

SPLICE



FOR YOUR INFORMATION!

- There are a total of 20 questions.
- Questions from 1 to 15 carry 1 mark each.
- Questions from 16 to 20 are starred and carry 2 marks each.
- In case of a tie, higher number of starred questions answered will be considered.
- If the tie persists, the winner will be chosen using a sudden death run from first question.
- You are a real quizzzer and you do not require any help from internet!

QM's decision is final and ultimate!



LET'S...

1.

The term **X** appeared in literature in 1980 when it was used by Barbara Hobom to describe genetically manipulated bacteria using recombinant DNA technology.

In 2000, the term **X** was again introduced by Eric Kool at the annual meeting of American Chemical Society to describe synthesis of unnatural organic molecule that function in living system.

Tom Knight, who developed biobrick plasmid DNA part which forms the basis for the event Y, is known as the 'father of **X**'.

Id **X** and **Y**.

2.

X is an adaptive immune response system used by prokaryotes to protect themselves from the attack of bacteriophages.

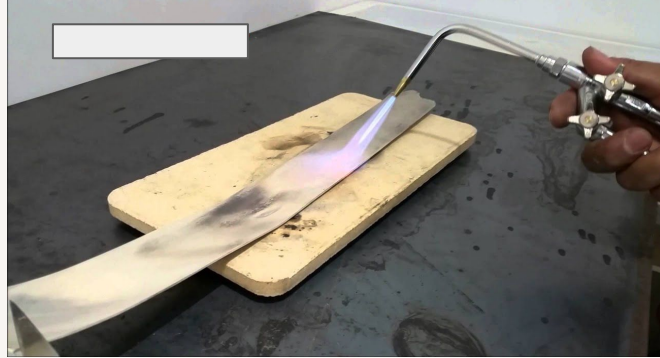
The first description of **X** is from Osaka University researcher Yoshizumi Ishino and his colleagues in 1987.

In 2020, the Nobel prize in Chemistry was awarded for the discovery of “Genetic Scissors” what we call as **X**.

Id **X**.

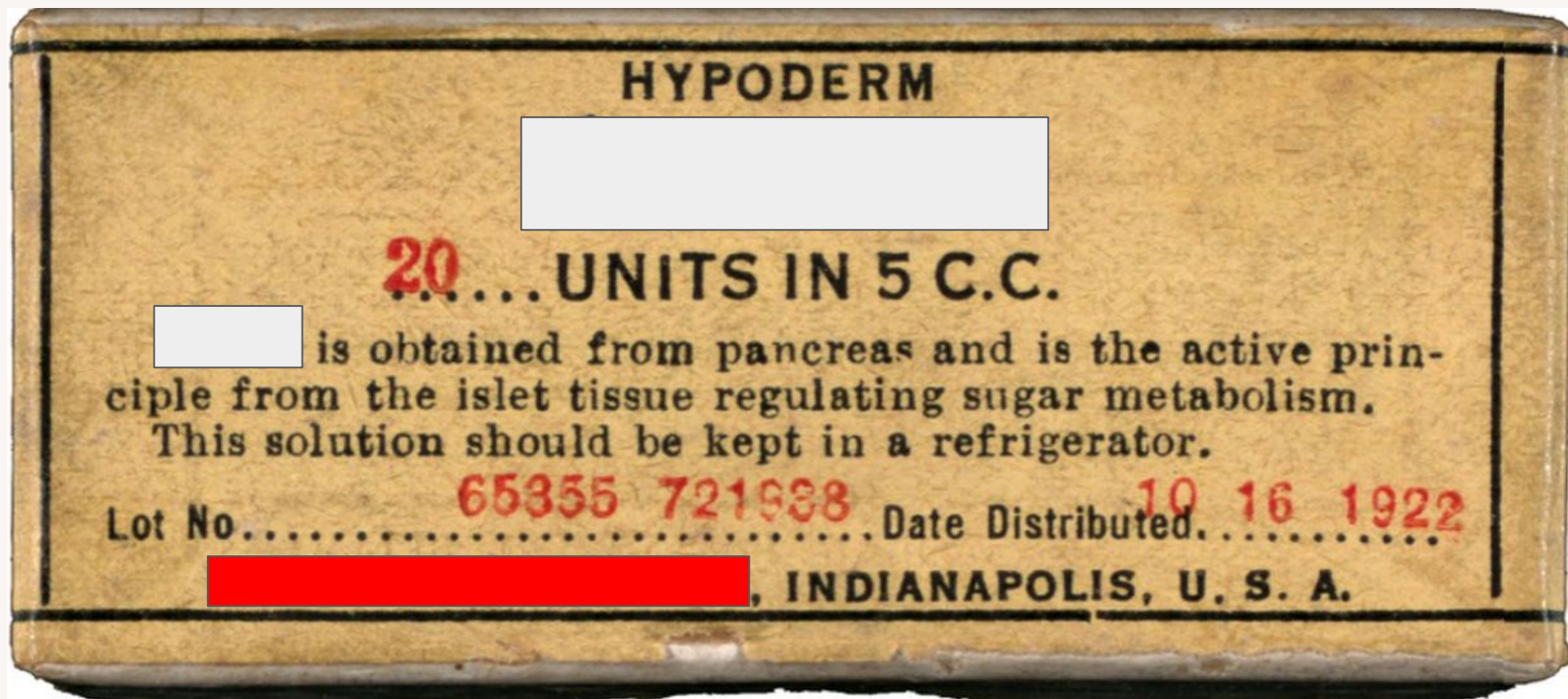
3.

CONNECT !



4.

What is being blanked out in Red? Put funda.



5.

X O157 is a fast-paced, emotionally charged true-life medical drama which verges on science fiction depicting the story of a mother who fights to save her son from a deadly bacterium.

X O157 was the culprit of the hamburger epidemic of 1993 in California, Idaho, Washington, and Nevada, during which it nearly took the life of young Damion Heersink. Damion's mother describes in detail the six-week roller-coaster assault of Hemolytic Uremic syndrome and Thrombotic Thrombocytopenic Purpura that her son endured.

Id **X**.

6.

Non exhaustive list of ?

Elizabeth Ann

CopyCat

Prometea

Snuppy

Ralph

Gene

Megan

Injaz

Dewey

7.

What is being talked about?



8.

CONNECT!



9.

The European Union funded project **Z** has issued reports on how to manage synthetic biology. The key security issues that **Z** identified involved engaging companies that sell synthetic DNA and the biohacking community of amateur biologists. Key ethical issues concerned the creation of new life forms.

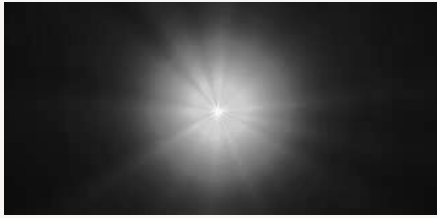
To better communicate synthetic biology and its societal ramifications to a broader public, COSY (another EU initiative on controlled engineering of biological systems for synthetic biology applications) along with **Z** published a 38-minute documentary film in October 2009 named "**Z**".

The first part of the name represents synthetic biology and the last part denotes safety.

Id **Z**.

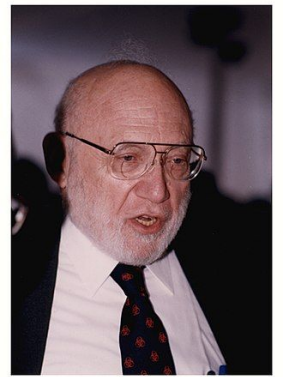
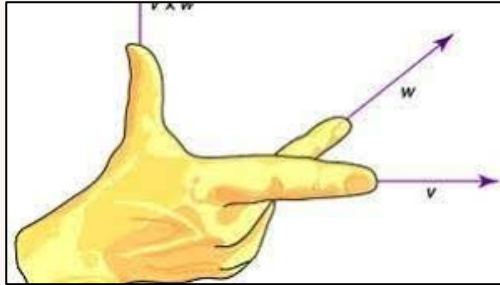
10.

Put Funda!



11.

CONNECT !



12.

Missed it?

The X Foundation was formed in 2006 by engineers and scientists alike as a not-for-profit organization to standardize biological parts across the field. The Foundation focuses on improving in areas of Technology, Law, Education and the Global Community as they apply to synthetic biology.

X is typically a DNA sequence that comply with the standards of a restriction enzyme assembly. These building blocks are used to design and assemble larger synthetic biological circuits from individual parts and combinations of parts with defined functions, which would then be incorporated into living cells such as *Escherichia coli* cells to construct new biological systems.

 ,  ,  ,  are some of the Synthetic Biology Open Language symbols used with X standards.

Id **X**.

13.

The term - - - - - is used to describe the protocols and molecular devices used in molecular biology and synthetic biology.

The first part of the term is a reference to the water found in living organisms.

The National Science Foundation (NSF) funded Wiki project Open - - - - - provides a resource for reagent, project and laboratory notebook sharing.

FITB.

14.

X life is a hypothetical form of life, the possibility of which was first discussed by Louis Pasteur

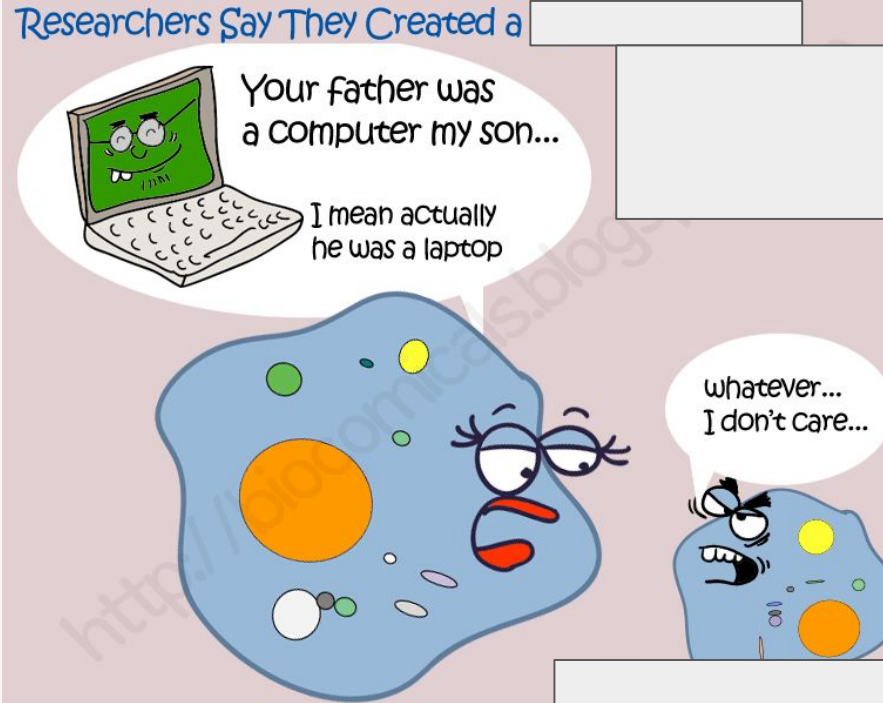
In the 2017 Daniel Suarez novel "Change Agent", an antagonist, Otto, is revealed to be a genetically-engineered **X**-human. He views other humans with disdain and causes them to feel an inexplicable repulsion by his very presence.

If proteins are exclusively composed of left-handed amino acids; RNA and DNA contain only right-handed sugars in normal life forms, it won't be the case with **X**-life.

Id **X**.

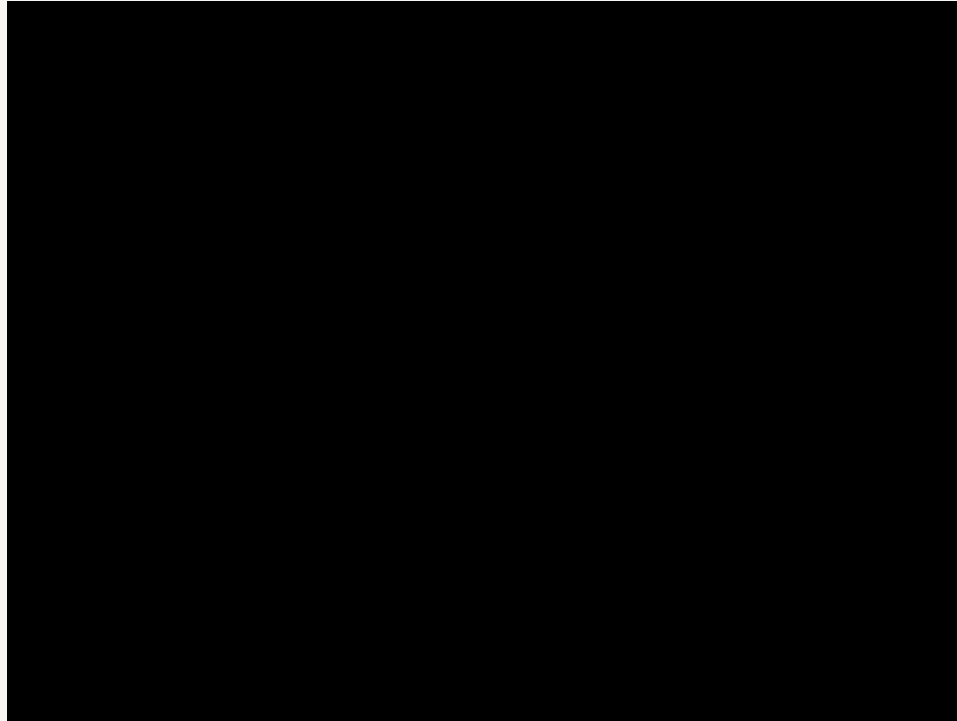
15.

Put Funda!



16*.

Identify the famous discovery in the field of synthetic and molecular biology by the person talking in the video. (Extra points for identifying the person.)



17*.

Put funda!

Who will be there?

Carlos Barbas III : Scripps Research Institute, Department of Molecular Biology
Frederick Blattner: University of Wisconsin Madison, Department of Genetics
Roger Brent: Molecular Science Institute & UCSF
James Collins: Boston University, Center for BioDynamics & Department of Biomedical Engineering
Michael Elowitz: California Institute of Technology, Departments of Biology & Applied Physics
Homme Hellinga: Duke University, Department of Biochemistry
Jay Keasling: University of California Berkeley, Chemical Engineering & LBL Synthetic Biology
Tom Knight: MIT Computer Science & Artificial Intelligence Laboratory
Wendell Lim: UCSF, Departments of Cellular & Molecular Pharmacology and Biochemistry & Biophysics
John Mulligan: Blue Heron Biotechnology
Radhika Nagpal: Harvard Department of Computer Science and Cell Biology
George Poste: Arizona Biodesign Institute
Paul Rabinow: University of California Berkeley, Department of Anthropology
Michael Savageau: University of California Davis, Department of Biomedical Engineering,
Pim Stemmer: Avidia Research Institute
Tara O'Toole: Center for Biosecurity, University of Pittsburgh Medical Center
Ron Weiss: Princeton University, Department of Electrical Engineering

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Randy Rettberg	Computer Science and Artificial Intelligence Laboratory
Maya Said	Electrical Engineering and Computer Science
Samantha Sutton	Biological Engineering

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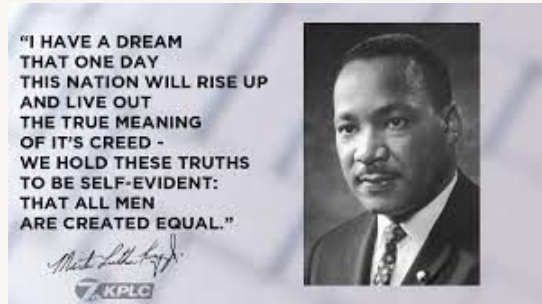
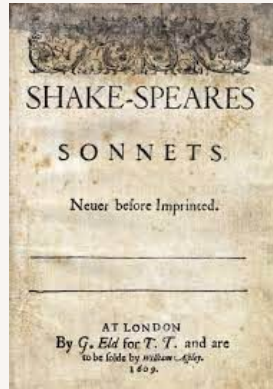
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Ty Thomson	Facilities and Transportation

18*.

CONNECT.



19*.

X is a synthetic biologist and Tenured Professor of bioengineering at Stanford University, California who is the founder and steering group member of the Build-a-Cell Initiative, an international collaboration investigating creation of synthetic live cells.

X led the team of researchers that had created the biological equivalent of a transistor, which they dubbed a "transcriptor". The invention was the final of the three components necessary to build a fully functional biocomputer - data storage, information transmission, and a basic system of logic.

In his 2009 book, *Denialism How Irrational Thinking Hinders Scientific Progress, Harms the Planet, and Threatens Our Lives*, Michael Specter called **X** 'synthetic biology's most compelling evangelist' as he is persistent on discussing the prospects and dangers of synthetic biology on nearly any forum.

Id **X**.

20*.

Identify the film. What is it about?

