

CBSE CLASS X

English Language & Literature (184)

ANSWER KEY

From previous CBSE Board Exam questions

Code: 5QTOoS Questions: 14 Maximum Marks: 46 Generated: 2026-06-15 13:05

SELECTIONS USED

Source	Previous-year board
Subject	English Language & Literature
Lessons	The Making of a Scientist
Year	2022-2026
Questions selected	14

Composition — Types: 11 Short · 2 literature_long · 1 literature_extract

Q1.

[3]

Why did Richard Ebright raise a flock of butterflies ? (Making of a scientist)

Previously asked in: 2023 2/4/1 Q9 (c)

♦ The Making of a Scientist

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Model Answer

Richard Ebright raised a flock of butterflies because the butterfly-collecting season around Reading, Pennsylvania, lasted only six weeks, and chasing butterflies one by one meant he could not catch many. To tag more monarchs for Dr Urquhart's migration research, he caught a female monarch, took her eggs, and raised them in his basement through their full life cycle — from egg to caterpillar to pupa to adult butterfly. He would then tag the butterflies' wings and release them.

Source: "The Making of a Scientist," Tagging Butterflies and Early Science Fairs section

Explanation

The examiner expects three clear points: (1) the short collecting season limited how many butterflies he could catch, (2) he needed large numbers for Dr Urquhart's tagging programme, and (3) he raised them through the complete life cycle in his basement. Avoid padding — one tight paragraph covering all three points earns full marks. Always link the reason to the tagging/migration research context.

Q2.

[2]

[Books/science kits serve as] a companion to a child. Explain with reference to Richard's mother. (The Making of a Scientist)

Previously asked in: 2022 2/3/1 Q6 (v)

♦ The Making of a Scientist

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Model Answer

Richard's mother acted as his companion by spending every evening with him at the dining room table. She bought him telescopes, microscopes, cameras, and other equipment. She also got him the book *The Travels of Monarch X*, which opened the world of science to him and became a turning point in his life.

Source: *The Making of a Scientist, Mother's Encouragement and Butterfly Collecting*

Explanation

The question links "companion" to the mother's role. Examiners expect: (1) her personal companionship (evenings together, being his only companion early on), and (2) the material/intellectual support — equipment + the key book. Mentioning the book specifically scores the second mark, as it is cited in both the "Read and Find Out" prompt and the passage as the turning point.

Q3.

[6]

Answer any one of the following two questions in 100–120 words:

Trace the transformation of Richard Ebright from a young man with potential to a respected and accomplished scientist. (The Making of a Scientist)

Previously asked in: 2025 2/2/1 Q11 (b)

♦ The Making of a Scientist

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Model Answer

Richard Ebright's journey from a curious child to a distinguished scientist is remarkable.

As a young child in Pennsylvania, Ebright had a bright mind and driving curiosity. He collected butterflies, rocks, fossils, and coins. His mother played a crucial role — she bought him telescopes, microscopes, and cameras, and encouraged his love of learning. The book *The Travels of Monarch X* became a turning point, opening the world of science to him.

By second grade, he had collected all 25 butterfly species near his hometown. In high school, he researched the purpose of the twelve gold spots on a monarch pupa, discovering an unknown insect hormone. His projects won top honours at International Science Fairs, earning him summer research positions at army and government laboratories.

At Harvard, he graduated second in a class of 1,510 with highest honours. At just twenty-two, he co-authored a new theory on how cells read DNA, published in the *Proceedings of the National Academy of Science* — the first time college students' work appeared there.

His transformation was driven by curiosity, a supportive mother, a will to win for the right reasons, and consistent hard work.

Source: *The Making of a Scientist*, Chapter 6

Explanation

- Examiners look for a **chronological trace**: childhood → high school research → Harvard → published theory.
- Must mention: mother's role, butterfly collecting, the book, gold spots/hormone discovery, Harvard graduation, DNA/cell theory paper.
- The phrase "**will to win for the right reasons**" (from Mr Weiherer's quote) is a valued textual reference.
- Avoid padding; keep sentences tight and factual — this is a 6-mark answer, not a biography.

Q4.

[3]

What vision did Ebright have in raising a flock of butterflies ? (The Making of a Scientist)

Previously asked in: 2026 2/4/1 Q9 (iii)

♦ The Making of a Scientist

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Model Answer

Ebright's vision in raising a flock of butterflies was to tag as many monarchs as possible to help study butterfly migrations. Since the butterfly collecting season around Reading lasted only six weeks, chasing butterflies one by one was inefficient. So he would catch a female monarch, take her eggs, and raise them in his basement through their complete life cycle — from egg to caterpillar to pupa to adult butterfly. He would then tag their wings and release them. For several years, his basement was home to thousands of monarchs at different stages of development.

Source: "The Making of a Scientist," *Tagging Butterflies and Early Science Fairs*

Explanation

The question asks specifically about Ebright's **vision** — i.e., his purpose and method. Examiners expect you to mention: (1) the reason — short season made individual catching inefficient, (2) the method — catch a female, raise eggs through life cycle in basement, (3) the goal — tag and release thousands of butterflies. Avoid adding unrelated details about him losing interest later. Stick to what the passage says about *why* and *how* he raised the flock.

Q5.

[3]

What lesson did Ebright learn when he did not win anything at a science fair ?

Previously asked in: 2023 2/6/1 Q9 (c)

♦ The Making of a Scientist

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Model Answer

When Ebright was in his early years, he entered a science fair but did not win anything because he had simply displayed a collection of butterflies without doing any experiment or real scientific work. This experience taught him an important lesson: to win and succeed in science, it is not enough to just collect or display things. One must also observe, ask questions, and conduct proper experiments. This motivated him to take up genuine scientific research in the future.

Source: *The Making of a Scientist*, Chapter 6

Explanation

The passage does not directly state this lesson, but the textbook (chapter context) implies it. The key point examiners expect is: **Ebright learned that real science involves observation and experiments, not just collecting and displaying specimens.** This is a standard inference question from this chapter — make sure to mention both what he lacked (no experiment) and what he learned (need for genuine inquiry). Avoid writing a vague general answer; be specific to Ebright's situation.

Q6.

[3]

Justify how Ebright's mother played an important part in his becoming a scientist. (The Making of a Scientist)

Previously asked in: 2024 2/2/1 Q9 (ii)

♦ The Making of a Scientist

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Model Answer

Ebright's mother played a crucial role in shaping him into a scientist. She encouraged his curiosity by taking him on trips and buying him telescopes, microscopes, cameras, and other scientific equipment. She spent every evening with him at the dining table, ensuring he was always engaged in learning. Most importantly, she got him the book *The Travels of Monarch X*, which opened the world of science to him and sparked his lifelong passion for research. Without her constant support, Ebright's scientific journey might never have begun.

Source: "Mother's Encouragement and Butterfly Collecting," Chapter 6

Explanation

The examiner expects you to pick **3 specific contributions** of the mother (roughly one per mark): providing equipment/trips, spending evenings doing learning activities, and gifting the key book. Avoid vague praise like "she was supportive" — back every point with a detail from the text. The concluding line ties it together neatly. Stay within 60–90 words.

Q7.

[6]

Answer in about 100-120 words.

Ebright's journey of becoming a leading scientist conveys a strong message to us. His inquisitiveness and competency drove him to become a great scientist. In what manner does Richard Ebright's perseverance, dedication and inquisitiveness inspire you to pursue your dreams? (The Making of a Scientist)

Previously asked in: 2025 2/6/1 Q11(a)

♦ The Making of a Scientist

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Model Answer

Richard Ebright's journey from a butterfly collector to a leading scientist is truly inspiring. His story teaches us that dreams are achieved through curiosity, hard work, and dedication.

From kindergarten, Ebright collected butterflies with great determination. His mother encouraged his learning by providing telescopes, microscopes, and cameras, showing us the value of support and early curiosity. The book *The Travels of Monarch X* sparked his scientific curiosity, reminding us that inspiration can come from anywhere.

His perseverance is evident in how he worked tirelessly — researching butterflies, competing in science fairs, and earning first place at the International Science Fair. He never settled for less, always giving "that extra effort."

His competitiveness was healthy — he wanted to do the best job, not merely win prizes. Starting with curiosity and adding the will to win for the right reasons, Ebright became a great scientist. His story inspires me to pursue my dreams with sincerity, passion, and relentless effort.

Source: "The Making of a Scientist," Robert W. Peterson — Chapter 6

Explanation

This is a value-based/inspirational question worth 6 marks. Examiners look for:

- **Direct references** to Ebright's traits from the text (curiosity, perseverance, dedication, healthy competitiveness).
- **Personal connect** — a line about how it inspires *you* (mandatory, as the question asks).
- **Balanced answer** covering early life, mother's role, research journey, and attitude.
- Avoid vague statements; always link back to specific events from the chapter. Keep the personal reflection brief but genuine — one or two lines suffice.

Q8.

[2]

What did Ebright learn from his failure at the Science fair? (The making of a scientist)

Previously asked in: 2022 2/4/1 Q6 (vi)

♦ The Making of a Scientist

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Model Answer

When Ebright entered his first science fair (county level), he displayed his butterfly collection but won nothing. He learned that a good science fair project required real experiments and a genuine scientific question — not just collecting. This failure motivated him to conduct actual research in later fairs, leading to his award-winning discoveries.

Source: *The Making of a Scientist*, Chapter 6

Explanation

The passage doesn't directly state the lesson from a science fair failure in explicit words, so the examiner expects you to **infer** it from the context: Ebright's early project (just displaying a collection) won nothing, but his later projects involved real experiments (finding the purpose of gold spots on a monarch pupa) and won first place. The key point is that **failure taught him science requires genuine experimentation, not mere collection**. Keep the answer concise — 2 marks = ~40–50 words. Avoid over-detailing his later achievements here.

Q9.

[2]

What role did Ebright's mother play in his success ? (The Making of a Scientist)

Previously asked in: 2022 2/2/1 Q6 (vi)

♦ The Making of a Scientist

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Model Answer

Ebright's mother played a crucial role in his success. She encouraged his curiosity by taking him on trips and buying him telescopes, microscopes, cameras, and other equipment. She spent evenings with him, keeping him engaged in learning activities. She also got him the book *The Travels of Monarch X*, which opened the world of science to him.

Source: *The Making of a Scientist*, Mother's Encouragement and Butterfly Collecting

Explanation

This question directly asks about the mother's role, so pull specific examples from the passage: buying equipment, evening learning sessions, and the crucial gift of the book. Examiners expect at least 2–3 concrete points. Avoid vague statements like "she was supportive" — always back up with details from the text. Mentioning *The Travels of Monarch X* is important as it was a turning point.

Q10.

[3]

What opinion did Mr. Weiherer, Ebright's Social Science teacher have about him?

Previously asked in: 2023 2/1/1 Q9 (b)

♦ The Making of a Scientist

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Model Answer

Mr. Weiherer, Ebright's Social Science teacher, had a very high opinion of him. He noted that Richard always gave extra effort, spending three to four hours at night on debate research in addition to his butterfly research and other interests. He described Ebright as competitive, but "not in a bad sense" — he was not interested in winning for prizes or glory. Rather, he wanted to do the best job he could and win **for the right reasons**. Mr. Weiherer believed this was a key quality for success.

Source: *Harvard, Achievements, and the Making of a Scientist* — Chapter 6

Explanation

The examiner expects three clear points drawn from Mr. Weiherer's direct quotes:

1. Ebright gave extra effort (hours of work beyond school).
2. He was competitive, but not for the wrong reasons.
3. He wanted to be the best for the right reasons — genuine excellence, not prizes.

Avoid simply paraphrasing vaguely; use the specific detail about "three to four hours at night" and the phrase "for the right reasons" — these show close reading and fetch full marks.

Q11.

[3]

How can one say that Ebright's curiosity / inquisitiveness drove him to become a scientist?
(The Making of a Scientist)

Previously asked in: 2024 2/5/1 Q9 (iii)

♦ The Making of a Scientist

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Model Answer

Ebright's curiosity drove him to become a scientist in several ways:

1. **From childhood**, he collected butterflies, rocks, fossils, and coins with great determination, and became an eager astronomer, often star-gazing all night.
2. **A book as a turning point:** *The Travels of Monarch X* opened the world of science to him and sparked a lifelong scientific curiosity.
3. **Research driven by questions:** He questioned the purpose of the twelve gold spots on a monarch pupa — a curiosity that led to the discovery of an insect hormone and eventually his theory on how cells read DNA.
4. **Will to excel:** He worked all night with his room-mate to develop his cell theory, and graduated from Harvard with highest honours.

As the text states, "All of this is possible because of Ebright's scientific curiosity."

Source: *The Making of a Scientist*, chapters on *Early Life*, *Discovery of Insect Hormone*, and *Harvard Achievements*

Explanation

The examiner expects you to pick 3–4 specific instances showing curiosity in action — not vague praise. Key points are: butterfly collecting from kindergarten, the book *The Travels of Monarch X*, questioning the gold spots on the monarch pupa, and the all-night session building molecular models. Always try to quote or paraphrase the text to show you have read closely. Avoid general statements like "he was very curious" without evidence.

Q12.

[3]

Working through his project of collecting and tagging butterflies, Ebright developed a scientific temperament. Elaborate. (Making of a Scientist)

Previously asked in: 2026 2/1/1 Q9 I

♦ The Making of a Scientist

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Model Answer

Richard Ebright's butterfly project laid the foundation of his scientific temperament in several ways:

- **Observation and questioning:** While tagging butterflies, he noticed the twelve gold spots on a monarch pupa and questioned their purpose, showing scientific curiosity rather than accepting assumptions.
- **Experimentation:** He moved from mere collection to designing real experiments — testing viral diseases in caterpillars and the viceroy-monarch theory — learning that real science requires experiments, not just displays.
- **Perseverance:** Losing at his first science fair motivated him to do proper experimental work the following year, showing the will to improve.
- **Systematic work:** Years of raising and tagging thousands of monarchs built his habit of careful, methodical research, which eventually led to his discovery of an insect hormone and a path-breaking theory on cell life.

Source: "The Making of a Scientist," Tagging Butterflies / Discovery of Insect Hormone sections

Explanation

Examiners look for: (1) specific examples from the butterfly project, (2) how those experiences built qualities like curiosity, systematic thinking, and willingness to experiment. Don't just list qualities abstractly — link each to a concrete incident from the chapter. Three well-supported points comfortably cover 3 marks. Avoid padding with unrelated achievements like debating or canoeing.

Q13.

[2]

What are the essential qualities for becoming a scientist, according to Ebright? (The Making of a Scientist)

Previously asked in: 2022 2/1/1 Q6 (v)

♦ The Making of a Scientist

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Model Answer

According to Ebright, three essential qualities are needed to become a scientist: **a first-rate mind, curiosity, and the will to win for the right reasons.** Winning for the right reasons means wanting to do the best job possible, not merely to get a prize or trophy.

Source: *The Making of a Scientist*, "Harvard, Achievements, and the Making of a Scientist"

Explanation

The answer quotes the key line directly: "Start with a first-rate mind, add curiosity, and mix in the will to win for the right reasons." Examiners expect all **three qualities** to be named and the phrase "right reasons" to be briefly explained (doing one's best, not prize-seeking). Avoid padding — state the three qualities and clarify the third one concisely.

Q14.

[5]

"Richard was competitive," Mr. Weiherer continued, "but not in a bad sense." He explained, "Richard wasn't interested in winning for winning's sake or winning to get a prize. Rather, he was winning because he wanted to do the best job he could. For the right reasons, he wants to be the best." And that is one of the ingredients in the making of a scientist. Start with a first-rate mind, add curiosity, and mix in the will to win for the right reasons. Ebright has these qualities.

Read the following extract and answer the questions.

- (i) In light of the excerpt, what can we infer about Richard from Mr. Weiherer's statement, "Richard was competitive, but not in a bad sense" ? [1]
- (ii) Mention the 'ingredients' which are necessarily required in the making of a scientist. [2]
- (iii) Fill in the blank with the correct word from the brackets: Mr. Weiherer suggests that Richard was _____. (lethargic/persistent) [1]
- (iv) As per the above excerpt, what is not true about Ebright? Select the correct option. [1]
- (A) strongly curious
(B) bright minded
(C) competitive spirit
(D) irrational

Previously asked in: 2026 2/2/1 Q6(b)

♦ The Making of a Scientist

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Model Answer

(i) We can infer that Richard was not motivated by prizes or personal glory. He competed only to do his best and deliver quality work, showing healthy, purpose-driven ambition rather than selfish rivalry.

(ii) The ingredients required in the making of a scientist are:

- A **first-rate mind** (high intelligence)
- **Curiosity** (the desire to explore and question)
- **The will to win for the right reasons** (not for prizes, but to do the best job possible)

Ebright possessed all three qualities.

(iii) Mr. Weiherer suggests that Richard was **persistent**.

(iv) The correct option is **(D) irrational**.

Ebright was strongly curious, bright-minded, and competitive — all confirmed in the passage. He was never described as irrational; in fact, his approach was methodical and purpose-driven.

Source: *The Making of a Scientist, Harvard, Achievements, and the Making of a Scientist*

Explanation

- (i) Focus on the contrast: competing *to do the best job*, not *to win a prize* — that's the key inference.
- (ii) The three ingredients are explicitly listed in the passage: first-rate mind, curiosity, will to win for the right reasons. Mentioning all three earns full marks.
- (iii) "Lethargic" means lazy, which contradicts Mr. Weiherer's praise. "Persistent" fits — he put in 3–4 extra hours nightly.

- **(iv)** The passage supports A, B, and C directly. "Irrational" is never suggested and contradicts his entire scientific approach — so D is the odd one out.

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