to stimuli that we are not consciously aware of, but our brains have the information and can link it to systems that deal with emotion. This can then affect our behaviour later.
Why is this research important? What does this study suggest about the relationship between *EMOTION* and *PERCEPTION*?

What is meant by Subliminal exposure?	Comment on this study's ecological validity and provide an explanation.

Perceptual Set and expectation

What is meant by Expectation?



Key Study: Bruner and Minturn's perceptual set study (1955)

Aim: to investigate how expectations can direct perception and cause a perceptual set.

Method: 24 student participants were asked to take part in an experiment recognising numbers and letters. Letters or numbers were flashed up very quickly. Participants were then asked to draw the letter or number as soon as they could recognise it.

The test stimulus was a broken 'B', which was ambiguous and could be seen as either the letter B or the number 13 (see Figure 2.31). Half of the participants were shown a series of four stimulus letters (L, M, Y, and A), followed by the test stimulus. They were then shown a series of four stimulus numbers (16, 17, 10, and 12) followed by the test stimulus. Finally, they were shown a series of mixed letters and numbers, and then the test stimulus. Each participant therefore saw the test stimulus three times: once when they were expecting a letter, once when they were expecting a number, and once when they were expecting either.

The other half of the participants faced the same procedure, except that the order was the numbers, then the letters, and then the mixture.

Results: Most of the participants drew an open figure, like a '13', when they were expecting a number to appear, and a closed figure, like the letter 'B', when they were expecting a letter. When they were expecting either a letter or a number they produced mixed results: some drew a '13' and some drew a 'B'.

Conclusion: the researchers concluded that the participants' expectations had been set and therefore directly affected how they interpreted the stimulus figure.

Why is this research important? What does this study suggest about the relationship between *EXPECTATION* and *PERCEPTION*?

Using GRAVE - List 3 evaluation points, below, based on this information – identifying if they are strengths or weaknesses with happy 😊 or sad ☹️ faces next to them.

Practice Exam Questions:

5. Name a theory that affects perception. [1 mark]

6. Evaluate Gregory's constructivist theory of perception. [6 marks]

7. Outline the method used in one study of motivation? [6 marks]

8. Describe and evaluate a study of perceptual set? [9 marks]