AP PSYCHOLOGY • EXERCISE SHEET

# 2.1 Perception

Name: _____ Class: _____ Date: _____ **Total: 18 marks**

**KEY WORDS** context 情境 • attention 注意 • perception 知觉 • bottom-up 自下而上 • top-down 自上而下

## Objective

Build the skills to answer exam questions on **perception** 知觉 and how it differs from sensation.

**You must be able to:**

- distinguish **bottom-up** 自下而上 from **top-down** 自上而下 processing
- explain how **attention** 注意 selects among available inputs
- describe how **Gestalt** 格式塔 principles organise a scene
- state what a **perceptual constancy** 知觉恒常性 and a **depth cue** 深度线索 do

## 1 Worked examples

Study these first. Each one shows the method for a task used later.

### ■ Two directions of processing

**Bottom-up** processing builds a percept from the incoming sensory data. **Top-down** processing uses expectation, context and prior knowledge to interpret it. Ordinary perception uses both at once.

### ■ Attention selects

We cannot process everything reaching the senses. Selective attention makes some inputs available for full processing; **inattentional blindness** shows that an unattended event can go entirely unnoticed even when it is in plain view.

### ■ Gestalt organisation

The visual system groups elements automatically: **figure and ground**, **proximity**, **similarity**, **closure**. The organisation is imposed by the perceiver, not read off the image.

### ■ Constancy and depth

**Perceptual constancy** keeps an object's size, shape or colour stable despite changes in the retinal image. **Binocular** cues (retinal disparity) and **monocular** cues (relative size, interposition, linear perspective) recover depth from a flat image.



## 2 Practice

**2.1** State the difference between bottom-up and top-down processing. [2]

**2.2** Explain what inattentional blindness demonstrates about perception. [2]

**2.3** A door appears rectangular even when seen at an angle.

(a) Name the phenomenon. [1]

(b) State what the retinal image actually shows. [1]

## 3 Exam-style questions

**3.1** Reading a smudged word correctly because of the sentence around it is mainly [1]

- **A** bottom-up processing
- **B** top-down processing
- **C** sensory adaptation
- **D** transduction

**3.2** Judging that a car is far away because it looks small relies on a [1]

- **A** binocular cue
- **B** monocular cue
- **C** Gestalt closure principle
- **D** perceptual constancy

**3.3** Viewers counting passes in a video fail to notice an obvious unexpected event.

(a) Name the effect. [1]

(b) Explain what it shows about the role of attention. [2]

**3.4 Applied research task.** Participants were shown an ambiguous drawing that can be seen either as a duck or as a rabbit. Group A had just been shown photographs of farm birds; Group B had just been shown photographs of woodland mammals. 78% of Group A reported a duck; 74% of Group B reported a rabbit. Both groups received identical visual information.

(a) Identify the independent and the dependent variable. [2]

(b) Name the psychological concept the results demonstrate, and explain how the study supports it. [2]

(c) Explain the difference between sensation and perception, using this study as the example. [2]

(d) State **one** reason why the results do not show that the participants' eyes worked differently. [1]



## Solutions

**2.1** bottom-up builds a percept from incoming sensory data; top-down interprets it using expectation, context and prior knowledge.

**2.2** attention is required for conscious perception; an unattended event can be fully visible and still go unnoticed.

**2.3** (a) shape constancy. (b) a trapezoid, not a rectangle.

**3.1 B**. context and expectation supply the interpretation the data alone does not.

**3.2 B**. relative size is available to one eye, so it is a monocular cue.

**3.3** (a) inattentional blindness. (b) perception is selective, not a complete recording, so what is unattended may never reach awareness at all.

**3.4** (a) Independent variable — the type of photographs shown beforehand, birds or mammals (1). Dependent variable — which animal the participant reported seeing in the ambiguous drawing (1).
(b) **Perceptual set** — the readiness to perceive one thing rather than another (1). The two groups received identical sensory input but reported different images, so the difference must come from the expectation created by the priming photographs (1).
(c) **Sensation** is the detection of physical stimulus energy by the receptors and its transduction into neural signals — here, the same pattern of light falling on every participant's retina (1). **Perception** is the brain's organisation and interpretation of that input, which is why the same signal became a duck for one group and a rabbit for the other (1).
(d) The stimulus was physically identical for everyone, and participants were randomly allocated, so any difference in the eyes themselves would be spread evenly across both groups (1).