

2.1 Perception

Name: _____ Class: _____ Date: _____

Total: 11 marks

KEY WORDS context 情境 • attention 注意 • bottom-up 自下而上 • perception 知觉 • 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; **inattention 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]

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.