READING PASSAGE 3

*You should spend about 20 minutes on **Questions 27-40**, which are based on Reading Passage 3 below.*

The strange world of sight

Seeing is believing, it is said. But, asks Richard Gregory, could it be the other way round?

Two of the great British men of the 17th century, the philosopher John Locke and the physicist Isaac Newton, were both aware that objects are not coloured, and that against all appearances light is not coloured either. This is still not generally recognised even now, 400 years later, because it seems so implausible. Yet it tells us something very important — that perceptions are not identical with what we perceive, and may be very different.

The most accurate historical account of perception is that of the 19th-century German scientist Hermann von Helmholtz. However, it was ridiculed at the time. Von Helmholtz thought that perceptions are unconscious inferences we make based on a combination of clues provided by the eyes and other senses, and knowledge of the world. This idea of unconscious inference for perception preceded, by several years, the psychoanalyst Freud's notion of the unconscious, which was also initially treated with derision because it undermined the notion of humans as pre-eminently rational beings who could be held responsible for their actions and awarded blame or praise accordingly.

Crucially, perception of the present depends on rich, though of course not always correct or appropriate, knowledge from the past. We interpret sense data (what we hear, touch, taste, see and smell) from the present according to what we already know. This raises the question: if we see the present through memory, why aren't past and present confused? The pioneering Russian neurologist Alexander Luria described the case of Mr S, who had a remarkable memory. However, he was prone to just such confusions, for example mistaking seeing his clock for remembering it, and so failing to get up in the morning. This suggests that perhaps an important function of perception is to underline the present. Individual perceptions have a vividness that is rare for memories, which might be how we are able to separate them. Try this: look at something for a few seconds, and then shut your eyes and visualise it in memory. You will almost certainly find that the memory is pale by comparison with the perception. Perhaps this is why past and present are not normally confused. Luria's Mr S had exceptionally vivid memories, and rich synaesthesia (experiencing perceptions from another sense as well as the one being stimulated, such as musical notes experienced as colours), which may be why he confused seeing with having seen.

The complexity of processes involved in how we see first impressed itself on me 45 years ago. With my colleague Jean Wallace, I studied the rare case of Sydney Bradford, a man who had been born blind but, through a corneal graft at the age of 52, suddenly found himself able to see. Almost immediately after the operation he was able to ‘see’ but he could only see those things that he already knew about, having experienced them through touch. It was his touch memories that enabled him to perceive them with his eyes. When Bradford was first taken to the zoo, he proved utterly unable to see an elephant as he had no knowledge to make sense of his perceptions.

The more recent case in California of Mike May, who was also born blind, is similar. Since his operation, his sight has gradually improved as he learns to see, for example, by understanding how shadows represent depth and tell us about the shape of things. Some of the consequences of May’s new-found vision were less happy. He had been a champion blind skier, but following the operation, he would have to shut his eyes while skiing to block out what he now found was a terrifying sight.

But acceptance of this intimate connection between memory and perception, even though it was first noticed in the 17th century, has been slow in brain science. Despite the fact that state-of-the-art brain imaging shows that perception animates parts of the brain associated with both present information and memory, most research on memory and perception is still undertaken as if these were separate processes. Seeing used to be thought of as taking place only in the eyes, and in quite specialised brain regions; but now it seems that half the brain is occupied with seeing, requiring a lot of energy. Perhaps this is why we shut our eyes for a rest.

It is not just extreme cases like Mike May, but also much more common errors of seeing — illusions — that can reveal the crucial role of memory in governing what we (think we) see. Perception depends on specific knowledge and probabilities. Our brains calculate the likelihood of what is out there, and when too far-fetched, perceptions are rejected.

A dramatic and discomforting example is looking at the two sides of a face-mask. From the front it is a convex shape with the nose sticking out. Then if the mask is rotated, the back of the mask will be seen as convex, though we know that it must be concave. It is almost, if not quite, impossible to sketch the back of a hollow mask to look as it is — hollow. Science often learns from what does not happen: people not seeing a hollow face as hollow is the most revealing experiment on perception. The unsettling truth from brain science is that even people with no visual impairment see what, at some level, they expect to see, and often miss things as they really are.

Questions 27–30

*Choose the correct letter, **A**, **B**, **C** or **D**.*

Write the correct letter in boxes 27–30 on your answer sheet.

27 Why does the writer refer to Locke and Newton in the first paragraph?

- **A** to indicate that his article will cover several scientific fields
- **B** to stress how much physics has changed in 400 years
- **C** to persuade the reader to take him seriously
- **D** to point out that his notions are not new

28 According to the writer, why was Freud's theory of the unconscious mocked?

- **A** It was too complex for his contemporaries to understand.
- **B** It involved criticism of the way people behaved in society.
- **C** People felt that it devalued the accepted concept of humanity.
- **D** People assumed that it was intended as a joke.

29 The writer describes Mr S failing to get up in order to demonstrate

- **A** how realistic most people's memories are.
- **B** how hard it is to tell dreaming and waking apart.
- **C** how unusual it is to mistake a perception for a memory.
- **D** how valuable knowledge of the past can be.

30 What point is the writer making in the text as a whole?

- **A** Perception involves much more than the data collected by the eyes.
- **B** Learning to see as an adult can be a time-consuming process.
- **C** Science is failing to devote enough attention to sight.
- **D** Human perception is remarkably reliable.

Questions 31–36

Do the following statements agree with the views of the writer in Reading Passage 3?

In boxes 31–36 on your answer sheet, write

YES	*if the statement agrees with the views of the writer*
NO	*if the statement contradicts the views of the writer*
NOT GIVEN	*if it is impossible to say what the writer thinks about this*

31 Sydney Bradford relied on recollections of objects he had been told about to help him see after his operation.

32 People who only start to see as adults can learn to see as other people do in time.

33 People who have gained their sight as adults find certain activities harder to do than before.

34 It is evident now that sight involves the eyes and one particular area of the brain.

35 The mask experiment is particularly useful in training people who are regaining their sight.

36 People with perfect vision can fail to interpret objects correctly under certain circumstances.

Questions 37–40

*Complete the summary using the list of words, **A–J**, below.*

*Write the correct letter, **A–J**, in boxes 37–40 on your answer sheet.*

The mask experiment

In this experiment, having looked at the front of a simple face-mask, subjects look at the reverse. However, the subjects are convinced that they are still looking at a mask which is **37** _____ in shape. They believe that the **38** _____ is poking out in the normal manner because that is what they are used to seeing. Attempting to make a **39** _____ of the mask in this orientation leads to the same problem. The subjects fail to see a concave form because of the **40** _____ they have that the features of a face stick out.

A back	**B** brain	**C** view	**D** round
E sight	**F** nose	**G** convex	**H** hollow
I drawing	**J** preconception		

27–30 选择题

题号	答案	题干翻译	精确定位句（第X段，英文原句）	定位句译文	详细解释（证据链 + 同义替换 + 错项排除 + 陷阱）
27	**D**	作者为何在第一段提到洛克与牛顿?	第1段：“Two of the great British men… were both **aware** that objects are not coloured… light is not coloured either… This is still not generally recognised even now, **400 years later**.”	“两位大师早已**意识到**物体与光并无颜色；即使**四百年后**的今天仍未被普遍认识。”	**证据链**：先引17世纪权威→立刻接“400年后仍未被普遍认识”→说明观点**早就存在**。**同义**：were aware＝早已知道；not generally recognised＝并非新观点。**排除**：A“多学科”未提；B焦点不是物理学变迁；C不是“求你认真”的权威诉求。**陷阱**：看到名人就选C（权威论证）易错，此处功能=“溯源并非新说”。
28	**C**	为什么弗洛伊德的“无意识”被嘲笑?	第2段：“…was initially **treated with derision** because it **undermined the notion** of humans as pre-eminently **rational** beings…”	“之所以**遭嘲笑**，是因为它**动摇了**‘人以**理性**为先’的既定人性观。”	**证据链**：derision（嘲笑）+ because（因果）直接给理由。**同义**：undermined＝devalued/削弱；accepted concept of humanity＝既定人性观。**排除**：A“太复杂”无据；B“批评社会行为”非文本；D“以为在开玩笑”=对作者意图的臆测，原文无。**陷阱**：把“mocked”机械等同“joke”（D）。
29	**C**	讲S先生起不来说明什么?	第3段：“…prone to such confusions, e.g. **mistaking seeing** his clock for **remembering** it, and so failing to get up…”；“Perceptions have a **vividness** that is rare for memories…”	“他会把**看到**闹钟**误以为是记得**闹钟，因此没起床；知觉的**鲜活**是区分它与记忆的线索。”	**证据链**：案例=把**知觉当记忆**→后句解释“通常能分开”，侧证这种混淆**不常见但会发生**。**排除**：A“多数人的记忆很真实”非主旨；B“梦与醒”未提；D“过去知识有价值”与案例无关。**陷阱**：把“vividness”误读成“记忆更真实”，其实是“知觉更鲜活”。
30	**A**	全文主旨是什么?	贯穿：第2段“unconscious inferences based on… clues… and **knowledge of the world**”；第3段“perception of the present depends on **knowledge from the past**”；第6段“**half the brain** is occupied with seeing”；第7–8段“**illusions**/expectations”。	—	**证据链**：多处强调“知觉=感官输入＋既有知识/记忆＋大量大脑加工”，并以错觉作证。**同义**：much more than data collected by the eyes＝不仅是眼睛数据。**排除**：B仅是个案；C并未批判科学“不重视视觉”；D与第8段“人常看成自己**预期**的”相反。**陷阱**：被Mike May个案带偏选B。

31–36 判断题（YES/NO/NOT GIVEN）

题号	答案	题干翻译	精确定位句（第X段，英文原句）	定位句译文	详细解释（证据链 + 同义替换 + 错项排除 + 陷阱）
31	**NO**	布拉德福德术后依靠“别人告诉他的”记忆来帮助看见。	第4段：“It was his **touch memories** that enabled him to perceive them with his eyes.”	“是他的**触觉记忆**让他用眼睛把那些东西看出来。”	**证据链**：原文=“触觉体验记忆”，题干=“他人**告诉**的回忆”→直接矛盾。**同义**：touch memories≠told about。**陷阱**：把“memory”笼统等同“别人告诉过”。
32	**NG**	成年后才开始“看”的人，**最终**能像别人一样看。	第5段：“his sight has **gradually improved** as he **learns to see**… some consequences… less happy… **shut his eyes** while skiing.”	“他在学习**看**中**逐步改善**；但也出现不利后果，如滑雪时要**闭眼**。”	**证据链**：只说“逐渐改善”，未承诺“**终会**与常人相同”或给时间界限。**陷阱**：把“improved/learns to see”推断成“最终完全恢复”＝越界推理。
33	**YES**	成年后恢复视力的人在某些活动上更难。	第5段：“He had been a champion **blind skier**, but **following the operation**, he would **have to shut his eyes** while skiing.”	“他原是盲人滑雪冠军，但手术后滑雪时反而**要闭眼**。”	**证据链**：同一活动“术前能、术后反而要闭眼”＝更难。与题干一致→YES。
34	**NO**	视觉只涉及眼睛和一个特定脑区。	第6段：“Seeing used to be thought… only in the eyes… but now it seems that **half the brain** is occupied with seeing.”	“过去以为主要在眼睛；但如今看起来**半个大脑**都在忙着‘看’。”	**证据链**：“**half the brain**”与“one particular area”反向。**陷阱**：抓到“脑也参与”就想选YES，忽略题干的限定词 **one**。
35	**NG**	假面实验对训练复视者特别有用。	第8段：“…not seeing a hollow face as hollow is **the most revealing experiment on perception**.”	“这是**最揭示**知觉本质的实验。”	**证据链**：强调“揭示机理”，未谈“训练复视者的**功效/用途**”。信息缺失→NG。
36	**YES**	视力完好的人在某些情境下也会误判。	第8段：“…even people with **no visual impairment** see what they **expect** to see, and **often miss** things as they really are.”	“即便**无视力缺陷**的人，也会按**预期**去看，**常常错过**事物本来面目。”	**证据链**：无视力缺陷≙完好；expect/miss≙在特定情境（预期/错觉）下误判。与题干一致→YES。

37–40 概要填空（The mask experiment）

题号	答案	题干要填词位置的释义	精确定位句（第 X 段，英文原句）	定位句译文	详细解释（证据链 + 同义替换 + 错项排除 + 陷阱）
37	**G (convex)**	“仍在看一个**凸起**形状的面具”	第 8 段：“the **back** of the mask will be seen as **convex**, though we know it must be concave.”	“面具**背面**会被看成**凸**的，尽管我们知道它应是凹的。”	**证据链**：正面“鼻子外凸”→翻面后应凹，却被看成 **convex**。**排除**：D round“圆”不对应；H hollow“空/凹”与“被看成凸”相反。
38	**F (nose)**	“他们相信**___**在正常地向外凸出”	第 8 段：“From the front it is a convex shape **with the nose sticking out**.”	“从正面看是**鼻子**突出形成的凸形。”	**证据链**：面部最典型“stick out”的是 **nose**。**排除**：E sight/B brain/C view 皆非“五官部件”。
39	**I (drawing)**	“尝试做一个背面朝外的**___**也会出现同样问题”	第 8 段：“It is… impossible to **sketch** the back of a hollow mask to look… hollow.”	“几乎不可能把这种背面**画**成看上去是凹的。”	**同义**：sketch = drawing（图画/素描）。**排除**：A back 已在句内；H hollow 是“应有形状”，不是“产物/动作”。
40	**J (preconception)**	“因为他们有一种**___**：脸部特征应向外凸出”	第 8 段末：“people… see what they **expect** to see.”	“人们会按自己**预期**去看。”	**同义**：expectation = preconception（先入之见/成见）。**排除**：B brain/E sight/C view 皆非“心理先验”；D round 与语义不符。