Quiz

Socio-historic aspects of physics
In the last 100 years or so
Nieuwpoort 2011
Rules

- The jury has the last word and makes the final decision.
- For each question: 60 seconds to answer.
- One group = one written answer.
1st group of questions: Music

A. Who is the composer of the 1993 opera “Einstein on the Beach”?
1st group of questions: Music

B. Tom Van Laere, Belgian singer-songwriter born in 1974, is held responsible for the making and singing of the pop-song “Einstein Brain.” He took his artist name from On The Road, the novel by Jack Kerouac.

What is this artist name of Tom Van Laere?
1st group of Questions: Music

C. **Olivia Newton-John** was six years when her grandfather won the physics Nobel prize. Who was that German-born physicist?
1ste group of Questions: Music

D. What instrument is Richard Feynman playing as appears on the first pages of his Lectures? (exact name)
1ste group of Questions: Music

E. Who provides all with a guidebook to semiconductor physics?
Questions 1: Music

A. Who is the composer of the opera “Einstein on the beach”? 
B. Which group is responsible for the song “Einstein brain”? 
C. Who is the grandfather of Olivia Newton-John and won the physics Nobel prize? 
D. What instrument is Richard Feynman playing? 
E. Who “writes” guidebook to semi-conductors?
Questions 2: Belgium

A. Who did NOT stay in Belgium for a few months seeking refuge from the Nazi’s? (name)
Questions 2: Belgium

B. Give the name of the two physicists not wearing a mustache on the 1911 Solvay-conference photo?
Questions 2: Belgium

C. What sea-line-company was the cousin of Einstein, Elsa, travelling with when arriving from Pasadena in Antwerp in the spring of 1933?
Questions 2: Belgium

D. Who is

1. Born in Brugge in 1893, died in Utrecht in 1970. Biologist, astrophysicist, self-made man, flemish-minded, esperantist, pacifist and marxist... Mostly known for being a pioneer of spectroscopic research and very gifted physics teacher and observer.

2. Born in Brussel, in 1924, dies in 1990, Belgian physicist with many interests such as solid state physics, nuclear physics and cosmology. He studied mathematics and physics at the ULB in Brussels (Ph.D. In 1946). He worked at the Institute for Advanced Study in Princeton and at the Brookhaven National Laboratory. He came back to the low lands and worked there for some time at Utrecht University before taking broader European responsibilities.

3. Born in 1904, dies in 1974, Belgian physicist with Ph.D. from the Université de Liège in 1926. He collaborated with Niels Bohr. He invented the word *lepton*. 
Questions 2: Belgium

A. Who was not staying in Belgium...?

B. Which two physicists are not wearing a mustache on the 1911/Solvay-conference photo?

C. What sea-line-company was Elsa travelling with when arriving in Antwerp in 1933?

D. Who are ....?
Questions 3: Family

A. The wife of the strangest man P.A.M. Dirac was the sister of ... (which physicist)?
Questions 3: Family

B. Who was the husband of Maria Salomea Skłodowska? (name)
Questions 3: Family

C. Who was the godfather of Wolfgang Ernst Pauli?
Questions 3: Family

D. Who was the husband (and co-author) of Tatjana Aleksejevna Afanasjeva (Татьяна Алексеевна Афанасьева) (died in Leiden in 1964).
Questions 3: Family

A. Wife of Dirac was sister of ...?
B. Husband of Maria Salomea Skłodowska?
C. Godfather of Wolfgang Ernst Pauli?
D. Husband of Tatjana Aleksejevna Afanasjeva?
QUESTIONS 4: Nobel prizes

A. Who was the first to get two Nobel prizes in the same discipline?
QUESTIONS 4: Nobel prizes

B. Who was the very first Nobel Prize winner in physics (1901)?
C. Who are the two physicists the following Nobel prize press release refers to?

The two researchers are being awarded the Nobel Prize for having placed particle physics theory on a firmer mathematical foundation. They have in particular shown how the theory may be used for precise calculations of physical quantities. Experiments at accelerator laboratories in Europe and the USA have recently confirmed many of the calculated results.
D. The Templeton Prize honors a living person who has made an exceptional contribution to affirming life’s spiritual dimension, whether through insight, discovery, or practical works.

Who did not get the Templeton prize? Charles Townes, John Polkinghorne, George Ellis, Walter Thirring, Bernard d’Espagnat, Freeman Dyson or Paul Davies?
QUESTIONS 4: Nobel prizes

A. Who got as first two Nobel prizes in the same discipline?

B. Who won the first physics Nobel prize?

C. Who are the Nobel prize winners having placed particle physics theory on a firmer mathematical foundation.

D. Who did not win the Templeton prize? (Polkinghorn, Ellis, Davies, Thirring, Dyson, Townes, d’Espagnat)
A. Leiden, 8 april 1911: what is the full name of the super-experimental physicist writing in his notebook “Kwik nagenoeg nul”?
B. What was the subject of Einstein’s talk at the 1911 Solvay conference?
C. Who was the winner of the 1911 nobel prize in physics (∞ heat radiation)?
D. What are the two “radioactive” elements that Marie Curie discovered in 1911?
QUESTIONS 5: 100 years ago...

A. Leiden, 8 april 1911: who wrote “Kwik nagenoeg nul”? 
B. Subject of Einstein’s Solvay-talk in 1911. 
C. Nobel prize physics 1911? 
D. What elements did Curie find in 1911?
QUESTIONS 6: pop-writers

Who is the author of

A. A Brief History of Time
B. Shadows of the Mind
C. The First Three Minutes
D. Who is the writer (in a book of 1944) of “From Delbrueck’s general picture on the hereditary substance it emerges that living matter, while not eluding the ‘laws of physics’ as established up to date, is likely to involve ‘other laws of physics’ hitherto unknown, which, however, once they have been revealed, will form just as integral a part of this science as the former.”

- Pauli
- Sommerfeld
- Bloch
QUESTIONS 6: authors

A. A brief history of time
B. Shadows of the mind
C. The first three seconds
D. Biophysics 1944
E. Metal electron theory 1927.
QUESTIONS 7: discoveries

A. Give the correct chronology for the following discoveries: (e.g. a<b<c)

a. Exclusion principle (Pauli);

b. Zeeman effect for Na;

c. Spin ½ for the electron.
QUESTIONS 7: discoveries

B. Give the correct chronology for the following discoveries: (e.g. a<b<c)

a. Quasars (Schmidt and Greenstein);

b. Microwave background (Penzias and Wilson);

c. Pulsars (Bell and Hewish).
QUESTIONS 7: discoveries

C. Who were the two Cambridge physicists that
   a) predicted the neutron (1920),
   b) discovered the neutron (1932)?
QUESTIONS 7: discoveries

D. Liquid crystals. Who made the theoretical analysis (Nobel prize 1991)?

Isotropic  Nematic  Smectic-A  Smectic-C  Crystal
QUESTIONS 7: discoveries

E. Who built the first nuclear reactor (Chicago, 1942)? (name)
QUESTIONS 7: discoveries


B. Chronology of a) pulsar b) MBR c) quasar.

C. Neutron a) prediction b) discovery.

D. Nobel prize liquid crystals.

E. First nuclear (artificial) reactor 1942.
Additional questions: various

Give the location of the following institutes for mathematical and/or theoretical physics:

NORDITA:

EIMA:

ESI:

GGI:
1 A. Philip Glass B. Admiral Freebee C. Max Born D. bongo drums
2 A. Max Born B. Marie Curie and James Jeans C. Red Star Line (Belgenland)
3 A. Eugene Wigner B Pierre Curie C. Ernst Mach D. Paul Ehrenfest
4 A. Bardeen B. Röntgen C. ‘t Hooft and Veltman.
ANSWERS

5  A. Heike Kamerlingh-Onnes  B. quantum theory of specific heats  C. Wilhelm Wien  
D. Polonium and Radium.

6  A. Stephen Hawking  B. Roger Penrose  C. Steven Weinberg  D. Erwin Schroedinger  E. Pauli

7  A. b<a<c  B. a<b<c  C. a) Rutherford  b) Chadwick  D. de Gennes  E. Enrico Fermi