

Discredited Science

TTGT11 v.4.11: None More Black

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Subject: Discredited Science; subject matter is clearly unacceptable as science for a tournament (at least for ACF).

TOSS-UPS

1. Their germination, an apparent doubling on a seasonable basis, was confirmed by Louis Thollon, Henri Perrotin, and William Henry Pickering, who also noted what he believed to be the appearance of vegetation. Perhaps their most ardent supporter was Percival Lowell. For 10 points--Giovanni Schiaparelli supposedly saw what unearthly waterways?

answer: **Martian canals** (or **canali**) (accept anything that points to canals on Mars)

2. It is partly named for the proponent of a tidal theory for the creation of the solar system in opposition to Laplace's nebular hypothesis who corrected a minor error in its derivation. It leads to infinite intensity at small wavelengths, the so-called ultraviolet catastrophe. For 10 points--name this law of blackbody radiation whose results were reconciled with those of Wein's law by Max Planck.

answer: **Rayleigh-Jeans law**

3. Also known as the biogenetic law, its supporting evidence included several fraudulent drawings of embryos produced by its originator, Ernst Haeckel. While at one point there are gill pouches, just like in fish, there is no discernable fish stage, as this concept would suggest. For 10 points--name this discredited belief that evolutionary history is mirrored by embryonic development.

answer: **ontogeny recapitulates phylogeny** or **recapitulation theory**

4. It began as the Universal Zetetic Society, founded by Samuel Birley Rowbotham, who based his theories on the observations of lighthouses. Reaching its current name under Samuel Shenton, it took the position that Arthur C. Clarke wrote the script for fake moon landings. For ten points, name this organization that currently claims that the world is a disc with the North Pole at the center.

answer: **Flat Earth Society**

5. He coined the term "invertebrates," a subject he was curator of at the Paris Museum of Natural History, a job he gained with the help of Le Comte de Buffon. Though not a Japanese emperor, he studied mollusks in the Paris Barin. Using his observations, he wrote *Philosophie Zoologique*, in which he noted changes over time and speculated on how they occurred. For 10 points--who used giraffes' elongated necks as an example of the inheritance of acquired traits?

answer: Jean-Baptiste **Lamarck**

6. The last time it was used in France was in a May 31, 1825 ceremony with Charles X. It originated with Louis IX's return from the Crusade, and belief quickly spread to England. It can be explained by tubercular adenitis causing open sores that normally disappear anyways without any treatment. For 10 points, name this royal healing power--performed on Samuel Johnson--that supposedly cured scrofula.

answer: **king's touch** or **queen's touch** (prompt on "scrofula")

7. His valid work included research on verbalization, a technique in which soaking and chilling a germinated seed allowed winter crops to be planted in the summer. His work was discredited by a group that included Peter Kapitza and Vitaly Ginzburg. Rejecting the existence of genes, he was instrumental in the death of his opponent Nikolai Vavilov. For ten points, name this Soviet scientist who falsified data to support Stalinist ideology.

answer: Trofim Denisovich **Lysenko**

8. Support for this concept was supported when Laplace used it to calculate the speed of sound in gases, while the idea of a Carnot engine originally assumed its existence. This concept was debunked by Count Rumford's experiments with boring cannons, but it was still generally accepted until almost half a century later when James Prescott Joule published a mathematical theory of heat induction that was independent of it. For 10 points--name this fluid that supposedly transferred heat.

answer: caloric fluid

9. Although it correctly predicts the oscillation frequency that is supposedly due to a linear restoring force, its prediction of a characteristic frequency for radiation emitted by atoms turns out not to be true. Although it actually does predict a 0.01 per cent average individual scattering angle, this model vastly underpredicts the probability of scattering at greater than 90 degrees. Posited by the man who determined the electron charge-to-mass ratio, this is--for 10 points--what model of the atom sometimes named for an English food?

answer: Thomson model or plum-pudding model

10. Its originators include William McCrea, as well as the duo of Thomas Gold and Sir Hermann Bondi, who adhere to the "perfect cosmological principle," which holds that the universe's large-scale features are the same in every space and time. McCrea believes it to be a consequence of the field equations of general relativity, as does Fred Hoyle, who derisively named the competing theory "the Big Bang." For 10 points--name this belief that the expansion of the universe is balanced by the continuous formation of new galaxies.

answer: steady-state theory of the universe

11. He claimed that men have greater physical variations than women because a male's bigger head causes greater birthing difficulties. Accused of using himself as the model when he claimed that brilliant men tend to be shy, eldest sons with bad handwriting, have high-pitched voices, come from pious mothers, and are unremarkable fathers in *A Study of British Genius*, he advocated a eugenic register in *The Task of Social Hygiene*. For 10 points--name this early 20th century psychologist who studied homosexuality in *Sexual Inversion* and who wrote the seven-volume *Studies in the Psychology of Sex*.

answer: Henry Havelock Ellis

12. Franz Xaver von Zach organized a search for the missing member, predicted by this law, which was somewhat fulfilled with a discovery by Guiseppe Paazzi. Urban Jean Joseph LeVerrier and John Couch Adams assumed that it held in making their searches, but the relationship failed for Neptune. For 10 points--name this law relating the distances of the planets from the Sun.

answer: Titius-Bode law

13. Aristotle and the followers of Hippocrates believed it to be the source of innate animal heat. Galen thought that it distributed vital spirit as one of the three cardinal organs, while the ancients thought it to be the seat of mental activity. For 10 points--name this organ that was once believed to carry *pneuma* in its left ventricle.

answer: heart

14. In the 1945 movie *Adventure*, Clark Gable uses it to explain the curling of women's hair. It has also been used to explain the rocking motion of Celts, the spiraling hooks that vines use to cling, and the direction dogs turn before lying down. For 10 points--name this effect that affects firing missiles and the direction of rotation of hurricanes in different hemispheres.

answer: Coriolis effect

15. Boris Derjauin spread this finding to the west in 1966. It was supposedly synthesized by N.N. Fedaykin. Supposedly condensed in quartz capillaries, it supposedly had a viscosity 15 times greater than normal, but it proved to be the result of contamination. For 10 points--name this polymerized form of H₂O.
answer: polywater

16. The search for it is the subject of a book by Richard Baum and William Sheehan, subtitled "The Ghost in Newton's Clockwork Universe." A French amateur astronomer named Lescarbault claimed to have found it in 1859, and its existence was championed by Urbain Jean Joseph Le Verrier. For 10 points--name this planet believed to be inside the orbit of Mercury, which did not give us Spock.
answer: Vulcan

17. Pepin's test was devised in 1877 to work on these. The 33rd is the largest one whose status is unknown. In The first five are 3, 5, 17, 257, and 65,537. Also, in 1732 Leonard Euler showed the next one was divisible by 641. For 10 points--name these numbers of the form one more than two to the power of two to the n, which were wrongly conjectured by their namesake to be prime.
answer: Fermat primes or Fermat numbers

18. Proposed in 1935, it described the existence of a three-layer "sandwich." Its downfall came with the development of freeze fracturing and electron microscopy, which allowed scientists to see that globular proteins actually penetrated the lipid bilayer. For 10 points--name this membrane model that has since been superseded by the fluid mosaic model.
answer: Danielli-Davson model

19. Claude Servais Mathias Pouillet used it to determine that 1,800 degrees Celsius was the temperature of the Sun's surface, about a third of the actual value. Developed as a way for chemists to estimate atomic weights, its failure at low temperatures can be better explained by the Debye model. Named after two French physicists, this is--for 10 points--what empirical law that claimed that solid elements have the same specific heat capacity?
answer: law of Dulong and Petit

20. Examples include the Brownian ratchet thought up by Richard Feynman, which people have tried to make despite Feynman claiming it wouldn't work. Others include Robert Fludd's closed cycle water pump, while Joseph Newman sued the US Patent Office for rejecting his "Energy Generation System." For 10 points--name this apparatus disapproved of by Homer Simpson because in his house, they obey the laws of thermodynamics.
answer: perpetual motion machine/device

21. The U.S. Patent Office refuses to issue any patents relating to this, citing investigations by Richard Petrasso and colleagues at MIT. It is supposed to involve 20 days of electrolytic conditioning, in which the palladium anode is soaked in a special solution, but the data has not been submitted to peer-reviewed journals, ostensibly because of patent concerns on the part of the University of Utah. For 10 points--Martin Fleischmann and Stanley Pons announced in 1989 that they had used a tabletop apparatus to create what room temperature nuclear reaction.
answer: cold fusion (prompt on "tabletop fusion," accept "Fleischmann-Pons effect" before they are mentioned)

Bonuses

1. For 10 points each--name these chemists with faulty theories of acids.

A. Although he struck gold by rejecting phlogiston theory in favor of an oxygen theory of combustion, his belief that all acids contain oxygen was quickly debunked by Humphry Davy.

answer: Antoine Laurent de Lavoisier

B. This idea that all acids were hydracids was put forward by this man who also discovered that plants need nitrogen and who invented nitrogen-based fertilizer.

answer: Justus von Liebig

C. Von Liebig built upon the "anhydride plus water" model championed by this Swede who discovered several elements and invented the current notation for chemical elements

answer: Jons Jacob Berzelius

2. For 10 points each--name these people related to the concept of spontaneous regeneration.

A. This Englishman's 1848 experiment with boiled mutton broth in sealed glass containers were taken as evidence of spontaneous generation.

answer: John Needham

B. One of Needham's strongest supporters was this Frenchman, author of the 36-volume encyclopedia *Histoire Naturelle*, who was one of the first Europeans to hold that the Earth was much older than 6,000 years.

answer: George Louis Leclerc, comte de Buffon

C. Needham's beliefs were strongly influenced by the "monads" of this mathematician and philosopher.

answer: Gottfried Wilhelm Leibniz

3. For 10 points each--name these things cited by people who believe the Moon landings were a hoax.

A. Some critics claim that the footage looks too much like this 1978 movie in which NASA fakes a Mars expedition.

answer: Capricorn 1

B. When leaving the Moon, the astronaut's lander did not have visible flame because its fuel was a mix of dinitrogen tetroxide and this compound with formula N_2H_4 .

answer: hydrazine

C. Some critics claim that astronauts would have been killed in these regions where particles of the solar wind are trapped by Earth's magnetic field.

answer: Van Allen belts

4. In 2002, one time Nobel Prize favorite Henrik Schon was fired after it was found he had falsified data. For 10 points each--

A. Schon worked for what laboratory of Lucent Technologies?

answer: Bell Labs

B. Among other things, Schon supposedly observed superconductivity in temperatures 100 degrees Celsius higher than previously reported in this spherical carbon allotrope.

answer: buckyballs or fullerenes

C. Schon's work included allegedly developing a single molecule that could act as this electronic device.

answer: transistor

5. HIV does not cause AIDS, which is actually caused by recreational drug use or by anti-HIV drugs such as AZT. For 10 points--

A. This hypothesis is named for what virologist who has also caused controversy by proposing an aneuploidy hypothesis of cancer and disputing the importance of oncogenes.

answer: Peter Duesberg

B. Duesberg's supporters include this Nobel laureate who invented PCR.

answer: Kary Mullis

C. Another man who has expressed some support of the Duesberg hypothesis is this president of AIDS-stricken Africa.

answer: Thabo Mvuyelwa Mbeki

6. Now discredited, it was once widely accepted as a science. For 10 points each--

A. Name this supposed study of the relationship between personality traits and the bumps on one's head.

answer: phrenology

B. Phrenology was originally developed by this German physician who originally called it "cranioscopy."

answer: Franz Joseph Gall

C. This Italian criminologist and author of *Criminal Man* used phrenological data to support his belief in atavism, which was the scientific basis for the forced sterilization of criminals.

answer: Cesare Lombroso

7. For 10 points each--name these logical fallacies as applied to writing good quizbowl questions.

A. This fallacy would claim that eight-line tossups are the best question because they better than two-line tossups without noting that one could write a four-line tossup.

answer: false dilemma or excluded middle

B. This line of thinking would claim that a packet must have been bad merely because a highly favored team lost on it.

answer: post hoc ergo propter hoc

C. Claiming that most people enjoyed the questions, therefore they must be good, is an example of this fallacy also known as an appeal to popularity.

answer: bandwagon fallacy

8. For the stated number of points--name these people relating to *The Bell Curve*.

A. For five points each--name the co-authors of the book.

answer: R. J. Herrnstein and Charles Murray

B. For ten points--this author wrote *Guns, Germs, and Steel* in part to refute *The Bell Curve*.

answer: Jared Diamond

C. For ten points--the book can be seen to build on the work of this psychologist whose 1969 article "How much can we boost IQ and scholastic achievement?" was part of his genetic explanation of racial intelligence differences.

answer: Arthur Jensen

9. For 10 points each--answer these questions about the four humors.

A. All or nothing, what four bodily fluids are the four humors?

answer: blood, phlegm, black bile, yellow bile

B. What temperament was associated with black bile?

answer: melancholic or melancholia

C. Meaning "bad mixture," this term was used by the Greeks to refer to the imbalance of humors

answer: dyscrasia

10. For 10 points each--name these alchemists.

A. This alchemist isolated arsenic, but is better known as the patron saint of natural science and teacher of Thomas Aquinas.

answer: Albertus Magnus

B. Born Gebert of Aurillac, this first Frenchman to be pope had a great interest in alchemy.

answer: Sylvester II

C. Also known as Theophrastus Philippus Aureolus Bombastus von Hohenheim, this man who coined the word "alcohol" thought he was better than an ancient Roman physician.

answer: Paracelsus

11. For 10 points each--answer these questions about the geocentric model of the universe.

A. This Alexandrian laid the mathematical foundation for a geocentric universe in his *Almagest*.

answer: Cladius Ptolemy

B. In an attempt to reconcile geocentrism with observations, Ptolemy proposed this concept in which planets orbit an invisible center that orbits Earth in order to explain retrograde motion.

answer: epicycles

C. This man who was maimed at the age of 18 in a duel over a minor mathematical disagreement proposed a cosmology in which the Sun and Moon orbit around a stationary Earth, while the five other planets are satellites of the Sun.

answer: Tycho Brahe (Hence, Brahe's artificial nose.)

12. For 10 points each--name these scientists who supported phlogiston theory.

A. This eccentric scientist discovered what he called "Factitious Air." He also isolated argon, but his discovery was not confirmed until almost 100 years later by William Ramsay.

answer: Henry Cavendish

B. This Englishman's belief in phlogiston can be seen in his naming oxygen "dephlogisticated air."

answer: Joseph Priestley

C. This supporter of phlogiston made a fortune from an ammonium chloride factory, which he used to fund geologic research that led to his Plutonic theories.

answer: James Hutton

13. For 10 points each--name these things relating to intelligent design.

A. This Englishman's 1802 *Natural Theology* begins with "The Watch on the Heath," describing the idea of a "watchmaker" god.

answer: William Paley

B. Stephen Jay Gould argued against intelligent design, claiming that this titular structure of a 1980 essay collection is too odd to have been made by an intelligent god.

answer: the panda's thumb

C. Upon his death in 1828, this Englishman left 8,000 pounds to fund a series of books supporting intelligent design by the likes of geologist and dean of Westminster Abbey William Buckland, while Charles Babbage wrote an unofficial ninth treatise in the series.

answer: Rev. Francis Henry Egerton, eighth and last Earl of Bridgewater

14. For 10 points each--name the following concerning a theory of natural history.

A. William Whewell coined this term for the belief that devastating forces had caused the varieties within Earth's environment.

answer: catastrophism

B. A leading proponent of catastrophism, this French comparative anatomist improved upon Linnaean classification, but claimed "Fossil man does not exist."

answer: Georges Cuvier

C. Although catastrophists disagreed with Sir Charles Lyell's uniformitarianism, many did agree with this belief that Earth's past is explainable in terms of currently observable natural processes.

answer: actualism

15. One of the most influential ones was the *Physiologus*, a treatise written in Alexandria circa 200 AD.
For 10 points each--

A. Name these books of animal lore chock full of cryptozoological creatures.

answer: bestiary or beastiaries

B. One major source for bestiaries was this Roman era equivalent of Margaret Mead, who believed everything he heard and read, passing on fabulous stories of creatures in his *Natural History*

answer: Pliny the Elder

C. Pliny died while trying to observe this event.

answer: eruption of Vesuvius (prompt on the destruction of Pompeii)

16. 30-20-10. Name the thinker.

30: He believed that the Earth was motionless in a swirling vortex that carried the Earth around the Sun. His followers also pressed the idea that Earth is a "prolate spheroid," elongated rather than flattened at the poles like an "oblate spheroid."

20: He denied that animals felt pain in positing that animals were automata as opposed to human beings who are conscious creatures endowed with a soul in his brand of duality.

10: This philosopher is the father of analytic geometry.

answer: Rene Descartes

17. The biometricians were a faction that believed that Darwinism and Mendelian genetics were incompatible. For 10 points each--

A. The leading biometrician was this author of *Hereditary Genius*, advocate of fingerprinting, and advocate of Charles Darwin.

answer: Sir Francis Galton

B. Among the leading biometricians was this disciple of Galton, who founded the first university statistics department and developed a namesake chi-square test that is best suited for testing independence or goodness of fit.

answer: Karl Pearson

C. This Dutch scientist is considered one of the rediscoverers of Mendel, but he actually scoffed at Mendel's work as an exception to the rule, preferring a theory of speciation by mutation.

answer: Hugo de Vries

18. For 10 points each--name these books by a fraud named Freud.

A. Published in 1900, this work cites wish fulfillment as important to the title phenomenon.

answer: The Interpretation of Dreams

B. Freud's personal favorite among his own works, it includes a description of Freudian slips.

answer: The Psychopathology of Everyday Life

C. Composed of four essays, this work, it contains Freud's contribution to social anthropology, such as the idea of the primal horde. Its first section is "The Horror of Incest."

answer: Totem and Taboo

19. For 10 points each--answer these questions about a so-called science.

A. This set of techniques is the titular subject of a 1950 book subtitled "The Modern Science of Mental Health."

answer: Dianetics

B. Dianetics and Scientology seek to attain this status of being free of harmful engrams.

answer: clear

C. One becomes "clear" in this process, which can involve the use of an E-Meter.

answer: auditing

20. For 10 points each--give the name that gave these names to a vitalistic energy.

A. animal magnetism.

answer: Anton Mesmer

B. Elan vital.

answer: Henri Bergson

C. Orgone.

answer: Wilhelm Reich

21. 30-20-10 Name the scientist.

30: This person thought that objects have inertia only because of interaction with the mass of the rest of the universe in his namesake principle.

20: Although he was cited as an influence by Einstein, he never accepted general relativity or quantum mechanics.

10: This physicist gave his name to the ratio of an objects speed to the speed of sounds.

answer: Ernst Mach

22. For 10 points each--name these things concerning the Scopes Monkey trial.

A. Scopes was convicted of violating this Tennessee law banning the teaching of evolution.

answer: Butler Act

B. This prosecutor died soon afterwards from diabetic complications due to overeating.

answer: William Jennings Bryan

C. John Scopes was a substitute teacher acting at the urgings of the ACLU in this Tennessee town.

answer: Dayton

23. For 10 points each--name the ancient philosopher who believed the following:

A. This Milesian who predicted a solar eclipse in 585 BC believed that the earth was a flat disc floating on water.

answer: Thales

B. This student of Parmenides denied the possibility of motion with proofs such as the stadium paradox.

answer: Zeno of Elea

C. He divided animals into blooded and bloodless and arranged them according to degree of vital heat.

answer: Aristotle