1. He was afflicted with tuberculosis as a child and treated by Joseph Lister after his leg was amputated. While in Edinburgh, he met Robert Louis Stevenson, who used him as a model for Long John Silver, and the two men collaborated on four plays. FTP, name this prominent editor of The Magazine of Art, The Scots Observer, and The New Review, whose "In Hospital" poems are considered to be pioneering experiments in free verse, best remembered today for the often anthologized "Invictus."

Answer: William Ernest Henley

2. The libretto was written by the composer and Giacomo Ruffini, based on Anelli's book for Ser Marc Antonio. Nocina and Ernesto want to wed, and Dr. Malatesta helps them gain the title character's permission by having Norina go through a mock marriage, pretending to be his sister. FTP, identify this opera buffa, the final completed work of Gaetano Donizetti.

Answer: Don Pasquale

3. In the 1920s, Frits Went devised a method to collect it by cutting off the tips of oat coleoptiles, and Kenneth Thimann later purified it and determined its molecular structure. Low concentrations of it stimulate elongation of cells, while higher concentrations inhibit elongation; in addition, it stimulates the differentiation of vascular tissues, the development of fruits, and root branching. FTP, identify this chemical, whose name derives from a Greek word meaning "to increase," the best known plant hormone.

Answer: auxin

4. The suit which arose from the contested election was settled by the Supreme Court's opinion in Luther v. Borden. After an ad hoc convention framed a "People's Constitution" which provided for total suffrage for white males, separate elections were held, in which the charter party re-elected Samuel King, imposed martial law and called out the state militia. FTP, identify this rebellion, which crumbled when President Tyler instructed federal troops to support the Rhode Island militia.

Answer: the Dorr rebellion

5. After leaving jail, he is blacklisted in Packington, and works in a harvester plant and a foundry before leaving the city to live as a tramp. Returning to Chicago, he makes a living as a thief and a scab before falling in with a corrupt politician. FTP, identify this Lithuanian-born stockyard worker, who goes to jail after defending his wife Ona from a foreman, the main character of Upton Sinclair's The Jungle.

Answer: Jurgis Rudkus

6. William de Kooning called him a "Geiger counter of art," and he and his friend Matta were the last two artists that Breton officially admitted into the surrealist circle. In 1946, a fire in his Connecticut studio destroyed much of his work, and his marriage fell apart after a cancer operation left him impotent. FTP, identify this artist, born Vosdanig Adoian, who committed suicide in 1948 after breaking his neck in an automobile accident, best known for One Year He Milkwood and The Liver is the Cock's Comb.

Answer: Arshile Gorky

7. Because university officials did not want to advance a science they thought would drive students crazy, he was forced to use part of a cafeteria for impoverished students as a laboratory when he started his work at the University of Leipzig. Although he was almost blind, he wrote more than 50,000 pages during a career that was so influential that 1979, the hundredth anniversary of the beginning of his formal research, was recognized as psychology's centennial by the APA. FTP, identify this German, whose method of analytic introspection laid the foundation of structural psychology.

Answer: Wilhelm Wundt
8. In the northwest, the Turan Plain rises to the Kara-Kalpak and the Ustyart Plateau, while the Pskem mountains in the east rise to Beshtor Peak. After declaring its independence on August 31, 1991, Islam Karimov became the country's first president, and banned use of the ruble to strengthen the som. FTP, identify this central Asian republic, bordered by Kyrgyzstan, Tajikistan, Turkmenistan, Afghanistan, and Kazakhstan, whose cities include Andizhan, Bukhara, Samarkand, and Tashkent.

Answer: Uzbekistan

9. In 1927, Phipps and Taylor did it with hydrogen, although the original used silver. The atoms were collimated after coming out of an oven, whereupon they passed through a magnet whose poles were shaped to produce a gradually increasing magnetic field. FTP, identify this experiment of 1922, which showed that the magnetic moments of the atoms were quantized to two spacial orientations.

Answer: the Stern-Gerlach experiment

10. During his reign, the taille (TIE) was quadrupled, the army was expanded through the compagnies d'ordonnance and the francs-archers, and industry was bolstered by the Lyons fairs. At the death of King Rene, he incorporated Anjou and Provence into the royal domain; he acquired Roussillon, at the cost of precipitating the union of Aragon and Castile; and by signing the treaty of Picquigny with Edward IV, he brought an end to conflict with England. FTP, name this French monarch, nicknamed the "universal spider," who succeeded Charles VII and ruled from 1461 to 1483.

Answer: Louis XI

11. He stated that God was the transcendent first cause of being, not an immortal man, in The Incoherence of the Incoherence. Best known for the doctrine of the unity of all human intellects, he thought that the material intellect was incorruptible, and that there would always be a constant amount of knowledge in the world. FTP, identify this Spanish philosopher of the twelfth century, whose name came to be applied to any non-Thomist interpretations of Aristotle.

Answer: Averroes

12. A noted mountain climber and pilot, he observed a solar eclipse in 1932 while flying his own plane at a height of 9,000 feet. A graduate of the Columbia University School of Mines, he developed a method of seeding clouds with dry ice along with Vincent Shaefer, while the trough and pump that bear his name are still in use today. FTP, name this chemist, developer of the high-vacuum transmitting tube and the atomic hydrogen welding torch while employed by General Electric, whose pioneering work on surface chemistry made him the first scientist employed by an industrial organization to win the Nobel Prize when he did so in 1935.

Answer: Irving Langmuir

13. It lies beneath Mount Cithaeron, just south of the Asopus river, and the temples of Hera and Athena Areia with artwork by Polygnotus and Phidias were located here. Siding with Athens during the Peloponnesian War, a Spartan army led by Archidamus attacked the city in 429, leading to a two year blockade. FTP, identify this Boeotian city at the head of the Gulf of Corinth, the site of the defeat of Mardonius and the Persians in 479.

Answer: Plataea

14. The tragicomic subplot deals with Antonio's attempts to seduce Isabella, the wife of an old doctor, and may have been added by William Rowley. To avoid an arranged marriage to Alonzo de Piracquo and have Alsimero instead, the daughter of the governor of Alicant, Beatrice Joanna, gets her hideous servant, De Flores, to kill Alonzo. FTP, identify this tragedy, first performed in 1622 and written by Thomas Middleton.

Answer: The Changeling
15. He found it difficult to work with feature directors, arguing with Van Dyke over White Shadows of the North and Murnau over Tabu. During the final 20 years of his life, he was only able to finish two films, 1934’s Man of Aran and 1948’s Louisiana Story, continuing to insist that his films grow out of his characters lives, even if it meant spending years with them. FTP, name this filmmaker, best remembered for early documentaries like Moana and Nanook of the North.
Answer: Robert Flaherty

16. This man’s future father-in-law, a king, offered potential suitors an opportunity to win his daughter by racing their chariots against his, on the condition that if they lost they would be killed. Since the king’s horses had been given to him by Ares, he stood in no real danger of losing his daughter. However, this man came along with horses that had been given to him by Poseidon and beat the king, winning his daughter Hippodamia. FTP, identify this man, better known for going through life with an ivory shoulder after the gods restored him to life following his grisly murder by his father Tantalus.
Answer: Pelops

17. He became famous for the apocalyptic poems collected in Album de Vers anciens (al-BUM day VAIRS ahn-SYEN) before retiring from writing in 1900. Seventeen years later, he decided to publish again, releasing La Jeune Parque (lah ZHUN PARK) and dedicating it to Andre Gide. FTP, name this author of Eupalinos, Cahier B (kye-AY BAY), and Analecta, best known for Aurore (uh-ROR) and Le Cimitiere Marin (luh sim-ee-TAIR mah-RINH).
Answer: Paul Valery

18. In II Kings, he is mentioned as the son of Amittai of Gath-hepher who predicted that Israel would be liberated from Syria. An enormous gourd grew in a day to shelter him from the sun as he preached, and the entire city put on sackcloth to repent after he aring him speak. FTP, name this Biblical figure, the fifth of the minor prophets whose mission to Nineveh was delayed by the time he spent in the belly of a fish.
Answer: Jonah

19. They are usually liquids that are slightly soluble in water and boil between 340 and 375 degrees Fahrenheit. Oxygen derivatives of them include menthol and camphor, while the most useful ones are pinene and limonene. FTP, identify this class of hydrocarbons, which have the formula $C_{10}H_{16}$.
Answer: terpenes

20. In 1878, he was elected mayor of Scranton on the Greenback-Labor ticket, but would later become a Republican, serving in the Bureau of Immigration for twenty four years. After dropping out of school at the age of 13, he became an apprentice machinist, and became president of the Machinist and Blacksmith’s National Union in 1872. FTP, name this labor leader, who was a powerful advocate of trust regulation, cooperatives, and the abolition of child labor during his fourteen years as Grand Master Workman of the Knights of Labor.
Answer: Terence Vincent Powderly

21. While an attache to the legation at Rio de Janeiro, he became friends with Paul Claudel, and the two would later collaborate on several works. A student of Widor and d’Indy at the Paris Conservatory, he came to the United States in 1940, where he taught at Mills College for 31 years. FTP, identify this composer of The Apotheosis of Moliere, Bolivar, The Creation of the World, Saudades do Brazil, and The Beef on the Roof, one of the leading members of Les Six.
Answer: Darius Milhaud
1. Identify the following terms from superconductivity, FTP each.
   a) This is a system of two electrons with zero spin and zero momentum that can be considered a single particle.
      ANS. Cooper pair
   b) Cooper pairs can tunnel from one superconductor to another with no resistance when two superconductors form this type of connection.
      ANS. Josephson junction
   c) When a dc magnetic field is applied to a superconducting ring with two Josephson junctions, interference effects are produced. FTP, identify the device that uses this effect to measure weak magnetic fields.
      ANS. SQUID (or Superconducting Quantum Interference Device)

2. Identify the operas on a 15-10-5 basis -- 15 points given the name of an aria, 10 points given information about the aria and the character who sings it, and 5 points given a general description.
   a. 15) Stride la vampa
      10 In this aria, the gypsy Azucena describes the terrible day on which she saw her mother burned at the stake.
      5 In the conclusion of this Verdi opera, the Count di Luna kills the singer Manrico, finding out only afterwards that Manrico was really his brother.
      ANS. Il Trovatore (or The Torbadour)
   b. 15) Vissi d'arte
      10 This aria celebrates love and music, the two forces to which the main character has devoted herself.
      5 This Puccini opera, set in Italy during the Napoleonic era, tells of a diva who murders the sinister Roman police chief Scarpia.
      ANS. Tosca

3. Identify the Toni Morrison novels on a 10-5 basis -- 10 points if you can identify the novel given its first line, 5 if you need a description.
   a. 10) "124 was spiteful."
      5 The stranger whom Sethe and Denver take into their home appears to be the living ghost of the daughter Sethe had killed years earlier.
      ANS. Beloved
   b. 10 [This is not the first line of the novel, but the first line of the second prologue]: "Quiet as it's kept, there were no marigolds in the fall of 1941."
      5 In this novel, eleven-year-old Pecola Breedlove is impregnated by her father Cholly.
      ANS. The Bluest Eye
   c. 10 The North Carolina Mutual Life Insurance agent promised to fly from Mercy to the other side of Lake Superior at three o'clock.
      5 The greedy Milkman Dead goes on a quest for gold and instead learns about his family's past.
      ANS. Song of Solomon

4. Identify the following concerning the Spanish-American War, for 10 pts. each.
   a. When Hearst published this letter from the Spanish minister calling McKinley "weak" and a "would-be politician," there was a public uproar.
      ANS. De Lome letter
   b. This amendment to the war resolution disclaimed any American intention to take control of Cuba.
      ANS. Teller amendment
   c. The concentration camps to quash the Cuban uprising that were established by this Spanish general, nicknamed the "Butcher," drew American sympathy to the rebels.
      ANS. Valeriano Weyler
5. Identify these types of galaxies FTP each.
   a) They are spirals with nuclei so bright that the light coming from the core often exceeds that of all the stars in the galaxy, although the fact that the light is an emission line spectrum suggests that the energy is not produced by thermonuclear reactions.
      ANS. Seyfert
   b) They are the elliptical counterparts of Seyfert galaxies.
      ANS. N
   c) They are like N galaxies, but show marked short term variations in intensity, and are now thought to be giant ellipticals.
      ANS. BL Lac galaxies

6. Identify the following Japanese novelists FTP each.
   a) His late works, such as The Key and Diary of a Mad Old Man, deal with the power of sexuality, although the bulk of his fiction deals with classical culture, as seen in The Makioka Sisters and Portrait of Shunkin.
      ANS. Tanizaki Junichiro
   b) Much of his writing celebrates the natural world and anti-intellectualism, as in The Sound of Waves, and analyzes the separation of spirit and body, especially in the tetralogy The Sea of Fertility.
      ANS. Mishima Yukio
   c) A Catholic and student of French literature, his work depicts the difficulties of being a Christian in Japan, in works like Silence, Scandal, and The Sea and Poison.
      ANS. Endo Shusako

7. Identify the English queens/consort on a 10-5 basis.
   a. 10) After the death of her husband, she married Baron Seymour of Sudeley but died in childbirth the following year.
      5) She was twice widowed before marrying Henry VIII in 1543.
      ANS. Catherine Parr
   b. 10) After the death of her husband, this queen consort married Owen Tudor.
      5) In 1420 she married Henry V.
      ANS. Catherine of Valois
   c. 10) After the 1817 death in childbirth of Princess Charlotte, the only legitimate child of the Prince Regent, the prince's brothers dutifully scrambled to marry and produce legitimate heirs to the throne. The future William IV ended his relationship with his mistress of over 20 years and married this woman.
      5) The capital of South Australia is named for this woman, a daughter of the duke of Saxe-Meiningen.
      ANS. Adelaide

8. Identify the French philosopher from works, 30-20-10.
   30) Letter to a Japanese Friend and The Gift of Death
   20) Plato's Pharmacy and Signature Event Context
   10) Of Grammatology and Differance
      Answer: Jacques Derrida

9. Identify the following features of Scottish geography FTP each.
   10) The cities of Leith, Kirkcaldy, and Edinburgh lie on this southeastern firth.
      ANS. Firth of Forth
   10) The Scapa Flow is located in these islands, separated from Scotland by the Pentland firth.
      ANS. Orkney islands
   10) The city of Brodick is on this island in the Firth of Clyde better known for its sweaters.
      ANS. Arran
10. Here's a bonus which requires you to combine Thomas Hardy and pop music. For example, if I said, "The novel in which Bathsheba Everdene ultimately marries Gabriel Oak, and the New Zealand band which released the album Temple of Low Men," you'd say "Far From the Madding Crowded House." Ten points for each correct combination.
a) The Men at Work song which mentions a Vegemite sandwich, and an 1872 Hardy work published anonymously.
   ANS. Down Under the Greenwood Tree
b) A Beatles song, and the novel whose central female characters are Sue Bridehead and Arabella.
   ANS. Hey Jude the Obscure
c) The novel in which Stephen Smith and Henry Knight love Elfride Swancourt, and a slow-tempo song by Billy Idol.
   ANS. A Pair of Blue Eyes Without a Face

11. Identify the following materials from bacterial cell walls, FTP each.
a) The cell wall is made up of this material unique to bacteria, which is composed of sugar chains cross-linked by peptides.
   ANS. peptidoglycan
b) This substance surrounds the cell walls of bacteria that cause tooth decay, forming the basis of plaque.
   ANS. slime layer

c) Some bacteria are covered with these hair-like protein projections, which attach the bacterium to other cells.
   ANS. pili

12. Answer the following questions about a difficult period in Anglo-Canadian relations, FTP each.
a) On the night of December 29, 1837, a group of Canadian militiamen crossed the Niagara River and set fire to a small American steamboat.
   ANS. the Caroline
b) In retaliation for the burning of the Caroline, a group of Americans crossed the St. Lawrence River on May 29, 1838 and burned this Canadian steamship, named for an English prime minister.
   ANS. Sir Robert Peel

c) In 1840, tensions again ran high when this Canadian deputy sheriff was arrested in New York for murdering Amos Durfee during the Caroline incident.
   ANS. Alexander McLeod

13. Identify the following figures from Jainism for 10 pts. each.
a) This monk died at Pava around 476 B.C. and is considered to be the founder of Jainism.
   ANS. Vardhamana Mahavira
b) Some Jains claim that this Mauryan emperor abandoned his throne to follow Bhadrabahu, but it is more likely that he was deposed and exiled.
   ANS. Chandragupta

c) This mythical first Tirthankara or Jina is depicted as a golden bull.
   ANS. Rishabha

14. Identify these twentieth century architects FTP each.
a) This Estonian-born functionalist designed the Yale University Art Gallery, the Richards Medical Research Building, and the Salk Institute.
   ANS. Louis Kahn
b) He designed the campuses of the University of Minnesota and Texas, but is better known for the Supreme Court building and as the architect of the first skyscraper, the Woolworth building.
   ANS. Cass Gilbert

c) He designed Liverpool's Anglican cathedral and the new Bodleian library, as well as the new Waterloo bridge. After World War II, he was in charge of the rebuilding of the House of Commons.
   ANS. Giles Gilbert Scott
15. Identify these early American realists, for the stated number of points.

5) This most popular of realist authors wrote innumerable novels, including A Hazard of New Fortunes and The Rise of Silas Lapham.  
   **ANS. William Dean Howells**

10) An advocate of honest realism, or "veritism," he wrote numerous novels of prairie life, including Main-Travelled Roads.  
   **ANS. Hamlin Garland**

15) His accounts of Southern brutality and corruption included Kate Beaumont and a Civil War novel, Miss Ravenel’s Conversion from Secession to Loyalty.  
   **ANS. John William De Forest**

16. Identify the mathematicians on a 15-10-5 basis.

   a. 15) He was the first to provide a rigorous proof for Taylor’s theorem, and he improved on Leverrier’s description of the motion of Pallas.
      10) His first major achievements were the simple solution of Apollonius’s problem and the generalization of Euler’s theorem on polyhedra in 1811.
      5) His greatest achievement was his application of limits and continuity to define the principles of calculus, and his masterpiece was 1821’s Cours d’analyse.  
         **ANS. Augustin Cauchy**

   b. 15) In 1756, he wrote a letter to Euler containing his solution to the isoperimetrical problem which contained important advances in the calculus of variations.
      10) His explanation of the libration of the moon won a prize from the Academie Francaise, and Frederick the Great asked him to replace Euler as head of the Berlin Academy.
      5) In his masterpiece, 1787’s Mechanique analytique, he produced a few basic formulas from which specific equations in mechanics could be derived.  
         **ANS. Joseph Lagrange**

17. Identify the following monarchs on a 10-5 basis.

   a. 10) He was killed by a stray bullet while besieging the fortress at Fredrikssten.
      5) He lost the battle of Poltava.  
         **ANS. Charles XII**

   b. 10) Crowned in 1651, he lived in poverty for years before issuing the Declaration of Breda and taking the throne.
      5) Although he signed the Treaty of Dover with Louis XIV, the country opposed entry in the Third Dutch War and he was forced to sign the Test Act.  
         **ANS. Charles II**

   c. 10) He was dominated by his queen, Maria Luisa, and his chief minister, Godoy.
      5) In 1808, he was forced to abdicate the throne in favor of his son, Ferdinand VII.  
         **ANS. Charles IV**

18. Answer these questions concerning South American geography, FTP each.

   a) This country contains the source of the Amazon at the end of the Maranon river, which joins the Napo and Ucayali to feed into the Solimoes.  
      **ANS. Peru**

   b) In the west, this country is bounded by the Cordillera Occidental, while the Altiplano Plain separates it from the Cordillera Real in the east.  
      **ANS. Bolivia**

   c) Hindu and Javanese are native languages of this country, whose physical features include the Juliana Top and Lake Brokopondomeer.  
      **ANS. Suriname**
19. In Jane Austen’s novels, the heroine often faces a rival for the affection of her chosen gentleman. Identify the Austen novel on a 10-5 basis -- 10 points given the name of the female rival, 5 points given the name of the gentleman.

a. 10) Lucy Steele
   5) Edward Ferrars
   ANS. Sense and Sensibility

b. 10) Louisa Musgrove
   5) Captain Wentworth
   ANS. Persuasion

c. 10) Mary Crawford
   5) Edmund Bertram
   ANS. Mansfield Park

20. Identify the following figures from the history of the Congo, FTP each.

a) This Belgian king organized the Congo Free State into a personal estate in 1885.
   ANS. Leopold II

b) He led the secession of Katanga; Dag Hammarskjold was killed on the way to negotiations with this man.
   ANS. Moise Tshombe

c) This colonel led coups in September 1960 and November 1965, becoming president after the second one.
   ANS. Joseph Mobutu