



Royaume du Maroc
Ministère de l'Enseignement Supérieur,
de la Recherche Scientifique et de l'Innovation



I N S E A

CONCOURS NATIONAL COMMUN

d'Admission dans les Établissements de Formation d'Ingénieurs et
Établissements Assimilés

Session 2026

Épreuve de : **Anglais**

Filières : **MP**

Date : **14-05-2026** Durée **2 Heures** de **17H00 à 19H00**

TEST INSTRUCTIONS AND GUIDELINES

Before answering the test questions, read the instructions carefully.

1. Make sure you have four printed pages.
2. The test is divided into three main sections: **Critical Reading – Translation - Writing**
3. If, during the test-taking process, a candidate identifies a point requiring clarification or a potential error in the test questions, they should note it on their answer sheet and proceed with their composition, justifying his initiative.
4. Make sure your handwriting is clear. Illegible handwriting will affect the whole correction process and may even jeopardize your final score.

IMPORTANT

- You are not allowed to use any document, electronic device or communicate with anyone during the testing session. Evidence of cheating (during the test administration or paper correction) will automatically disqualify the candidate.
- Submitting a blank answer booklet will automatically disqualify the candidate.

Read the texts below and answer the questions that follow:

Text 1:

The scientific method is routinely framed as a 16th or 17th century European invention (1)—a historically incomplete shorthand that overlooks the contributions of Islamic scholars. When the scientific method is framed as a Western possession, non Western trainees are more likely to be perceived as guests rather than as inheritors of a shared tradition. Devaluing non Westerners could contribute to policies that quietly legitimize excessive gatekeeping. For example, US travel bans on Arab and other Muslim majority countries have disrupted scientific mobility and participation (2), and in Canada, a 2024 cap reduced approved study permits for international students by about 35% relative to 2023 (3, 4). Science educators and communicators should work to increase the understanding, both within and outside of the scientific community, that science has a multicultural history and that science today must foster a sense of belonging for those of non Western backgrounds.

The core practices that are now associated with modern science—systematic observation, experimental testing, quantitative analysis, and disciplined skepticism toward authority—were explicitly articulated and practiced during the Islamic Golden Age, which lasted from the 8th to 14th centuries (5). Ibn al Haytham (6), for example, paired mathematical reasoning with controlled experimentation to overturn prevailing theories of vision and argued that investigators must be guided by demonstration rather than deference. Scholars such as al Biruni (7) advanced careful measurement and attention to observational error, and Ibn Sina (8) outlined rules for testing treatments that anticipate key elements of controlled, reproducible evaluation.

Acknowledging this lineage does not diminish the achievements of the European scientific revolution. Rather, recognizing Muslim scholars would clarify the record and strengthen science education by showing how methods evolve through translation, critique, and recombination across societies. Textbook authors and curriculum committees should revise textbook and syllabus language to reflect the scientific method's cumulative, cross civilizational development (9, 10) and should integrate a brief description of the history of scientific methods into research and mentorship training. Journals and publishers can reinforce this historical accuracy by avoiding shorthand with Eurocentric origins in educational content. Ensuring that an accurate history of science is taught and understood is foundational to trust in science, scientific literacy, and inclusion in the scientific community.

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REFERENCES AND NOTES

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2. S. Reardon, Nature 550, 17 (2017).
3. Government of Canada, Canadian postsecondary enrolments and graduates, 2022/2023 (2024); <https://www150.statcan.gc.ca/n1/dailyquotidien/241120/dq241120b-eng.htm>.
4. Immigration, Refugees and Citizenship Canada, "Canada to stabilize growth and decrease number of new international student permits issued to approximately 360,000 for 2024" (2024); <https://www.canada.ca/en/immigration-refugees-citizenship/news/2024/01/canada-to-stabilize-growth-and-decrease-number-of-new-international-student-permits-issued-to-approximately-360000-for-2024.html>.
5. W. Maziak, Science 308, 1416 (2005).
6. J. Al-Khalili, Nature 518, 164 (2015).
7. O. Sheynin, Arab. Sci. Philos. 2, 299 (1992).
8. M. M. Sajadi, D. Mansouri, M.-R. M. Sajadi, Ann. Intern. Med. 150, 640 (2009).
9. G. Saliba, Islamic Science and the Making of the European Renaissance (MIT Press, 2007).
10. A. Kabeer, J. W. Tsai, Nature 560, 29 (2018).

Text 2:

The first person widely credited with developing a systematic scientific approach was Ibn al-Haytham (965-1040 AD). After years of studying light and vision, he demonstrated that light travels in straight lines. However, we should not consider the scientific method as a "fixed prescription" or a "recipe". It is rather a flexible, evolving process that relies on creativity and continuous improvement where all the steps and procedures are continuously evaluated through peer review, allowing knowledge to be refined over time.

In fact, the history of the scientific method is the history of science itself. Early philosophers/scientists used various methods to validate their ideas, theories, observations, discoveries, and findings. Evidence of basic scientific practices can be found in ancient civilizations. For example, an ancient Egyptian medical text, the *Edwin Smith Papyrus* (c. 1600 B.C.) mentions examination, diagnosis, treatment and prognosis.

Aristotle provided another ingredient for the scientific method, namely empiricism. He contributed to the development of empirical thinking by introducing inductive and deductive reasoning, bringing science closer to observation-based inquiry. After Aristotle, significant developments were made during the Islamic Golden Age. Muslim scientists used experimentation and quantification to distinguish between competing scientific theories, set within a generically empirical orientation, as can be seen in the works of Jabir Ibn Hayyan (circa 721-815 AD) and al-Kindi (circa 801-873 AD). However, it was Ibn al-Haytham who first developed proper experimental scientific methods by using experimentation and mathematics to obtain the results as seen in his magnum opus, *Kitab al-Manazir* (*Book of Optics*). He combined observations, empirical work and rational arguments to support his intromission theory of vision, where rays of light are emitted from the objects rather than the eyes. He used the same scientific

approach to prove that the emission theory of vision as proposed by Ptolemy and Euclid (where the eyes emit rays of light) as well as the intromission theory of vision as proposed by Aristotle (where objects emit physical particles into the eyes) were both wrong. Ibn al-Haytham's scientific method was similar to modern scientific method, and consisted of explicit statement of the problem, tied to observation and to proof by experiment; testing and/or criticism of a hypothesis through experimentation; interpretation of data and formulation of a conclusion using mathematics; and the publication of findings.

Al-Biruni (973-1048) expanded the application of scientific method in various fields of science, such as mineralogy, mechanics, astronomy and geography. Al-Biruni emphasised on the importance of repeating experiments in order to prevent systematic and random

errors, including those from instruments and human factors.

These contributions from these important historical figures in science lay the foundation to the methodology used today in modern science. However, one must remember that science has its limitations, and that the methodology applied in scientific endeavours may not be perfect. What the scientific method does is to provide a certain level of confidence that the knowledge obtained is objective and reliable. When scientific knowledge is objective and credible, then it can be regarded as a "tool" to seek the truth in understanding the world that Allah has created.

Adapted from: Shaikh Mohd Salleh, S. M. (2018, April 25) "Muslims' contributions to the scientific method". Institut Kefahaman Islam Malaysia. <https://www.ikim.gov.my/en/muslims-contributions-to-the-scientific-method/>

DISPLAYING COMPREHENSION

1. Answer the questions below using your own words. (Heavy reproduction of the text language will be penalized). (4 pts.)

- Both texts challenge the idea that the scientific method is purely a European invention. How do the authors use historical examples to reshape this narrative?
- Why does the author emphasize repetition of experiments and acknowledgment of errors, and what does this imply about the reliability of scientific conclusions?

2. Paraphrasing (1 pt.)

Paraphrase the following idea from the reading texts in your own words:

"The scientific method should not be seen as a rigid set of steps, but rather as a flexible and evolving process that relies on creativity, testing, and continuous improvement".

3. Commentary (4 pts.)

Write a commentary on the following infographic poster and highlights Karl Popper theory of scientific discovery. Do not exceed 100-word paragraph. (4 pts.)

KARL POPPER (1902-1994) AND THE LOGIC OF SCIENTIFIC DISCOVERY

Science does not try to prove theories true; it tries to prove them false.



Karl Popper was an Austrian-British philosopher of science. He argued that the scientific method is based on criticism, not verification.

1. THE CENTRAL IDEA

A scientific theory is not scientific because it has been proven true, but because it can be disproven.

2. KEY CONCEPTS



FALSIFIABILITY

For a theory to be scientific, it must make risky predictions that could turn out to be false.



CRITICAL TESTING

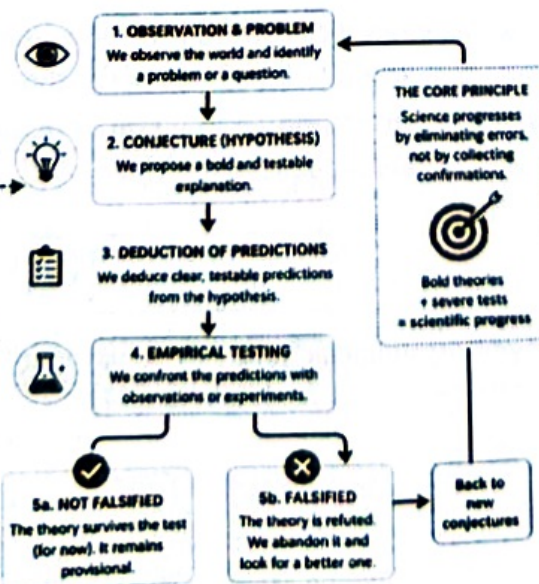
Scientists actively look for evidence that could refute their theories.



FALLIBILISM

All our knowledge is provisional. The best theories are those that have survived the most severe tests so far.

THE POPPERIAN VIEW OF THE SCIENTIFIC METHOD



EXAMPLES



Astronomy:

The prediction that Mercury's orbit would shift was confirmed. Einstein's theory survived this test.



Chemistry:

A chemical theory that fails to predict experimental results is rejected.



Medicine:

A treatment is kept only if it withstands rigorous clinical trials. If not, it is discarded.

IMPLICATIONS

- ✓ There is no final truth in science, only better explanations.
- ✓ Science is always open to criticism and revision.
- ✓ Intellectual humility and honesty are essential.



POPPER IN ONE SENTENCE

A theory is scientific if it is falsifiable; it is knowledge if it has survived criticism.

SECTION 2: TRANSLATION

Theme: Translate the following passage from French into English. (3 pts.)

En nous référant à des observations telles que « la science moderne ne prétend pas aborder le sens de la vie ; cela ne relève pas de son domaine. Dans le monde islamique, le sens est une composante essentielle de la vie », devrions-nous pour autant ériger une frontière entre science musulmane et science moderne ? Bien sûr que non. Toutes deux poursuivent la même mission : comprendre la création. Par exemple, les docteurs Salam, Weinberg et Sheldon ont contribué à répondre à une même question concernant la création : comment l'électromagnétisme et l'interaction faible sont-ils des manifestations différentes d'une même force?

SECTION 3: WRITING

Choose **ONE** of the writing assignments below: (8 pts.)

Topic 1: Relying exclusively on the documents in the test paper, write a synthesis that reacts to the following question:

"If the scientific method is a shared and evolving human creation, can it ever truly be neutral or universally valid?"

- Document 1: the reading texts (pp. 1-2)
- Document 2: the poster (p. 3)
- Document 3: the text to translate on Theme (p. 4)

Compulsory indications:

- Write your synthesis in 200- 250 words.
- Indicate the number of words between brackets at the end of your product (title included).
- Refer to the documents as (Doc1, Doc 2, Doc 3).

Topic 2:

"In the digital age, does widespread social awareness serve as an effective catalyst for meaningful social action, or does it primarily foster "slacktivism"* as a state where awareness replaces tangible action? **Discuss this issue in a structured argumentative essay, supporting your position with relevant examples and well-developed reasoning.**"

***Slacktivism** refers to low-effort online actions, like liking, sharing, or signing digital petitions, taken to support a cause.